



The United Republic of Tanzania
Ministry of Industry and Trade
COLLEGE OF BUSINESS EDUCATION



5th BUSINESS AND ECONOMIC DEVELOPMENT CONFERENCE

(BEDC2024)

Held in Dodoma at Treasury Square on 22nd – 23rd November, 2024

BOOK OF PROCEEDINGS FOR BEDC2024



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The United Republic of Tanzania
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College of Business Education



THE FIFTH BUSINESS AND ECONOMIC
DEVELOPMENT CONFERENCE
(BEDC2024)

**BOOK OF PROCEEDINGS
FOR BEDC2024**

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Conference Message

The College of Business Education (CBE) is delighted to host its 4th Conference on Business and Economic Development (BEDC 2024), held from the 22nd to the 23rd of November 2024. This conference serves as a significant platform to address pressing economic challenges that impede the business and investment environment, ultimately aiming to foster economic development. The theme for this year's conference is "**Business and Enabled Environment for Inclusive Development**", which will be explored over two consecutive days through the presentation of research findings by various scholars.

The research presentations will focus on a range of pertinent topics, including:

- The World Economic Outlook 2023
- Sustainable Business and Economic Practices
- Digital Transformation and Start-ups
- Finance and Investment Environment
- Labour Markets and Human Resources
- Government and Economic Policy
- Industry-Specific Challenges

As an academic institution, one of our core responsibilities is to conduct research that addresses societal and economic challenges. At CBE, we have been striving to fulfil this mandate, primarily through funding sourced from our internal revenues. However, the limitations of relying solely on internal income have posed challenges, leading to fewer studies being conducted on critical issues. For academia to contribute more effectively to national development, it is imperative to empower institutions like ours.

There remains limited awareness within Tanzanian society regarding the importance of supporting higher education institutions in conducting research. Therefore, I earnestly call upon our responsive government to enhance its support for our College's research initiatives. Such support will enable us to achieve our academic and developmental goals more efficiently and productively.

Once again, I extend a warm welcome to all participants. Thank you for your attention, and I wish you fruitful discussions and deliberations during this conference.

Thank you.

Prof. Edda Tandi Lwoga

Rector – College of Business Education

The Influence of Employees' Motivation on Job Performance in Public Sector in Tanzania: A Case of the Ministry of Home Affairs

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Abstract

This study investigated the influence of employees' motivation on job performance in the Ministry of Home Affairs. The study focused on the influence of extrinsic motivation and intrinsic motivation on employee performance in the Ministry of Home Affairs. The research methodology adopted for this study encompassed a cross-sectional design with a quantitative approach. The study population comprised employees from various levels within the ministry, totaling 120 individuals. A sample size of 93 participants was determined using the Yamane formula, and a simple random sampling technique was employed for participant selection. Data were collected through self-administered questionnaires. Descriptive and inferential statistical analyses were used, including multiple linear regression, using SPSS version 23 to analyze the data. The multiple linear regression analysis revealed significant predictors of employee performance within the Ministry of Home Affairs. Both intrinsic and extrinsic motivation showed positive associations with performance, with standardized coefficients (β) of 0.587 ($p < 0.001$) and 0.176 ($p = 0.036$), respectively. These results indicate that for every one-unit increase in intrinsic motivation, employee performance is expected to increase by 0.587 units, holding other variables constant. Similarly, for extrinsic motivation, a one-unit increase is associated with a 0.176-unit increase in performance. The overall model was statistically significant ($F(2, 90) = 28.491, p < 0.001$), explaining 38.8% of the variance in employee performance. This study recommends implementing comprehensive motivational strategies that encompass both intrinsic and extrinsic factors to enhance employee performance effectively.

Keywords: Employees motivation, Job performance

1. Introduction

In the dynamic landscape of modern public organizations, the pivotal role of employee performance in driving efficiency, productivity, and overall effectiveness cannot be overstated (Kapinga et al., 2018). The connection between motivated employees and organizational success has long been recognized as a cornerstone of effective management. As such, comprehending the multifaceted influence of motivation on employee performance within the context of public organizations becomes a critical endeavor (Kapinga and Kitindi, 2018; Le et al., 2021).

Motivation, the impetus that propels individuals to engage actively in their work, comprises two distinct yet interconnected dimensions: intrinsic and extrinsic factors. Intrinsic motivation

springs from an internal wellspring of passion for the work itself, the desire for personal growth, and the gratification derived from overcoming challenging tasks (Fakai, 2022; Ozkeser, 2019). This is complemented by extrinsic motivation, which hinges on external rewards like monetary incentives, acknowledgment, and a sense of job security. The amalgamation of these intrinsic and extrinsic elements forms a dynamic and intricate framework that orchestrates an individual's commitment and fervor toward their professional responsibilities (Fakai, 2022; Ozkeser, 2019). This motivational interplay cultivates a work environment where employees willingly channel their dedication and enthusiasm into tasks, resulting in a discernible elevation of both productivity and accomplishment within the broader organizational sphere (Budur & Poturak, 2021; Diamantidis & Chatzoglou, 2019).

Globally, there has been widespread recognition of motivation as a driving force behind enhanced employee performance. This acknowledgment is particularly evident in the Asian region, where countries like Indonesia and China have embraced and extensively employed motivational strategies to bolster the effectiveness of their workforce. For instance, in Indonesia, Kuswati (2020) highlights a noticeable upsurge in modern organizations employing various motivational techniques. These methods include fostering collective engagement among employees, facilitating efficient communication, providing recognition for achievements, delegating authority, and nurturing mutual attention within the workplace. The result is tangible improvements in employee performance. Similarly, in China, Bao and Nizam (2017) reveals a longstanding tradition of utilizing motivation to drive employee excellence, which has more recently been universally adopted across organizations as a pivotal catalyst for augmenting performance. Key motivational practices employed in Chinese enterprises encompass comprehensive training and development opportunities, implementing effective reward and recognition systems, and delegating authority to employees, all of which wield significant influence over enhancing employee performance (Bao & Nizam, 2017). These cross-cultural observations underscore the undeniable role of motivation in cultivating a heightened level of workforce productivity and accomplishment, ultimately contributing to organizational success. In essence, these global and regional instances underscore how motivation serves as a cornerstone in unlocking the potential of employees and driving organizational excellence.

In the African context, the deployment of motivational strategies is not a recent occurrence but rather a well-established practice spanning decades. Olusola et al., (2021) in Ghana highlights the consistent use of motivation in activating human capital and enhancing employee performance. Similarly, Ekundayo, (2018) in Nigeria underscores the enduring utilization of both intrinsic and extrinsic motivational methods, like involving employees in decision-making, rotation, fringe benefits, bonuses, and promotions. These strategies collectively elevate employee performance. In Ethiopia, Muogbo, (2018) emphasizes a prevalent reliance on extrinsic motivations, such as salaries, incentives, recognition, and promotions, posing a challenge for effective compensation policies. Similarly, Waiyaki, (2019) strengthens the significant correlation between employee motivation and job performance, highlighting how intrinsic factors like recognition and a genuine passion for work contribute to heightened employee performance.

In Tanzania, motivation's role in elevating employee performance is deeply entrenched, with decades of application that continues to be embraced by contemporary organizational

managers. Noel (2019) underscores the significance of both intrinsic and extrinsic motivation in Tanzanian organizations, urging a consistent review of motivational strategies to enhance employee engagement and thereby drive effective performance improvements. Similarly, Mlangala and Thomas (2022) emphasize salaries as the foremost driver inspiring employees to excel and deliver quality services. Allowances emerge as a potent motivational element, fostering a sense of value and dedication. Furthermore, optimal working conditions are acknowledged as vital for ensuring service excellence through comfortable, healthy, and secure environments. Lastly, the imperative of career development is highlighted, enabling employees to enhance their skills and competencies, ultimately empowering them to provide top-notch services aligned with client requirements. Nevertheless, recent evidence highlights the challenges faced by contemporary organizations, including poor employee performance and inadequacy of the provided motivation packages to address employees' social and economic requirements (Mwijarubi, 2021; Noel, 2019; Senkoro, 2021).

The Tanzania Ministry of Home Affairs, as a prominent player in the country's public sector, stands as an exemplar of an entity where employee performance has far-reaching implications. With responsibilities spanning national security, immigration, and civil registration, the ministry's operations are diverse and demand a workforce that is not only skilled but also consistently driven to excel. The connection between motivation and employee performance has been thoroughly examined in organizational studies, as most studies focused on other aspects such as challenges and strategies for enhancing motivation while overlooking the motivational variables such as extrinsic motivation and intrinsic motivation (Kapinga, 2018; Seiph, 2021).

The implementation of employee motivation within Tanzanian public organizations has received noteworthy focus from managers. The efficacy of employee motivation in elevating performance and driving organizational success has been well established, leading contemporary managers to allocate substantial resources toward enhancing employee motivation. This strategic investment is driven by the anticipation of improved performance and a heightened competitive edge for the (Kapinga, 2020; Seiph, 2021).

To boost employee performance in Tanzanian public organizations, the government introduced the Public Service Pay and Incentive Policy of 2010 (URT, 2021). This initiative aims to attract and retain highly qualified personnel in the public sector while simultaneously motivating employees by establishing fair and balanced remuneration structures. The policy highlights the importance of improved pay as a key incentive for maximizing potential and enhancing employee performance. Additionally, the government adopts principles that ensure an equitable geographical distribution of staff, implementing various strategies to enhance staff motivation (URT, 2021).

However, despite the government's endeavors to enhance employee motivation in Tanzania, still numerous challenges persist within the public sectors that hinder the realization of optimal employee performance (Mwijarubi, 2021; Senkoro, 2021). The previous research has highlighted the issues such as; service delivery delays, poor quality of services (QoS), low client retention rates, and unsatisfactory customer satisfaction levels, and thus, leading to inquiries and doubts on the efficacy of the motivation strategies implemented by the government (Mlangala and Thomas, 2022; Seiph, 2021). Moreover, this problem has led to

over increasing problem of employee turnover within the Ministry of Home Affairs where 9 cases of turnover were reported in year 2022 (URT, 2022).

The body of literature have identified that the influence of motivation on employees' performance within the public sector (Kapinga, Seiph, 2021 Mlangala & Samson Thomas, 2022) has limited attention and there has been no direct investigation conducted within the Ministry of Home Affairs. Most of studies investigated on the challenges and impacts, but overlooked the influence of motivational variables especially extrinsic motivation intrinsic motivation within the Ministry of Home Affairs. Consequently, there arises a compelling necessity for an in-depth analysis of the influence of motivation on employee performance in a Public Organization, particularly focusing on the context of the aforementioned ministry. This study aimed at examining the influence of motivation on employee performance in the Ministry of Home Affairs in Tanzania. To our knowledge this gap has not yet been filled within these specific organizational contextual settings.

2.0 Literature Review

2.1 Theoretical Review

Self-Determination Theory (SDT) proposed by Deci and Ryan in 1985 was selected as relevant theoretical framework. SDT focuses on intrinsic and extrinsic motivation and how these factors influence human behavior and performance (Ryan & Deci, 2017). The theory posits that individuals have inherent psychological needs for autonomy, competence, and relatedness, and the fulfillment of these needs' leads to motivation and enhanced performance. Intrinsic motivation is driven by internal factors such as personal enjoyment, fulfillment, or interest in the task itself, while extrinsic motivation is influenced by external factors like rewards, recognition, or coercion (Deci et al., 2017).

The strengths of the Self-Determination Theory lie in its comprehensive approach to understanding motivation. It highlights the significance of intrinsic motivation in fostering sustained interest and engagement in tasks, emphasizing the importance of autonomy and personal growth. Additionally, SDT's applicability across various contexts and its support from empirical research contribute to its credibility (Good et al., 2022). However, one of its weaknesses is that the theory might oversimplify the complexities of motivation by solely categorizing it into intrinsic and extrinsic forms. It may not adequately address certain individual differences or cultural variations that can impact motivation. Moreover, while SDT acknowledges the importance of intrinsic motivation, the theory does not provide precise strategies to enhance it in practical settings (Fischer et al., 2019).

In the context of the study within the Ministry of Home Affairs, the Self-Determination Theory is relevant as it provides a framework to assess both intrinsic and extrinsic motivators affecting employee performance. By examining how autonomy, competence, and relatedness influence motivation within this specific work environment, the theory can shed light on how to enhance employee engagement and job performance. However, it's essential to recognize the limitations of the theory in capturing the full spectrum of motivational factors unique to the Ministry of Home Affairs and consider combining it with other theories or models for a more comprehensive understanding of motivation and performance in this setting.

2.2 Empirical Review

In Fischer et al., (2019) study, the primary aim was to explore how extrinsic motivators can complement intrinsic motivation to enhance creativity and innovation among knowledge workers in Germany. Employing a combination of Amabile and Pratt's model of creativity in organizations along with principles from Ryan and Deci's self-determination theory, the research gathered quantitative data from 90 knowledge workers in an international consulting firm through an online self-assessment tool. Analysis revealed that intrinsic motivation positively correlated with creative and innovative performance, confirming established beliefs. Notably, the study found that relational rewards, one facet of extrinsic motivation, significantly moderated the relationship between intrinsic motivation and creativity/innovation performance. Specifically, higher perceived probabilities of receiving relational rewards alongside elevated intrinsic motivation levels resulted in more pronounced positive effects on creative and innovative outcomes. However, the anticipated impact of transactional rewards as a moderator on the relationship between intrinsic motivation and creative/innovative performance was not supported by the empirical findings. These results provided practical implications for organizations seeking to stimulate creativity and innovation among their knowledge workers.

Good et al., (2022) study conducted a meta-analysis based on the self-determination theory to explore the differing impacts of intrinsic and extrinsic motivation on salesperson performance. The research encompassed data from 127 studies, including 77,560 participants and 293 effect sizes. The findings revealed a significant association between motivation and salesperson performance. Moreover, the analysis indicated that intrinsic motivation exhibited a stronger association with performance compared to extrinsic motivation. Multivariate analyses, considering various sample characteristics, consistently supported the notion that intrinsic motivation had a more robust impact on salesperson performance than extrinsic motivation. The study's discussion highlighted the theoretical implications of these findings, offered practical insights for sales managers, and suggested potential directions for future research in this field.

A study conducted by Makki and Abid, (2017) in Pakistan investigated the impact of both intrinsic and extrinsic motivation on employees' task performance, exploring potential differences between males and females in task performance based on their levels of intrinsic and extrinsic motivation. Utilizing the Work Preference Inventory developed by Amabile et al. (1994) and the Job Performance Scale by Goodman and Svyantek (1999), the research aimed to establish positive correlations between intrinsic and extrinsic motivation and employees' task performance while predicting their influence on task performance. The study's results affirmed the presence of a positive correlation between both intrinsic and extrinsic motivation and employees' task performance, indicating that these motivational factors significantly affect task performance. Moreover, the findings suggested that females tend to exhibit higher levels of intrinsic motivation in comparison to males.

Shaikh et al., (2018) research aimed to evaluate the impact of extrinsic motivation on employee performance, conducting a comparative analysis between the food and textile industries in Sindh, Pakistan. The study focused on investigating the effects of external motivational elements on employees' performance using Herzberg's two-factor theory within these specific industries. A seven-point Likert scale was utilized for the survey, and reliability tests were conducted to assess the internal consistency of the extrinsic factors as independent variables

and employees' performance as the dependent variable. Data analysis involved techniques such as Pearson correlation, Analysis of Variance (ANOVA), t-tests, and multiple regression. The findings indicated that all extrinsic factors had positive and significant effects on employees, underscoring the importance of these factors in enhancing employee performance. This study contributes valuable insights into the significance of extrinsic motivational factors in improving overall employee performance within these industries.

Yusuf, (2021) investigation centered on assessing the impact of intrinsic and extrinsic motivation on employee performance, with a focus on job satisfaction as a potential intervening variable at PT. Alwi Assegaf Palembang. The study aimed to analyze how intrinsic and extrinsic motivations influenced employee performance with data obtained from 51 respondents using a Likert scale questionnaire. The analysis employed Smart-partial least square methodology. The findings revealed a significant and positive influence of intrinsic motivation on employee performance. However, the study did not find a significant influence of extrinsic motivation on employee performance. Interestingly, job satisfaction did not function as an intervening variable between either intrinsic or extrinsic motivations and employee performance. Nevertheless, the research indicated that both intrinsic and extrinsic motivations positively affected employee job satisfaction. Specifically, intrinsic motivation had a notably positive impact on performance, whereas the impact of extrinsic motivation on performance was not statistically significant. Moreover, the study did not find job satisfaction to mediate between intrinsic and extrinsic motivations and performance in this context.

Buabeng and Adomah-Afari, (2023) research aimed to explore the impact of motivation (both intrinsic and extrinsic) on the job performance of clinical health personnel at the Korle-Bu Teaching Hospital in Ghana's Greater Accra Region in June 2016. The study employed a quantitative approach, with 324 clinical health personnel responding to a structured questionnaire. Statistical analysis, conducted using Stata version 13, involved ANOVA tests to compare motivational effects on job performance and simple as well as multiple linear regression models to estimate the influence of independent variables on the outcome. The results highlighted intrinsic motivation factors like achievement, personal satisfaction, and incentive packages, which significantly influenced health workers' performance. Moreover, extrinsic motivation factors such as equipment availability, job security, interpersonal relationships with colleagues, recognition, promotion, salary improvements, and workload, were found to significantly impact job performance. The multiple regression analysis revealed that both intrinsic and extrinsic motivation factors had a significant association with job performance, indicating their importance in influencing the performance of health workers in a clinical setting.

Milka et al., (2018) study delves into investigating the influence of extrinsic motivation on employee performance within medium-class hotels in Kisumu city, Kenya. The specific objectives were to assess how working conditions, incentives, and interpersonal relations impact employee performance. Employing a survey research design, the study targeted employees within these hotels, utilizing simple random and stratified sampling techniques. Research questionnaires served as the primary data collection tool. Analytical methods included both descriptive and inferential statistics, utilizing Pearson product-moment correlation and multiple regression analysis. The study's findings indicated that no single form of extrinsic motivation singularly led to optimal performance; instead, combinations of various

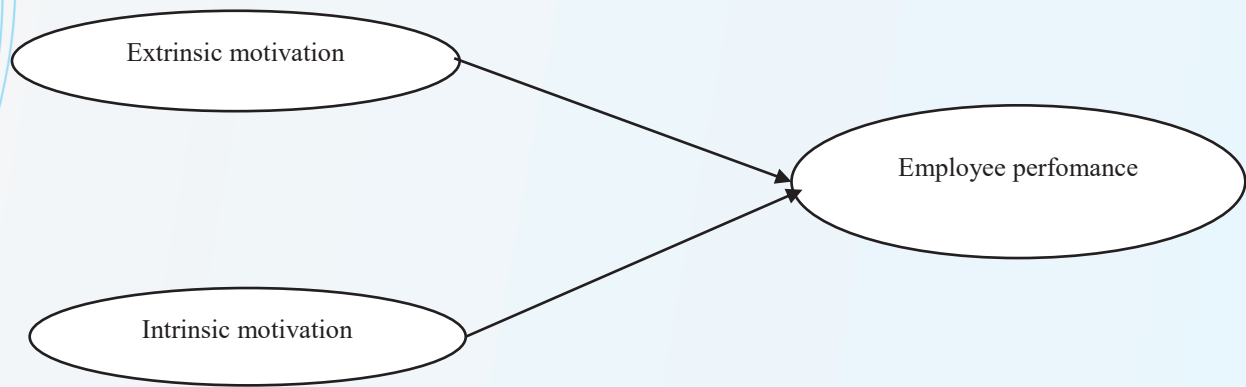
extrinsic motivators were deemed necessary for effective performance. Additionally, the research concluded that enhanced extrinsic motivation significantly improved employee performance, particularly in medium-class hotels, with managers advised to focus on increasing extrinsic motivators to enhance overall employee performance in these setting.

Ikasu, (2018) study investigated the correlation between extrinsic motivators and the performance of employees within the Iringa Municipal Council in Tanzania. The research involved administering a structured questionnaire to 130 team supervisors to assess this relationship. The findings revealed that changes in three specific types of extrinsic motivation such as career development initiatives, improvements in working and employment conditions, and rewards had an impact on the performance of employees and their respective teams. However, among these motivators, career development initiatives and enhancements in working conditions exhibited a more substantial influence on employee and team performance. This significance could be attributed to the fact that career development opportunities and improvements in working conditions were directly accessible to the teams and their supervisors. Conversely, the implementation of rewards faced constraints as it necessitated approval and endorsement from both the central government and the council's top management, potentially limiting its feasibility and immediate impact on employee and team performance.

Mugabo, (2022) study focused on assessing the influence of intrinsic motivation on employee performance in private primary schools in Tanzania, particularly investigating Millennium Kindergarten and Primary School Saint Joseph in Da es Salaam. The research aimed to explore the impact of autonomy, mastery, and purpose; three variables drawn from Pink Intrinsic Theory on employee performance. Using simple random sampling, 74 samples were obtained from a pool of 96 school employees. The study employed descriptive statistics and Pearson correlation analysis to analyze the relationships between variables. The findings indicated significant and positive correlations between autonomy, mastery, purpose, and employee performance. Specifically, autonomy demonstrated a strong and significant positive correlation with performance, as did mastery and purpose. Based on these results, the study recommended that granting employees more freedom of choice could enhance their autonomy, providing additional skills training could boost mastery, and ensuring opportunities for independent work and idea contribution could strengthen purpose and ultimately improve employee performance in such educational settings.

2.3 Conceptual Framework

The study, posits that a combination of intrinsic and extrinsic motivation factors significantly influences various dimensions of employee performance within the Ministry of Home Affairs. Intrinsic motivators such as passion for the work, personal interest, autonomy, mastery of skills, and challenging tasks are anticipated to enhance employees' sense of accomplishment, personal growth, and development. Simultaneously, extrinsic motivators including monetary rewards, recognition, promotions, job security, fringe benefits, and bonuses are expected to contribute to employees' motivation and job satisfaction.



3.0 Methodology

3.1 Sampling, Questionnaire Design and Data Collection

This study was conducted within the Ministry of Home Affairs. The study population included of employees working within the Ministry of Home Affairs, particularly those holding leadership positions like managerial personnel and regular staff members, chosen due to their wealth of information. A sample of 93 was involved in the study as indicated by Yamane formula where n represents the sample size, while N Total population size of 120, e Desired level of precision (margin of error) of 5%.

$$n = N / (1 + N(e^2))$$

$$n = 120 / (1 + 120(0.05^2))$$

$$n = 93$$

Therefore, 93 respondents.

The data collection process primarily involved gathering firsthand data using both questionnaires and interviews. The questionnaires were designed firstly to capture the demographic features of the respondents such as age, gender, level of education. The second part of the questionnaire was capturing the variable information on Intrinsic motivation and Extrinsic motivation. Questions were formulated as statements and rated on a five-point Likert-type scale, ranging from 1 for "strongly disagree" to 5 for "strongly agree".

3.2 Data Analysis

Both qualitative and quantitative data analysis was engaged in this study. Qualitative data analysis was supported from the information of interviews whereas qualitative data analysis was used to analyse data received interviews through thematic approach to analyse the qualitative data collected through interviews through MAXQDA. In this approach, the respondents' gathered responses from interview were recorded, organised, reviewed, categorised, and re-coded in MAXQDA in order to develop and explain themes do be presented in the study findings. Quantitative data were examined using IBM SPSS Statistics version 23. Descriptive Statistics were used to analyse Demographic information showing frequencies and percentages. To examine the influence of Intrinsic motivation and Extrinsic motivation, on the Ministry of Home Affairs descriptive statistics and Multiple Linear Regression analysis

were used to organize the data and analyse these objectives, where the following model was developed;

Model

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + e$$

Where;

Y = Dependent Variable (Employee performance)

β = Beta coefficient

X₁ = Intrinsic Motivation

X₂ = Extrinsic Motivation

β_1 = Regression coefficient for X₁

β_2 = Regression coefficient for X₂

e = error term

The reliability of data was computed through Cronbach's Alpha Value which was measured through perceptions and expectations of all dimensions namely; Intrinsic Motivation, Extrinsic Motivation and Employee Performance. The results showed that all of the dimensions had an Alpha value above the acceptable level of 0.7. Thus, the results in Table 1 confirm that the measurement instruments for the study were reliable.

Table 1: The Cronbach's Alpha Values

Construct	Number of items	Cronbach's Alpha
Intrinsic Motivation	7	0.772
Extrinsic Motivation	7	0.719
Employee Performance	5	0.742

4.0 Findings and Discussion

4.1 Descriptive Results

A descriptive analysis test was run to examine the respondents' gender, age, education, working experience, employee status as shown in Table 2. Out of 93 respondents, 53.8% of the respondents were males and 46.2% were females. Our respondents were mostly between the ages of 18 and 35 (50.5%), followed by those between the ages of 36 and 55 years (29%). According to their educational background, bachelor's degrees made up the majority (45.2%), followed by Diploma (29%). 45.2% of respondents were having five years of working experience and above, followed by with two to five years of working experience 33.3%. and 91.4% were permanent employees followed by temporary employees with 8.6%

Table 2: Descriptive Results

Attributes	Distribution	%
Gender	Male	53.8
	Female	46.2
Age	18-35	50.5
	Between 36-55	29
	55 and above	20.4
Education	Certificate	18.3
	Diploma	29
	Bachelor's Degree	46.2
	Postgraduate	7.5
Working experience	Permanent	91.4
	Temporary	8.6
Employment status	Business/Work	55
	Tourism	8.4
	Family visit	36.7

4.2 The Influence of Extrinsic Motivation on Employee Performance in the Ministry of Home Affairs.

The findings in table 3 on the influence extrinsic motivation within the Ministry of Home Affairs, Engaging in challenging tasks emerged as the highest scoring statement, with a mean score of 4.1720, indicating strong agreement among participants regarding the motivating influence of challenging work assignments. This was closely followed by "My passion for the work significantly drives my motivation," which obtained a mean score of 4.1075. Both statements reflect the significance of intrinsic factors, such as personal interest and passion, in driving employee motivation within the Ministry of Home Affairs.

Furthermore, achieving a sense of accomplishment garnered a mean score of 3.2366, indicating a notable influence on motivation levels. This suggests that employees value the recognition and satisfaction derived from completing tasks successfully. Additionally, gaining mastery of skills received a mean score of 3.8065, emphasizing the importance of skill development as a motivator in the workplace.

Having autonomy and control over work tasks attained a mean score of 3.4731, indicating that employees perceive autonomy as a moderately influential factor in motivating their performance. Similarly, personal growth and development through work tasks received a mean score of 3.8280, highlighting the significance of opportunities for learning and advancement in fostering employee motivation.

These findings collectively demonstrate the positive influence of extrinsic motivational factors on employee performance within the Ministry of Home Affairs. Engaging in challenging tasks, personal passion for work, and opportunities for skill development emerged as key drivers of employee motivation, underscoring the importance of fostering a work environment that supports these aspects to enhance overall performance and productivity. These findings have been discussed in relating to other studies below;

Good et al., (2022) conducted a meta-analysis on the impacts of intrinsic and extrinsic motivation on salesperson performance and found that intrinsic motivation exhibited a stronger association with performance compared to extrinsic motivation. This contrasts with the findings of the present study, which emphasize the significant positive influence of extrinsic motivational factors on employee performance within the Ministry of Home Affairs.

Makki and Abid, (2017) investigated the impact of both intrinsic and extrinsic motivation on employees' task performance and found positive correlations between both types of motivation and task performance. While this aligns with the present study's findings regarding the positive influence of extrinsic motivational factors on employee performance, the emphasis on task performance specifically differs from the broader focus on overall performance in the Ministry of Home Affairs.

Table 3: The Influence of Extrinsic Motivation on Employee Performance in the Ministry of Home Affairs (n = 93)

Statement	Minimum	Maximum	Mean	Std. Deviation
My passion for the work significantly drives my motivation.	2.00	5.00	4.1075	.84006
My personal interest in the tasks strongly influences my motivation levels.	1.00	5.00	3.8925	1.19294
Achieving a sense of accomplishment greatly motivates me.	1.00	5.00	3.2366	1.38625
Having autonomy and control over my work strongly impacts my motivation.	1.00	5.00	3.4731	1.33995

Gaining mastery of skills is a significant motivator for me.	1.00	5.00	3.8065	1.20016
Engaging in challenging tasks greatly motivates me.	1.00	5.00	4.1720	.96260
Personal growth and development through work tasks are essential motivators for me.	1.00	5.00	3.8280	.98493

4.3 The Influence of Intrinsic Motivation on Employee Performance in the Ministry of Home Affairs.

The Descriptive Statistics Results for the Influence of Intrinsic Motivation on Employee Performance in the Ministry of Home Affairs, as depicted in Table 4, unveil intriguing insights into the factors that drive employee engagement and productivity. Among these factors, "The additional perks and benefits provided greatly affect my motivation at work" stands out with the highest mean score of 4.4301. This finding suggests that employees highly value the supplementary rewards and benefits offered by the organization, implying that such incentives play a pivotal role in bolstering intrinsic motivation levels.

Following closely, "The recognition and praise I receive significantly boost my motivation" garners a noteworthy mean score of 4.3333. This outcome underscores the profound impact of acknowledgment and appreciation on employee morale and commitment within the Ministry of Home Affairs. When employees feel recognized and valued for their contributions, they are more likely to feel motivated to excel in their roles, thereby positively influencing overall performance outcomes.

Additionally, "The organization provides promotion and advancement which motivates me to excel in my work" and "Being entrusted with responsibilities and authority strongly motivates me" both attained high mean scores of 4.3118 and 4.2903, respectively. These findings underscore the importance of opportunities for career growth and increased responsibility as significant drivers of intrinsic motivation among employees. When individuals perceive a clear path for advancement and are entrusted with challenging responsibilities, they are more inclined to invest their energy and effort into achieving organizational goals, thereby enhancing employee performance.

While monetary rewards are acknowledged as important, as indicated by the mean score of 4.2796 for "The monetary rewards I receive are sufficient and motivate me to perform better," it's notable that they do not hold the highest influence on intrinsic motivation. This suggests that while monetary compensation is necessary to meet basic needs, it may not be the primary driver of employee engagement and performance within the Ministry of Home Affairs.

Lastly, "Bonuses and incentives I receive greatly motivate me to improve my performance" garnered a mean score of 3.7097. While bonuses and incentives are recognized as motivators,

their impact may be perceived as less significant compared to other intrinsic factors such as recognition, career advancement, and additional benefits.

Overall, these findings highlight the multifaceted nature of intrinsic motivation and its positive influence on employee performance within the Ministry of Home Affairs. By prioritizing factors such as recognition, career advancement opportunities, and supplementary benefits, organizations can cultivate a work environment that fosters intrinsic motivation, thereby enhancing employee engagement, productivity, and overall organizational success.

Table 4: Descriptive analysis on The Influence of Intrinsic Motivation on Employee Performance in the Ministry of Home Affairs (n = 93)

Statement	Minimum	Maximum	Mean	Std. Deviation
The monetary rewards I receive are sufficient and motivate me to perform better.	2.00	5.00	4.2796	.79899
The recognition and praise I receive significantly boost my motivation.	1.00	5.00	4.3333	.95932
The organization provides promotion and advancement which motivates me to excel in my work	2.00	5.00	4.3118	.90864
The organization offers job security which significantly impacts my motivation.	1.00	5.00	3.9462	1.00397
The additional perks and benefits provided greatly affect my motivation at work.	1.00	5.00	4.4301	.92546
Bonuses and incentives, I receive greatly motivate me to improve my performance.	1.00	5.00	3.7097	.85441
Being entrusted with responsibilities and authority strongly motivates me.	2.00	5.00	4.2903	.82857

The findings of this study underscore the multifaceted nature of intrinsic motivation and its positive impact on employee performance within the Ministry of Home Affairs. By prioritizing factors such as recognition, career advancement opportunities, and supplementary benefits, organizations can cultivate a work environment that fosters intrinsic motivation, leading to enhanced employee engagement, productivity, and overall organizational success. These findings have been discussed in relation to other studies as follows;

Kuswati, (2020) conducted research in Budapest to demonstrate the influence of motivational factors on employee performance. While the present study focuses on intrinsic motivation within the Ministry of Home Affairs, Kuswati's findings align conceptually by highlighting the positive effect of motivation on performance, although their study does not specify the type of motivation.

Abdi et al., (2017) evaluated motivation's impact on employee performance within Hormuud Company in Somalia, emphasizing the significance of monetary rewards and job enrichment. While both studies emphasize the positive link between motivation and performance, Abdi et al.'s findings extend to extrinsic motivational factors like monetary rewards, contrasting with the focus on intrinsic motivation in the present study.

Sipayung et al., (2021) explored motivation's influence on employee performance at the Environmental Services Office of Deli Serdang Regency in Indonesia. While they consider motivation, workload, and work environment, with job satisfaction as an intervening variable, their findings still corroborate the importance of motivation in driving performance, albeit in a different organizational context.

Engidaw, (2021) investigated the impact of motivation on employee engagement in public sectors within Ethiopia, emphasizing the role of both intrinsic and extrinsic motivation. Their findings align with the present study's emphasis on the importance of motivation, although their research extends to employee engagement as an outcome measure.

Twalib, (2020) assessed motivation's impact on employee performance within Telkom Kenya Limited, demonstrating a significant relationship between motivation and performance. While Twalib's study focuses on the telecommunications sector and does not specify the type of motivation, its findings resonate with the broader theme of motivation's positive influence on performance.

Machenje, (2019) studied motivation factors affecting employee performance at OUT in Tanzania, highlighting challenges and dissatisfaction with existing motivation strategies. Although their study covers various types of motivation, including financial rewards, it underscores the need to address motivational challenges to improve performance, aligning with the present study's emphasis on cultivating a motivating work environment.

Mnyoty, (2019) investigated motivation's impact on the performance of librarians at the University of Dodoma, emphasizing rewards and training opportunities as motivational factors. While their study focuses on a specific occupational group, its findings resonate with the broader theme of motivation's influence on performance, reinforcing the importance of recognizing and addressing motivational needs.

The empirical studies discussed highlight the importance of motivation in driving employee performance across different organizational contexts. While the specific motivational factors and organizational settings may vary, the consistent finding is that motivation, whether intrinsic or extrinsic, positively impacts performance. Organizations can leverage these insights to develop tailored motivational strategies that address the unique needs and preferences of their

employees, ultimately leading to improved performance and organizational success. By fostering a motivating work environment that recognizes and rewards employees' efforts, organizations can enhance employee engagement, productivity, and job satisfaction, contributing to overall performance and competitiveness in the market.

4.4 Descriptive Statistics Results for Employee Performance in the Ministry of Home Affairs

The Descriptive Statistics Results for Employee Performance in the Ministry of Home Affairs, are provided in Table 5. This table delineates the minimum, maximum, mean, and standard deviation scores for various statements pertaining to employee performance.

Among these statements, "I consistently deliver products or services that exceed industry standards, ensuring high customer satisfaction and positive feedback" emerges with the highest mean score of 4.3978. This indicates a strong perception among employees that they consistently produce work that not only meets but surpasses industry benchmarks, thereby ensuring exceptional customer satisfaction. Such a perception is indicative of a high level of dedication and commitment to delivering quality services within the Ministry of Home Affairs.

Following closely, "I consistently meet or surpass the objectives and goals set for my role within the organization" and "I optimize resources effectively in my tasks, resulting in cost savings without compromising quality" both garnered notable mean scores of 4.3441 and 4.3656, respectively. These findings underscore the employees' confidence in their ability to meet organizational objectives efficiently while maintaining high standards of quality. It reflects a proactive approach to task management and resource utilization, which are essential components of effective performance within the Ministry.

Additionally, "I experience high job satisfaction, which results in my commitment to staying with the organization for an extended period" obtained a mean score of 3.9140. While slightly lower than the aforementioned statements, this score still signifies a positive perception of job satisfaction among employees. Job satisfaction plays a crucial role in fostering employee commitment and retention, which are vital for organizational stability and continuity.

Lastly, "I consistently complete my tasks or projects within or ahead of deadlines without compromising quality" garnered a mean score of 3.7742. While slightly lower than other statements, this score still indicates a strong commitment to meeting deadlines while upholding quality standards, which is essential for efficient organizational operations.

Overall, these findings suggest a positive perception of employee performance within the Ministry of Home Affairs. Employees demonstrate a strong commitment to meeting organizational objectives, optimizing resources, delivering high-quality services, and meeting deadlines. Such perceptions are indicative of a motivated and dedicated workforce, which bodes well for organizational effectiveness and public service delivery within the Ministry.

Table 5: Employee Performance in the Ministry of Home Affairs (n = 93)

Statement	Minimum	Maximum	Mean	Std. Deviation
I consistently meet or surpass the objectives and goals set for my role within the organization.	1.00	5.00	4.3441	.94977
I optimize resources effectively in my tasks, resulting in cost savings without compromising quality.	2.00	5.00	4.3656	.88201
I experience high job satisfaction, which results in my commitment to staying with the organization for an extended period.	1.00	5.00	3.9140	.96297
I consistently deliver products or services that exceed industry standards, ensuring high customer satisfaction and positive feedback.	1.00	5.00	4.3978	.95712
I consistently complete my tasks or projects within or ahead of deadlines without compromising quality.	1.00	5.00	3.7742	.95700

4.5 Binary Logistic Regression Results

a) Model Summary Results

The table reveals that the model exhibits a moderate level of explanatory power, with an R Square value of 0.388. This indicates that approximately 38.8% of the variance in Employee Performance can be explained by the combined influence of intrinsic and extrinsic motivation variables.

Furthermore, the Adjusted R Square value, which accounts for the number of predictors in the model, stands at 0.374. This adjusted value reflects the model's goodness of fit, considering the potential overfitting or underfitting due to the inclusion of predictors.

Table 6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					
					R Square Change	F Change	df1	df2	Sig. Change	F
1										

1	.62 3 ^a	.388	.374	.66462	.388	28.491	2	90	.000
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a. Predictors: (Constant), Intrinsic Motivation, Extrinsic Motivation

b) Coefficient regression results of significant relationship that exists between motivation variables and employee performance in the ministry of home affairs

The Coefficient Regression Results, outlined in Table 7, provide insights into the coefficients associated with the regression model assessing the relationship between motivation variables (both intrinsic and extrinsic) and Employee Performance within the Ministry of Home Affairs. Firstly, the table presents the constant term, with a coefficient of 1.798 and a standard error of 0.394. This constant represents the expected value of Employee Performance when the predictors (Intrinsic Motivation and Extrinsic Motivation) are zero.

Moving on to the predictors, the coefficient for Intrinsic Motivation is reported as 0.413, with a standard error of 0.058. This indicates that for every one-unit increase in Intrinsic Motivation, Employee Performance is expected to increase by 0.413 units, holding all other variables constant. The standardized coefficient (Beta) for Intrinsic Motivation is 0.587, suggesting a relatively strong positive relationship between Intrinsic Motivation and Employee Performance.

Similarly, the coefficient for Extrinsic Motivation is reported as 0.163, with a standard error of 0.076. This implies that for every one-unit increase in Extrinsic Motivation, Employee Performance is expected to increase by 0.163 units, all else being equal. The standardized coefficient (Beta) for Extrinsic Motivation is 0.176, indicating a weaker positive relationship between Extrinsic Motivation and Employee Performance compared to Intrinsic Motivation. The t-values associated with both Intrinsic Motivation (7.098) and Extrinsic Motivation (2.129) are statistically significant at $p < 0.05$, suggesting that both predictors have a significant impact on Employee Performance.

Finally, the confidence intervals for the coefficients provide a range of values within which the true population coefficient is likely to fall with 95% confidence. For Intrinsic Motivation, the confidence interval ranges from 0.297 to 0.529, while for Extrinsic Motivation, it spans from 0.011 to 0.314.

In summary, the Coefficient Regression Results demonstrate that both Intrinsic Motivation and Extrinsic Motivation significantly contribute to explaining Employee Performance within the Ministry of Home Affairs. Specifically, higher levels of Intrinsic Motivation have a stronger positive impact on Employee Performance compared to Extrinsic Motivation, as indicated by their respective coefficients and standardized coefficients.

Table 7: Coefficient Regression Results

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B
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		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.798	.394		4.562	.000	1.015	2.582
	Intrinsic Motivation	.413	.058	.587	7.098	.000	.297	.529
	Extrinsic Motivation	.163	.076	.176	2.129	.036	.011	.314

a. Dependent Variable: Employee Performance

c) ANOVA Results

The ANOVA Results, as presented in Table 8, offer insights into the statistical significance of the regression model assessing the relationship between motivation variables (both intrinsic and extrinsic) and Employee Performance within the Ministry of Home Affairs.

Under Regression, the Sum of Squares is reported as 25.170, with 2 degrees of freedom (df) and a Mean Square of 12.585. This signifies the amount of variability in Employee Performance that is accounted for by the regression model containing the predictors (Intrinsic Motivation and Extrinsic Motivation). The F-value, calculated as 28.491, indicates the ratio of the variability explained by the model to the unexplained variability. The associated significance level (Sig.), reported as .000, suggests that the regression model is statistically significant at $p < 0.05$, indicating that at least one of the predictors significantly contributes to explaining Employee Performance.

Under Residual, the Sum of Squares is 39.755, with 90 degrees of freedom, and a Mean Square of 0.442. This component represents the unexplained variability in Employee Performance that is not accounted for by the regression model. The Total Sum of Squares, representing the total variability in Employee Performance, is reported as 64.925, with 92 degrees of freedom.

In summary, the ANOVA Results indicate that the regression model, including both Intrinsic Motivation and Extrinsic Motivation as predictors, significantly explains the variability in Employee Performance within the Ministry of Home Affairs. The significant F-value and associated p-value suggest that the model as a whole is statistically significant in predicting Employee Performance.

Table 8: ANOVA Results

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	25.170	2	12.585	28.491	.000
	Residual	39.755	90	.442		

Total	64.925	92
a. Dependent Variable: Employee Performance		
b. Predictors: (Constant), Intrinsic Motivation, Extrinsic Motivation		

5.0 Conclusion and recommendation

5.1 Conclusion

In conclusion, the findings of this study underscore the significant role of both intrinsic and extrinsic motivation in influencing employee performance within the Ministry of Home Affairs. The analysis revealed that factors such as engaging in challenging tasks, personal passion for work, recognition, career advancement opportunities, and supplementary benefits all contribute to fostering a work environment conducive to higher employee performance. These results align with existing literature on motivational theory, emphasizing the importance of addressing both intrinsic and extrinsic motivators to enhance employee engagement and productivity.

Furthermore, the regression analysis provided quantitative evidence supporting the qualitative findings, demonstrating the statistically significant impact of intrinsic motivational factors on employee performance. The strong overall fit of the regression model indicates that a substantial portion of the variance in employee performance can be attributed to intrinsic motivational factors, highlighting their crucial role in shaping organizational outcomes.

Practically, these findings have important implications for organizational management within the Ministry of Home Affairs and similar government institutions. By understanding the drivers of employee motivation and performance, managers can implement targeted strategies to cultivate a supportive work environment that encourages high performance. This may involve initiatives such as providing opportunities for skill development, offering meaningful recognition, and designing career advancement pathways to foster intrinsic motivation among employees.

In conclusion, fostering a culture of motivation and empowerment within the Ministry of Home Affairs is essential for optimizing employee performance and achieving organizational objectives. By investing in both intrinsic and extrinsic motivators, organizations can create a work environment where employees feel valued, engaged, and motivated to perform at their best, ultimately contributing to overall organizational success.

5.2 Recommendation

To the Leadership and Management of the Ministry of Home Affairs: It is recommended that the leadership and management of the Ministry of Home Affairs prioritize the implementation of policies and initiatives aimed at enhancing both intrinsic and extrinsic motivation among employees. This could involve developing comprehensive reward systems that recognize and celebrate employee achievements, providing opportunities for professional development and career advancement, and fostering a supportive work environment that values employee well-

being and satisfaction. Additionally, leadership should lead by example by demonstrating a commitment to transparency, communication, and employee empowerment, thereby creating a culture of trust and collaboration within the organization.

To Human Resources Departments: Human resources departments play a pivotal role in driving employee motivation and performance within organizations. It is recommended that HR departments at the Ministry of Home Affairs focus on conducting regular assessments of employee needs and preferences to tailor motivational strategies accordingly. This may involve implementing employee feedback mechanisms, conducting surveys to gauge satisfaction levels, and analyzing turnover rates to identify areas for improvement. Moreover, HR departments should prioritize the development of training programs that equip managers and supervisors with the skills necessary to effectively motivate and engage their teams.

To Employees: Employees also have a role to play in fostering a culture of motivation and high performance within the Ministry of Home Affairs. It is recommended that employees actively seek out opportunities for growth and development, take ownership of their work, and strive to maintain a positive attitude even in challenging circumstances. Moreover, employees should communicate openly with their managers about their career aspirations, preferences, and concerns, thereby facilitating constructive dialogue and collaboration aimed at enhancing motivation and job satisfaction.

To Stakeholders and Partners: Stakeholders and partners of the Ministry of Home Affairs, including government agencies, civil society organizations, and community groups, can also contribute to fostering employee motivation and performance. It is recommended that these stakeholders actively support initiatives aimed at promoting employee well-being, such as providing access to resources and services that enhance work-life balance, promoting diversity and inclusion in the workplace, and advocating for policies that prioritize employee rights and welfare. Additionally, stakeholders can collaborate with the Ministry of Home Affairs to develop mentorship programs, networking opportunities, and other initiatives that facilitate professional growth and development among employees.

To Policy Makers: Policy makers play a crucial role in shaping the regulatory environment and frameworks that govern organizations like the Ministry of Home Affairs. It is recommended that policy makers prioritize the development of legislation and policies that incentivize organizations to invest in employee motivation and well-being. This may involve offering tax incentives or grants to organizations that implement effective employee motivation programs, establishing guidelines for fair and transparent performance evaluation systems, and promoting the adoption of flexible work arrangements that accommodate diverse employee needs. Furthermore, policy makers should collaborate with relevant stakeholders to conduct regular reviews of existing policies and regulations to ensure their alignment with evolving best practices in employee motivation and organizational performance.

5.3 Areas for Future Research

The following are areas for further exploration to deepen our understanding of the complex interplay between motivation and employee performance within the Ministry of Home Affairs. Firstly, future research endeavors could delve into uncovering the mediating mechanisms that underlie the relationship between intrinsic and extrinsic motivation and employee performance. Understanding the mediating factors, such as job satisfaction, organizational commitment, or job engagement, can shed light on the intricate pathways through which motivation influences performance outcomes. By elucidating these mechanisms, researchers can provide actionable insights for organizational leaders to design targeted interventions that foster a motivational climate conducive to enhanced performance.

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The Influence of Education and Training on the Preservation and Management of COVID-19 Vaccines among Health Workers

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Abstract

The COVID-19 pandemic has profoundly affected health systems globally, particularly in vaccine management. This study investigates the impact of human capital on vaccine preservation in Tanzania, focusing on the resources and capabilities necessary for effective vaccine handling. Guided by the Resource-Based Theory (RBT), which emphasizes the significance of internal resources in achieving competitive advantages, this research highlights the critical role of health workers' training and access to essential resources, such as refrigeration and transportation. The target population for this study consisted of 500 health workers at Mwananyamala Referral Hospital. A sample size of 99 respondents was determined using the Yamane formula to ensure statistical reliability. The sample included 93 operational staff selected through simple random sampling and 6 senior staff chosen purposively for in-depth insights. Utilizing qualitative methodologies, the study incorporates interviews and surveys to explore health workers' experiences and challenges in vaccine management during the pandemic. The findings reveal significant gaps in resource availability and training, which hinder effective vaccine preservation and distribution. By addressing these gaps, the study aims to provide actionable recommendations for improving vaccine management in low-resource settings, ultimately contributing to better health outcomes in Tanzania.

Keywords: COVID-19, Health workers, Vaccine management

1. Introduction

The outbreak of the COVID-19 pandemic, caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), began in late 2019 and quickly escalated into a global crisis by early 2020. As of 2021, the pandemic had claimed over five million lives worldwide (World Health Organization, 2021). This rapidly evolving public health emergency has seen multiple waves of infections, driven by variants such as the highly contagious Delta variant (CDC, 2021b). Countries with well-established healthcare systems, such as the United States, the United Kingdom, and Germany, have been able to manage vaccine storage and distribution through advanced cold chain systems, ensuring that vaccines are stored and transported at recommended temperatures (Ritchie et al., 2021). These nations benefit from well-trained healthcare professionals familiar with vaccine handling protocols (Pgue et al., 2020).

However, in African countries, including Tanzania, maintaining vaccine cold chains has been a significant challenge. While vaccination is one of the most critical public health interventions, the preservation of COVID-19 vaccines presents unique difficulties in developing countries. Many nations face limited resources and infrastructure, making it difficult to maintain the low temperatures required for storing COVID-19 vaccines (Abebe et al., 2021). In countries such as Ghana, Nigeria, and Ethiopia, logistical obstacles such as poor

transport infrastructure and inadequately trained healthcare workers compound the challenge of preserving and managing vaccines (Belsti et al., 2021; Toure et al., 2022).

Tanzania's health system has also struggled with maintaining the cold chain required for COVID-19 vaccines, particularly in areas with unreliable electricity and challenging transportation conditions. The country faces difficulties in providing health workers with adequate training on vaccine handling, particularly with the more delicate mRNA vaccines like Pfizer and Moderna, which require ultra-cold storage (Nestory, 2022; Nyamuryekunge et al., 2023). This study seeks to explore these challenges in greater detail, focusing on the factors influencing the proper preservation and management of COVID-19 vaccines among health workers in Mwananyamala referral hospital, Dar es Salaam.

Tanzania achieved a notable 91% performance in temperature monitoring across health facilities according to the 2015 Tanzanian Effective Vaccine Management Assessment. However, some facilities did not meet the WHO-recommended performance standard of 80% or higher in all criteria. The Tanzania National Immunization Strategy (2021–2025) identified several deficiencies, including a lack of devices, incomplete temperature charts, and inadequate responses to temperature alarms, indicating that temperature monitoring was not consistently effective (Nestory, 2022). Additionally, factors such as the limited education of healthcare workers regarding COVID-19 vaccine preservation and logistical challenges, including transportation, have further hindered effective vaccine management (Nestory, 2022). Therefore, this study aims to investigate the factors affecting the proper preservation and management of COVID-19 vaccines among health workers, specifically at Mwananyamala referral hospital in Dar es Salaam, to determine whether these are key issues in ensuring effective vaccine management.

2. Literature Review

2.1 Theoretical Review

Resource-based theory (RBT)

The resource-based theory (RBT) was primarily developed in the 1980s and 1990s, with Jay Barney's 1991 paper being a seminal work in establishing this theory. The foundation of RBT, however, traces back to Wernerfelt's 1984 article, "A Resource-Based View of the Firm." According to the theory, a firm's internal resources and capabilities can be key sources of competitive advantage if they meet specific criteria: they must be valuable, rare, difficult to imitate, and non-substitutable (Barney, 1991; Peteraf, 2013). The focus of RBT is on building unique, firm-specific resources rather than relying solely on external factors. Examples of resources that provide sustained competitive advantages include proprietary technologies, human capital, and efficient processes.

In summary, RBT emphasizes that a firm's success lies in its ability to develop and leverage its internal resources and capabilities, creating value for customers and ensuring long-term success. One of the key factors influencing the preservation and management of COVID-19 vaccines is the availability of resources. Health workers need access to essential resources such as refrigeration equipment, storage facilities, and reliable transportation to ensure the safe handling and distribution of vaccines. According to RBT, the challenge of accessing these resources, particularly in low-resource settings like Tanzania, can hinder effective vaccine management. Another crucial factor is human capital. The skills, knowledge, and expertise of health workers are essential for effective vaccine preservation and management. RBT suggests

that developing human capital through adequate training and support is necessary to ensure that health workers possess the capabilities to manage vaccines safely and effectively.

2.2 Empirical Literature Review

Cleroux (2020) examined the critical role of Personal Protective Equipment (PPE) in safeguarding healthcare workers during the COVID-19 pandemic. The study highlighted the disruption of global PPE supply chains and the urgent need to re-evaluate the reuse of PPE. Moreover, it stressed the importance of strengthening PPE supply chains, training healthcare staff on PPE usage, and devising systems for tracking the surge in PPE demand in countries like South Africa, where the COVID-19 epidemic was still unfolding. This research underlines the necessity of protecting healthcare workers as they administer vaccines, thus drawing a link between PPE and overall preparedness, including vaccine preservation. However, the study does not directly address the intersection of PPE and vaccine preservation, creating a gap that further research could explore.

Ambe (2021) explored nurses' perceptions regarding COVID-19 vaccine uptake and preservation. The study revealed that more than half of the nurses (55.3%) were unvaccinated and were unaware of proper vaccine preservation techniques. Negative perceptions, such as fears about the vaccine's safety, were prominent, with 60.9% of nurses expressing concerns about fatal side effects. Despite this, some nurse leaders (61.5%) had been vaccinated and expressed the need for continued vaccination with more research to eliminate side effects. The study highlights the significant influence of beliefs, social factors, and knowledge gaps on vaccine acceptance, but it does not delve into specific strategies for improving vaccine preservation practices, suggesting a gap for further investigation.

Kazungu (2021) conducted a cost-effectiveness analysis of PPE and vaccine preservation in Kenya's healthcare sector during the COVID-19 pandemic. Using a decision-analytic model, the study estimated that Kenya would need an investment of \$3.12 million to protect healthcare workers and maintain proper vaccine preservation, potentially averting thousands of deaths and infections. This investment would yield a substantial return of 11.04 times the initial cost. While the study focused on the financial aspects, it did not address training or education programs aimed at healthcare workers, presenting a gap in understanding how such programs could enhance cost-effectiveness in vaccine management.

Ayenigbara (2022) analyzed the challenges of the COVID-19 vaccination program in Africa, noting issues such as poor vaccine preservation among healthcare workers, limited awareness, and logistical challenges. Factors like limited funds, concerns about vaccine safety, and storage requirements hindered the success of the vaccination rollout. The study recommended holistic planning, community engagement, and robust partnerships to optimize vaccine distribution. Although the research identifies key challenges, it falls short in examining the role of training and education in addressing these challenges, leaving room for future research to explore this aspect.

3. Methodology

This study employed a descriptive research design, allowing for a comprehensive analysis of the factors influencing the preservation and management of COVID-19 vaccines among health workers. By using a mixed-method approach combining both quantitative and

qualitative methods the study captured a broad perspective on vaccine management practices at Mwananyamala Referral Hospital.

The sample consisted of 99 respondents from 500 staff working at Mwananyamala Referral Hospital, calculated using the Yamane formula to ensure statistical precision. Simple random sampling was employed to select operational staff, while purposive sampling targeted senior staff, allowing for deeper insights into management practices. Specifically, 93 operational staff were selected randomly, while 6 senior staff were chosen purposively.

Data collection involved the use of questionnaires for quantitative data, which facilitated the measurement of variables such as cold chain management, education and training, and transport logistics. Additionally, interviews were conducted for qualitative data to capture the nuanced perspectives of senior staff. This balanced methodology provided both measurable data and contextual insights. The analysis of quantitative data was conducted using descriptive and regression analysis, allowing for a detailed understanding of relationships between variables. For qualitative data, content analysis was employed, offering an interpretive understanding of staff experiences and vaccine preservation challenges.

To ensure the validity of the research instruments, expert reviews were conducted, and reliability was tested using Cronbach's Alpha, with all variables achieving a score above the acceptable threshold of 0.7, indicating consistency and accuracy in measuring constructs. Ethical considerations, such as obtaining informed consent, maintaining anonymity, and ensuring voluntary participation, were rigorously followed, further strengthening the reliability and integrity of the study. These comprehensive measures ensured a robust evaluation of the factors influencing COVID-19 vaccine preservation and management at Mwananyamala Referral Hospital.

4. Findings

4.1 The influence of education and training on the preservation and management of COVID-19 vaccines among health workers

This study examines the influence of education and training on the preservation and management of COVID-19 vaccines among health workers. Therefore, about 99 respondents were responsible to answer specific objective two and the findings are presented in Table 1 below.

Table 1: The influence of education and training

Statements	N	Mea n	Std. Deviation
Training covered proper storage conditions	99	4.36	0.812
Received adequate training on the importance of temperature monitoring	99	3.97	1.028
Educational materials were clear and informative	99	3.96	1.058
Training emphasized the significance of accurate record-keeping	99	4.36	0.812

Statements	N	Mean	Std. Deviation
Valid N (listwise)	9		
	9		

Source: Field Data, 2024

This study assesses the impact of education and training on the preservation and management of COVID-19 vaccines among health workers, based on responses from 99 participants. The findings indicate that training significantly enhances health workers' understanding of critical aspects of vaccine management, particularly in proper storage and record-keeping, both of which received high agreement scores (Mean = 4.36). However, there is a moderate perception regarding the importance of temperature monitoring and the clarity of educational materials, reflected in lower mean scores and higher variability in responses (Means = 3.97 and 3.96). These insights suggest that while training is effective, there are areas for improvement that could enhance overall vaccine management practices. Continuous evaluation and enhancement of training materials and methods are recommended to ensure all health workers are adequately prepared to manage vaccines effectively.

5. Discussions

The findings of this study reveal significant insights into the influence of education and training on the preservation and management of COVID-19 vaccines among health workers. The high mean scores, particularly for statements regarding proper storage conditions and the significance of accurate record-keeping, indicate that training programs have been effective in imparting crucial knowledge and skills necessary for effective vaccine management. This aligns with previous research highlighting the importance of targeted training in improving health care practices and outcomes (Gonzalez et al., 2021; WHO, 2020).

However, the moderate scores regarding the importance of temperature monitoring and the clarity of educational materials suggest areas for improvement. These results reflect findings from other studies that emphasize the need for ongoing training and the development of clear, user-friendly educational materials to enhance understanding among health workers (Juma et al., 2021; Boulware et al., 2021). The variability in responses, as indicated by the standard deviations, also underscores the potential differences in experiences and perceptions among health workers, suggesting that tailored training approaches may be necessary to address diverse needs.

Moreover, the effective management of COVID-19 vaccines is critical not only for individual health but also for public health efforts to control the pandemic (Kemp et al., 2021). Therefore, it is essential for healthcare institutions to regularly assess and update training programs, ensuring that they incorporate feedback from health workers and adapt to evolving guidelines and practices. This proactive approach will contribute to improved vaccine preservation and management, ultimately enhancing the effectiveness of vaccination campaigns.

In conclusion, while education and training have positively influenced the preservation and management of COVID-19 vaccines, ongoing efforts to refine and enhance these programs are

vital for sustaining their effectiveness. Regular evaluations and adaptations based on health workers' feedback will be crucial in addressing any gaps in knowledge and ensuring the successful implementation of vaccination strategies.

6. Conclusion

In conclusion, this study underscores the vital importance of education and training in enhancing the preservation and management of COVID-19 vaccines among health workers. The findings indicate that comprehensive training programs significantly contribute to health workers' understanding of essential practices, such as proper storage conditions and accurate record-keeping. However, areas needing improvement, particularly in the clarity of educational materials and temperature monitoring training, were identified. To optimize vaccine management and improve public health outcomes, healthcare organizations must continuously evaluate and refine their training initiatives, incorporating feedback from health workers and addressing diverse training needs. This commitment to ongoing education will enhance the competency of health workers and prepare them to effectively address future public health challenges, as emphasized in various studies.

7. Recommendations

Based on the findings of this study it is recommended;

Healthcare Administrators should prioritize the development of ongoing training programs focused on key aspects of vaccine management. This includes proper storage conditions, effective temperature monitoring, and the importance of accurate record-keeping. Regular workshops and refresher courses can be instrumental in reinforcing these practices, ensuring that health workers remain up-to-date with best practices and any new guidelines in the field. By fostering an environment of continuous learning, healthcare administrators can enhance the competence of their staff, ultimately improving vaccine management outcomes.

Government Agencies are encouraged to allocate adequate resources towards training programs aimed at healthcare professionals. Ensuring that all healthcare facilities have access to quality educational materials and training sessions is essential. Additionally, establishing monitoring systems to evaluate the effectiveness of these training initiatives will provide valuable insights into areas for improvement. By investing in the education and skill development of health workers, government agencies can significantly enhance the overall effectiveness of vaccine preservation and management.

Educational Institutions should collaborate with healthcare facilities to enhance the quality of training programs available to health workers. By developing tailored curricula that focus on vaccine management and preservation, educational institutions can equip future health professionals with the necessary skills and knowledge to handle vaccines effectively. This collaboration can create a stronger link between theoretical knowledge and practical application, ensuring that health workers are prepared to meet the challenges of vaccine management in real-world settings.

Health Workers are encouraged to actively participate in feedback sessions to share their training experiences and identify areas for improvement. Engaging in continuous learning and remaining proactive in their professional development can significantly impact their ability to manage vaccines effectively. By taking ownership of their education and skill development,

health workers can contribute to improved vaccine management and ultimately enhance public health outcomes.

Non-Governmental Organizations (NGOs) have a vital role to play in advocating for improved training programs and resources for health workers. By collaborating with healthcare providers, NGOs can identify gaps in knowledge and provide targeted support to ensure that health workers are well-equipped to manage COVID-19 vaccines effectively. This partnership can facilitate the sharing of best practices and resources, contributing to a more robust healthcare response to vaccination challenges.

By implementing these recommendations, stakeholders can work together to enhance the management of COVID-19 vaccines, ultimately improving public health responses to current and future health crises.

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The Influence of Supplier Capability on Public Procurement Performance at the Ministry of Education, Science and Technology

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Abstract

This study aimed to explore the key factors influencing effective supplier selection in the context of public procurement performance. The research focused on three specific objectives: assessing the impact of supplier capability on public procurement performance, examining the role of staff competence in public procurement performance at the Ministry of Education, Science, and Technology (MoEST), and evaluating the effect of regulatory compliance on public procurement performance at MoEST. A case study design was employed, and a simple random sampling technique was used to select a sample of 133 respondents. Data were gathered through questionnaires and interviews and analyzed using descriptive statistics, multiple linear regression, and content analysis. The findings revealed that financial capacity is a critical criterion for selecting suppliers at MoEST, while the involvement of knowledgeable and skilled staff significantly enhances public procurement performance. Additionally, adherence to procurement regulations was identified as a crucial factor in improving public procurement performance at MoEST. The study concludes that supplier capability ($\beta = 0.189$, $p = 0.000$) significantly determines public procurement performance, particularly in terms of financial stability and quality. Furthermore, staff competence ($\beta = 0.438$, $p = 0.000$) and regulatory compliance ($\beta = 0.455$, $p = 0.000$) are both strong predictors of public procurement performance. The study recommends that the Ministry of Education develop supplier selection criteria that are specifically tailored to meet the unique needs of educational goods and services.

Keywords: Supplier Capability, Procurements Performance.

1.0 Introduction

Public procurement is a crucial mechanism for governments to deliver goods and services effectively, influencing overall economic performance and development. Globally, the importance of supplier capability in public procurement has been emphasized by numerous studies, indicating that the quality and reliability of suppliers significantly affect procurement outcomes. According to Thai (2021), enhanced supplier capabilities lead to improved service delivery and cost efficiency, thus reinforcing the need for governments to prioritize supplier evaluation and selection processes. In a global context, the integration of advanced technologies and supplier development programs has been shown to optimize procurement performance, ensuring transparency and accountability in public sector operations (Schapper et al., 2022).

In Africa, the challenges surrounding public procurement are often exacerbated by limited supplier capabilities, leading to inefficiencies and corruption. A study by Muriithi and Langat

(2022) highlights that many African countries struggle with inadequate supplier management frameworks, resulting in poor procurement performance. The authors argue that enhancing supplier capabilities through targeted training and capacity-building initiatives is essential for improving procurement processes. Furthermore, the African Development Bank (2020) emphasizes that strengthening supplier networks can enhance competition and innovation, ultimately contributing to more effective public procurement systems across the continent.

In Tanzania, public procurement performance is significantly influenced by supplier capability, as evidenced by recent research. According to Mwenda and Mbilinyi (2023), many public institutions in Tanzania face challenges related to the quality of suppliers, which directly impacts project outcomes and budget adherence. The study reveals that inadequate supplier assessment and oversight mechanisms often lead to suboptimal procurement performance, highlighting the need for reforms in supplier management practices. Additionally, the Public Procurement Regulatory Authority (PPRA, 2022) in Tanzania has initiated various programs aimed at enhancing supplier capabilities, recognizing their critical role in achieving value for money in public procurement. These efforts are vital for improving the efficiency and effectiveness of procurement practices within the Ministry of Education, Science and Technology.

1.2 Statement of the Problem

In Tanzania, the effectiveness of public procurement is undermined by significant challenges related to supplier capability, which has been highlighted as a critical factor influencing procurement performance. Recent studies indicate that many public institutions struggle with identifying and managing qualified suppliers, leading to inefficiencies, delays, and budget overruns in projects (Mwenda & Mbilinyi, 2023). These issues are particularly pronounced within the Ministry of Education, Science and Technology, where the procurement of educational materials and services is vital for improving educational outcomes. The lack of robust supplier assessment mechanisms has resulted in a reliance on inadequate suppliers, which adversely affects the quality of goods and services procured and hampers the overall effectiveness of public spending in the education sector.

Moreover, the Public Procurement Regulatory Authority (PPRA, 2022) has recognized that existing frameworks for supplier management are insufficient to ensure transparency and accountability in procurement processes. Despite efforts to enhance supplier capabilities through training and development programs, challenges such as inadequate monitoring and evaluation of supplier performance persist. This situation raises concerns about the ability of the Ministry of Education, Science and Technology to achieve value for money and meet its procurement objectives effectively. Therefore, a comprehensive examination of the influence of supplier capability on public procurement performance is essential to identify gaps in the current system and recommend strategies for improvement.

2.0 Literature Review

2.1 Theoretical Literature

2.1.1 Rational Choice Theory

The rational choice theory is based on the premise that individuals often select the course of action they perceive to yield the most favorable overall outcome when faced with a challenging situation or deciding between various options (Elster, 1989). The behavioral revolution in American political science, occurring in the 1950s and 1960s, involved an objective investigation of human behavior. This revolution is regarded to have had a significant role in the creation of rational choice theory (Ogu, 2013).

The rational choice perspective pertains to human behavior (Bouffard and Wolf, 2007), and it is considered that an individual's behavior is connected to psychological actions. Psychologists often understand it as directing individuals to maximize their total preferences (Satz & Ferejohn, 1994). The rational theory focuses on the preferences that humans select from the available choices when making decisions. The behavior of the agents is determined by the environmental limitations imposed on them, rather than their personalities (Satz and Ferejohn, 1994). The study conducted by Essienet *et al.* (2019) demonstrates the significance and widespread acceptance of modeling organizational purchase choices.

Individuals engaged in organizational functions are making decisions regarding the daily operations inside their particular organizations. Choosing a supplier is a critical and high-stakes decision for buying organizations in the procurement process. Supplier selection decisions are typically guided by rationality, as demonstrated by studies conducted by Igarashiet *et al.* (2017) and Kaufmannet *et al.* (2012). Given that rational action is focused on outcomes (Elster, 1989), our study indicates that the perceived benefits that buyers will receive from selected suppliers depend on the wise decisions made by procurement professionals in selecting the best suppliers and implementing effective monitoring. Public buyers have limitations imposed by the legal and regulatory framework that governs procurement procedures when they make decisions about selecting and monitoring potential suppliers.

The rational choice theory aims to provide a theoretical framework for comprehending the reasons and methods behind procurement practitioners' selection of suppliers during the acquisition of goods, services, and works. Therefore, the efficiency of procurement processes can be enhanced by making informed decisions regarding the selection of suppliers that are more appropriate.

2.3 Empirical Literature

Sajjad (2021) claimed that successful performance of any organization depend much on how good suppliers are, since selection of suitable supplier led to reduce material costs, improve quality, competitive advantages, increase speed and flexibility on purchasing process. Critical success factors identified were reliability, consistence, relationship and flexibility of suppliers to meet changes as well as supplier past performance, training aids, and desire for business, warranties and claim policies were factors that become faded. The current study will measure supplier capability by adding financial capacity and quality of products.

Yaakob *et al.* (2021) conducted study on criteria for supplier selection in industrialized building system construction project and findings revealed 16 different criteria for selecting suppliers. Total cost and term of payment were important criteria when assessing cost performance of

supplier. Total cost of particular product to be supplied such as logistic cost and product cost and terms of payment has been significant in construction project due to the requirement of early payments. Furthermore, quality of product or service provided by the supplier was critical determinant in selection process. The study based on assessing criteria for supplier selection in construction sector where the current study will base on LGAs.

Zhang et al, (2020) also on their study argued that cost is very important factor for selection of right suppliers, explained cost associated with purchase such as purchase price, transportation cost and taxes. The operational costs related to purchase which includes transaction processing cost and rejection cost require more time to be assessed in evaluation process. The study based much on costs but the current study also assessed other factors such as flexibility and quality of product.

Kiers *et al*, (2022) on their study the results identified that price, quality and delivery terms were important factors but also human capital, strategic commitment, communication skills and information technology were vital factors for selecting suppliers. Also, the study revealed that reputation of suppliers was significant factor where organization should assess on how customers responding to particular supplier and supplier with good customer base should preferred over the others with unsatisfactory customers.

Khalili *et al*, (2017) stated that there is need for thorough analysis and detailed evaluation in supplier selection process. One of the factors to consider was financial capacity of supplier corresponding to the scope and content of assignment, delivery terms, as well as quality required. Furthermore, argued that suppliers need to increase investment on developing capabilities and competence on human resources capital, information technology, and communication skills and improve strategic commitment. The study focus of this thesis is on the supplier evaluation and selection process for public procurement in Swedish electricity industry while the current study focused on LGAs.

3.0 Methodology

In conducting this study at the Ministry of Education, Science, and Technology (MoEST) in Dodoma, Tanzania, a mixed research approach was employed to gather comprehensive insights into procurement irregularities, specifically focusing on supplier selection processes. This approach integrated both quantitative and qualitative methods to ensure robust data collection and analysis. Quantitative data was obtained through structured questionnaires distributed among 133 staff members, selected via simple random sampling from various departments involved in procurement, finance, and ICT. These questionnaires utilized a Likert scale to systematically gauge respondents' perceptions and experiences related to supplier selection practices. Concurrently, qualitative data was gathered through interviews with key personnel, providing deeper contextual understanding and enriching the quantitative findings through data triangulation. The case study design was instrumental in this research, facilitating an in-depth examination of specific instances within MoEST to uncover underlying factors influencing procurement performance. This approach allowed for a nuanced analysis of procurement practices and their impact within the ministry, leveraging both primary data collected from surveys and interviews and secondary data sourced from existing literature and official documents. Data analysis encompassed descriptive statistics to summarize survey responses and inferential techniques such as multiple linear regression to explore relationships between

variables. Additionally, content analysis was employed to interpret qualitative insights, ensuring a comprehensive evaluation of supplier selection processes and offering actionable recommendations to address identified irregularities. This methodological framework ensured the study's findings were rigorous, relevant, and applicable to enhancing procurement practices at MoEST in Dodoma, Tanzania.

4.0 Findings and Discussion

Table 1: Demographic Features of Respondents

Demographic Feature	Frequency	Percent
Gender		
Male	90	42.5
Female	122	57.5
Total	212	100.0
Age Group		
18-25	40	18.9
26-35	85	40.1
36-45	60	28.3
46 and above	27	12.7
Total	212	100.0
Education Level		
Secondary	30	14.2
Bachelor's	95	44.8
Master's	50	23.6
PhD	37	17.4
Total	212	100.0

Source: Field Data, 2024

The demographic features of the respondents provide a comprehensive overview of the sample population, highlighting key characteristics such as gender, age, and education level. With a total of 212 respondents, the gender distribution reveals a notable majority of females (57.5%)

compared to males (42.5%). This skew toward female respondents may suggest a higher engagement of women in the educational sector or specific roles within the Ministry of Education and Sports (MOEST). Research by Kabeer (2016) indicates that female representation in education-related fields often leads to enhanced communication and collaboration, which can positively influence procurement processes. The age distribution shows a diverse range of respondents, with the largest group (40.1%) falling within the 26-35 age bracket, indicating that a significant portion of the respondents are likely to be early to mid-career professionals. This diversity in age could provide valuable insights into varying perspectives based on experience levels, as studies such as those by Chen et al. (2018) have shown that age diversity can enhance problem-solving and decision-making within organizations.

In terms of educational attainment, the majority of respondents hold bachelor's degrees (44.8%), followed by those with master's degrees (23.6%) and PhDs (17.4%). This high level of education among respondents is essential for ensuring informed perspectives on supplier capability and procurement performance. A study by Hage and Aiken (1967) supports the idea that higher education levels within organizations contribute to better decision-making and innovation, which are crucial for effective procurement practices. The presence of individuals with secondary education (14.2%) also adds depth to the findings, as they may offer unique viewpoints rooted in practical experience. This is consistent with research by Becker (1993), which emphasizes that diverse educational backgrounds can lead to a more comprehensive understanding of operational challenges, thereby enriching the procurement process at MOEST.

Supplier Capability on Procurement Performance

The study presents, descriptive statistics of the first specific objective. In this objective, the researcher was to determine the influence of capability of the supplier on influencing performance of public procurement at MOEST. The study used four indicators in determining influence of capability of the supplier on influencing public procurement performance at MOEST. The indicators were financial capacity, quality of product, flexibility to change and cost.

4.1 Financial Capacity

The respondents were asked whether adequate financial capacity is important criteria usually used for selecting best supplier at MoEST. Finding is presented below on table

Table 2: Financial Capacity

Rate scale	Frequency	Percent
Strongly agree	26	12.3
Agree	90	42.5
Neutral	66	31.1
Disagree	18	8.5
Strongly Disagree	12	5.7
Total	212	100.0

Source: Field Data, 2024

From the table 3 above, findings showed that 12.3% strongly agreed that financial capacity is important criteria usually used for selecting best supplier at MoEST, 42.5% agreed, 31.1 were neutral, 8.5% disagreed and 5.7% strongly disagreed. From these findings, more than a half confirm that financial capacity is important criteria usually used for selecting best supplier at MoEST. This gives an implication of the fact that suppliers with strong financial capacity are more likely to be stable and reliable partners. They can fulfill their commitments, deliver goods and services on time, and maintain consistent quality standards. This reliability is essential for the smooth functioning of operations within the Ministry of Education. Working with financially stable suppliers reduces the risk of disruptions in the supply chain. Suppliers facing financial difficulties may encounter issues such as bankruptcy, which could lead to delays or cancellations in fulfilling orders.

Suppliers with strong financial capabilities are better positioned to invest in innovation, research, and development. They can upgrade their technologies, improve product quality, and offer competitive pricing. This benefits the Ministry by ensuring access to cutting-edge products and services that meet its evolving needs. Establishing relationships with financially secure suppliers fosters long-term partnerships. Such collaborations can lead to mutual growth opportunities, knowledge sharing, and strategic alignment between the Ministry and its suppliers. This stability contributes to sustainable procurement practices. The study findings are supported by Sajjad (2021) that a supplier with strong financial capacity is more likely to be stable and reliable. They are less likely to go bankrupt or face financial difficulties, which could disrupt the supply chain and cause delays or shortages. Suppliers with healthy financials are better positioned to invest in quality control measures and innovation. They afford to upgrade their technology, improve their processes, and develop new products, leading to better-quality goods or services for your business.

4.2 Provision of Quality Product

On this indicator, the researcher had to determine the influence of provision of quality product is important criteria usually used for selecting best supplier at MoEST. The finding is presented on table 4 below.

Table 3: Provision of quality product

Rate scale	Frequency	Percent
Strongly agree	39	31.7
Agree	67	54.5
Disagree	17	13.8
Total	123	100.0

Source: Field Data, 2024

Table 4 above show that, 31.7% of the respondents strongly agreed that provision of quality product is important criteria usually used for selecting best supplier at MoEST, 54.5% agree also, and 13.8 % disagreed. High rate of response show that provision quality products at MOEST is good and among criteria used to evaluate supplier capability. If the supplier is capable, then procurement performance will be improved. This entails that quality educational

products directly impact student success and learning outcomes. For example, textbooks that are accurate, up-to-date, and aligned with the curriculum can significantly enhance the quality of education provided to students. Through selecting suppliers who offer high-quality educational materials, the Ministry of Education can ensure that students have access to resources that support their learning and academic achievement. In the same trail The Ministry of Education in Tanzania has a responsibility to uphold its reputation as a provider of quality education. Through sourcing products from reputable suppliers known for delivering high-quality goods, the ministry can maintain its credibility among stakeholders such as parents, educators, and the public. Consistently providing students with top-notch educational materials reflects positively on the ministry's commitment to excellence.

The study findings are linked to the study by Zhang et al, (2020) quality products directly contribute to customer satisfaction. When customers receive high-quality goods, they are more likely to be satisfied with their purchase, leading to repeat business and positive word-of-mouth referrals. Consistently offering quality products helps build a positive brand reputation. A supplier known for delivering superior quality goods is more likely to be trusted and preferred by both consumers and businesses alike. Quality products typically have fewer defects and require fewer returns or replacements. This reduces costs associated with returns, warranties, and customer service, ultimately benefiting both the supplier and the buyer.

4.3 Flexibility to Change

This was the third indicator on this first specific objective. Researcher used this indicator to study that, high flexibility to change is important criteria usually used for selecting best supplier at MoEST. Finding is presented on table 5 below: -

Table 4: Flexibility to change

Rate scale	Frequency	Percent
Strongly agree	32	26.0
Agree	75	61.0
Disagree	11	8.9
Strongly Disagree	5	4.1
Total	123	100.0

Source: Field Data, 2024

The finding on Table 5 showed that, 26% strongly agreed that high flexibility to change is important criteria usually used for selecting best supplier at MoEST, 61% agreed, 8.9% disagreed and 4.1% strongly disagreed. Majority of the respondents confirmed that flexibility to change is an important aspect in evaluating supplier capability. This educational institution like the Ministry of Education often experience changes in their requirements due to evolving educational policies, curriculum updates, or shifts in student demographics. Suppliers who can quickly adapt to these changing needs demonstrate their capability to meet the dynamic demands of the education sector. For example, if the Ministry decides to introduce a new digital learning platform, suppliers that can swiftly adjust their products or services to align with this initiative would be highly valuable. In times of emergencies such as natural disasters or health crises, the ability of suppliers to respond promptly and provide necessary resources is critical

for ensuring continuity in educational activities. Flexible suppliers can offer alternative solutions or expedite deliveries during such challenging circumstances, thereby supporting the Ministry's efforts to maintain uninterrupted educational services. The education sector is increasingly integrating technology into teaching and learning processes. Suppliers that are flexible and innovative can introduce cutting-edge technologies or educational tools that enhance the quality of education provided by the Ministry. For instance, a supplier offering interactive learning software that can be easily customized to suit different subjects or grade levels demonstrates flexibility in meeting diverse educational needs.

4.4 Total Cost of the Product

This was the fourth and last indicator for this objective. Through this indicator, the researcher was determining whether total cost of the product is important criteria usually used for selecting best supplier at MoEST. The finding is presented on table 6 below: -

Table 5: Total cost of the product

Rate scale		Frequency	Percent
Valid	Strongly agree	57	46.3
	Agree	53	43.1
	Disagree	3	2.4
	Strongly Disagree	10	8.1
	Total	123	100.0

Source: Field Data, 2024

On the table 6, finding show that 46.3% of the respondents strongly agreed that, total cost all Procurement categories is important criteria usually used for selecting best supplier at MoEST, 43.1 agree, 2.4 % disagreed and 8.1% strongly disagree. Overall finding for show that, total cost of all procurement categories is an important criterion that MOEST used to select best supplier. In this case lowest evaluated supplier is selected. This implies that One of the critical factors that influence the supplier selection process is the total cost of all procurement categories. Total cost includes direct costs such as purchase price, transportation, and insurance fees. Indirect costs such as administrative costs, taxes, and duties are also part of the total cost.

The findings of this study underscore the crucial role of supplier capabilities in enhancing public procurement performance at the Ministry of Education and Sports (MOEST). The demographic analysis reveals a diverse respondent profile, with a predominance of female professionals, indicating a potential influence of gender dynamics in decision-making processes. This aligns with Kabeer (2016), who noted that higher female representation can foster collaborative environments, which may improve procurement outcomes. Moreover, the age diversity among respondents, particularly the significant representation of early to mid-career professionals, suggests a blend of innovative ideas and experienced insights that are essential for effective supplier evaluation. Chen et al. (2018) corroborate this, emphasizing that diverse age groups can enhance problem-solving capabilities within organizations, which is vital for navigating the complexities of public procurement.

The indicators assessed: financial capacity, quality of products, flexibility to change, and total cost collectively illustrate the multifaceted nature of supplier evaluation. A majority of respondents affirmed the importance of financial stability, with 54.8% recognizing it as critical for selecting suppliers. This finding supports Sajjad (2021), who emphasized that financially stable suppliers are less likely to disrupt operations due to solvency issues. Similarly, the emphasis on quality products reflects a commitment to educational excellence; high-quality materials directly contribute to better student outcomes, echoing Zhang et al. (2020), who highlighted the link between quality goods and customer satisfaction. The acknowledgment of flexibility further reinforces the need for suppliers to adapt to the rapidly changing educational landscape, a necessity underscored by recent educational reforms.

During interviews conducted with key stakeholders at the Ministry of Education, Science and Technology, several insights emerged regarding the influence of supplier capability on public procurement performance. One respondent emphasized the critical nature of supplier selection, stating, *“The quality of suppliers we engage with directly impacts our ability to deliver educational materials on time and within budget.”* This sentiment was echoed by another official, who noted that *“When we partner with capable suppliers, we see fewer delays and better compliance with our specifications.”* These statements highlight the importance of assessing supplier qualifications before engaging them in procurement processes.

Moreover, respondents identified specific challenges related to supplier capability that affect procurement outcomes. One procurement officer remarked, *“Many suppliers lack the technical skills necessary to fulfill our requirements, which leads to subpar products and services.”* This perspective aligns with findings by Mwenda and Mbilinyi (2023), who highlighted that inadequate supplier assessment mechanisms can lead to inefficiencies and compromises in the quality of procured goods. The interviews revealed a pressing need for enhanced supplier evaluation protocols to ensure that only qualified suppliers are considered for contracts.

Additionally, participants discussed the role of training and development in improving supplier capability. One respondent stated, *“We have implemented training programs for our suppliers, but many still struggle to meet our standards.”* This indicates that while initiatives are in place, there remains a gap in effectively elevating supplier performance. Supporting this observation, the Public Procurement Regulatory Authority (PPRA, 2022) emphasizes that ongoing training and capacity-building efforts are essential for ensuring that suppliers can meet public sector demands effectively.

Finally, the interviews revealed a common consensus on the necessity of continuous monitoring and evaluation of supplier performance. As one respondent articulated, *“Regular assessments help us identify issues early, but we lack a systematic approach to doing this.”* This finding resonates with empirical studies suggesting that proactive monitoring can enhance procurement performance by ensuring accountability and fostering supplier development (Alsharif et al., 2020). Addressing these gaps in supplier capability and procurement processes is vital for improving overall performance at the Ministry of Education, Science and Technology.

5.0 Conclusion

In conclusion, the study highlights the significant influence of supplier capability on public procurement performance at the Ministry of Education, Science and Technology (MoEST). Through various indicators, including financial capacity, product quality, flexibility to change, and total cost, it has become clear that selecting capable suppliers is crucial for the Ministry's ability to achieve its educational objectives. The findings suggest that suppliers with robust financial capabilities and a commitment to delivering high-quality products are more likely to foster reliable partnerships that benefit both the Ministry and the educational sector at large. Furthermore, the ability of suppliers to adapt to changing requirements reflects their importance in supporting the Ministry's mission, especially in dynamic educational environments.

The study also underscores the necessity for continuous improvement in supplier assessment and management processes. As highlighted by the interview data, the current practices at MoEST require enhancement to ensure that only qualified suppliers are engaged in procurement activities. Addressing the gaps in supplier capability through training and development, as well as establishing robust monitoring systems, will be essential in achieving optimal procurement performance. By doing so, the Ministry can strengthen its supply chain, ensuring that it meets the demands of its educational mandate effectively.

6.0 Recommendations

6.1 Enhance Supplier Evaluation Processes

The Ministry of Education, Science and Technology should implement more rigorous supplier evaluation and selection processes. This includes developing comprehensive criteria that assess financial capacity, quality assurance, and the ability to adapt to changes in educational requirements. Regular training for procurement staff on these evaluation techniques can improve supplier selection outcomes.

6.2 Invest in Supplier Development Programs

To strengthen supplier capability, the Ministry should invest in development programs that focus on enhancing the technical and operational skills of suppliers. This could include workshops, training sessions, and mentoring initiatives aimed at improving suppliers' understanding of the Ministry's requirements and standards.

6.3 Establish Continuous Monitoring Mechanisms

The Ministry should establish a systematic approach to monitor and evaluate supplier performance continuously. Implementing performance metrics and regular assessments will help identify issues early and foster accountability. This proactive approach will ensure that suppliers consistently meet the standards required for successful procurement.

6.4 Foster Strategic Partnerships with Suppliers

Developing long-term partnerships with key suppliers can lead to mutual growth and innovation. The Ministry should consider creating collaborative arrangements that encourage knowledge sharing, joint problem-solving, and strategic alignment with suppliers. Such partnerships can enhance the overall efficiency of procurement processes and contribute to better educational outcomes.

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Assessing the Viability of Blockchain Technology for Enhancing Financial Services in Tanzania: Prospects and Limitations

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Abstract

This research study assessed the viability of blockchain technology in Tanzania by examining its prospects and limitations. Blockchain technology has gained significant attention globally for its potential to revolutionize various industries through enhanced security, transparency, and efficiency. However, its applicability and adoption in Tanzania, a developing country, may be influenced by unique institutional, technological, economic, and social factors. The study focused on a number of regions in Tanzania. The study adopted a mixed-methods research design, incorporating quantitative surveys and qualitative interviews and focus group discussions. A purposive sampling technique was employed to select key stakeholders, including business representatives, government officials, and individuals from different sectors and regions of Tanzania. The data collected was analysed using data visualization techniques. The research findings will provide insights into the current state of blockchain technology adoption in Tanzania, the perceived prospects and limitations, as well as stakeholders' perspectives. The results of this study will contribute to the existing literature on blockchain technology adoption in developing countries and offer practical recommendations for policymakers, businesses, and individuals interested in exploring the potential of blockchain technology in Tanzania.

Keywords: Blockchain technology, viability, prospects, limitations

1. Introduction

Blockchain technology refers to a decentralized, transparent, and secure database that is used to store and transmit data securely across a network of computers (Swan, 2015). Globally, there is a notable increase of Blockchain technology application. This is attributed to the unique properties of Blockchain technology. These properties include but not limited to decentralized, secure, transparent nature, fault-tolerant database (Shetty et al., 2019). Blockchain Technology can transform different sectors including but not limited to agriculture, finance, industry, healthcare, real estate, supply chain management, fighting counterfeit products, and government agencies. Tanzania, a developing country in East Africa, is seeking to leverage this technology to enhance its economic growth and development (The Citizen, 2021). This concept note aims to discover the potential of blockchain technology in Tanzania, focusing on the opportunities and challenges that are aligned with blockchain technology implementation.

Background

Blockchain technology is a distributed electronic ledger that stores digital data that is protected by high-end encryption, very difficult to tamper with, and can be updated using a consensus

mechanism that is accepted by all associated network nodes. Blockchain technology value lies in its ability to shield network nodes from being compromised by a single point of failure. Additionally, the blockchain technology provides better resilience, encryption, auditing, and transparency while guaranteeing the security, integrity, and accessibility of stored data (C. Kombe et al., 2019; Shetty et al., 2019).

Tanzania is a developing country with a population of over 61 million people (Tanzania National Bureau of Statistics, 2022), and an economy primarily driven by agriculture, mining, and tourism. The government of Tanzania has recognized the potential of blockchain technology to enhance its economic growth and development (The Citizen, 2021). In 2021, the Tanzanian government announced her plans to create blockchain advisory team to guide the government on guidelines, legislation and policies that will allow the technology to be used successfully (*Tanzania Announces Plans To Create Blockchain Advisory Team As Country Moves To Adopt Crypto* | BuyUcoin Blog, 2021).

Problem Statement

Blockchain technology has been hailed as a transformative force with the potential to revolutionize various industries and sectors globally. Some of these sectors include government agencies, health care, energy supply, supply chain, real estate (Akram et al., 2020; C. Kombe et al., 2019; Sawa, 2019; Swan, 2015). However, despite its growing popularity and adoption in developed countries, its potential in developing countries, particularly in Africa, remains largely unexplored (Agbo & Nwadiolor, 2020; Mavilia & Pisani, 2020). Tanzania, like many other African countries, faces numerous socio-economic challenges in various sectors such as land, healthcare and mining. These challenges include but not limited to lack of transparency, corruption, and bureaucracy (M. C. Kombe et al., 2017; Elikana Eliakimu Sadock, 2021). These issues have hampered the country's progress towards sustainable development and economic growth. Blockchain technology, with its potential to promote transparency, accountability, decentralisation, efficiency, and trustworthiness, could provide a solution to some of these challenges (Miraz & Ali, 2018; Crosby, 2016). However, there is a lack of understanding of the prospects and limitations of blockchain technology in the Tanzanian context. Therefore, there is a need to assess the viability of blockchain technology in Tanzania, its potential benefits and drawbacks, and the challenges that need to be addressed for successful implementation. This research aims to address this gap in the literature by investigating the potential of blockchain technology in Tanzania and providing recommendations for policymakers, regulators, and industry stakeholders on how to leverage its potential for sustainable development and economic growth.

Research Questions

This study aimed to answer the following research questions:

1. What are the key prospects and potential applications of blockchain technology in Tanzania?
2. What are the specific limitations and challenges faced in implementing blockchain technology in Tanzania?
3. What is the current level of awareness and understanding of blockchain technology among businesses and individuals in Tanzania?

Objectives

This study aimed to achieve the following specific objectives:

1. Identify and analyze the key prospects and potential applications of blockchain technology in Tanzania.
2. Investigate the specific limitations and challenges faced in implementing blockchain technology in Tanzania.
3. Assess the current level of awareness and understanding of blockchain technology among businesses and individuals in Tanzania.

Rationale

Blockchain technology has emerged as a transformative force with the potential to revolutionize various industries and sectors globally. Despite its growing popularity and adoption in developed countries, its potential in developing countries, particularly in Africa, remains largely unexplored. Tanzania, like many other African countries, faces numerous socio-economic challenges, including corruption, lack of transparency, and inefficiencies in various sectors. These issues have hampered the country's progress towards sustainable development and economic growth. Blockchain technology, with its potential to promote transparency, accountability, and efficiency, could provide a solution to some of these challenges. Therefore, it is important to assess the viability of blockchain technology in Tanzania, its prospects, and limitations. This research aimed to contribute to the existing body of knowledge on blockchain technology in developing countries, particularly in Tanzania, and provide insights and recommendations on how to harness its potential while mitigating its risks and challenges.

2. Literature Review

Overview of Blockchain

Blockchain technology refers to a decentralized, traceable, immutable, and distributed ledger that can record transactions securely and transparently. The digital ledger of transactions are maintained via a network of computers rather than a centralized server (Perwej, 2018; Chen et al., 2018; Muni Sankar & Booba, 2020). The decentralization of the network nodes eliminates the risk of single point of failure. Blockchain technology provides better resilience, encryption, auditing, and transparency while guaranteeing the confidentiality, integrity, and availability of stored data (C. Kombe et al., 2019).

Common types of blockchain networks are public blockchain, private blockchain, consortium blockchain and hybrid blockchain. Public blockchains are permission less and open networks that can be accessed by anyone. Private blockchain are restricted, they are accessible by a small specific group of people. Consortium blockchains are made by integrating elements of both public and private blockchains. They are used mostly by organizations to validate transactions. Hybrid transaction combines both the private and public blockchains to offer customization and flexibility to participating members (Christine Campbell, 2023; Schlecht et al., 2021).

Blockchain can be used in a number of sectors including but not limited to agriculture, finance, healthcare, real estate, supply chain management, education, voting and government agencies (Demestichas et al., 2020; An et al., 2021; Dimitrov, 2019; Dhawan et al., 2020; Chen et al.,

2018; Adeshina & Ojo, 2019; Ølnes et al., 2017). In Tanzania, blockchain technology utilization is still at a low pace (Jesca Nkwabi, 2021). Most of the literature have focused blockchain applications in the healthcare area (Mnyawi, 2022; C. Kombe et al., 2019).

Prospects of Blockchain Technology in Tanzania

The literature reveals several important prospects and potential applications of blockchain technology in Tanzania. For instance, (Natália Likavčanová, 2019) argue that blockchain can enable easier sharing of information about the treatment and medical conditions of patients. Also, blockchain can help to substitute the paper-based bureaucratic, complex, prolonged, and disposed to corruption system with a more well-organized system that can increase transparency and accountability in land administration (M. C. Kombe et al., 2017; Natália Likavčanová, 2019). Furthermore, (Tende et al., 2022) suggest that blockchain has the potential to revolutionize the agricultural sector especially the government subsidized vouchers to farmers by eliminating challenges like misuse of the vouchers by some government officials and lack of trust.

Limitations and challenges of implementing blockchain technology in Tanzania

Regardless of its potential, implementing blockchain technology in Tanzania is not short of challenges. (Emmanuel Constantine & Kwang Ho, 2015; Natália Likavčanová, 2019) highlight the lack of technological infrastructure as a major obstacle. The limited internet connectivity and access to reliable electricity may hinder the widespread adoption or use of internet dependent applications such as blockchain. Additionally, (C. Kombe et al., 2019; M. C. Kombe et al., 2017) stress out that unless the regulatory frameworks and legal considerations are put in place, blockchain technology can be used negatively by cyber criminals.

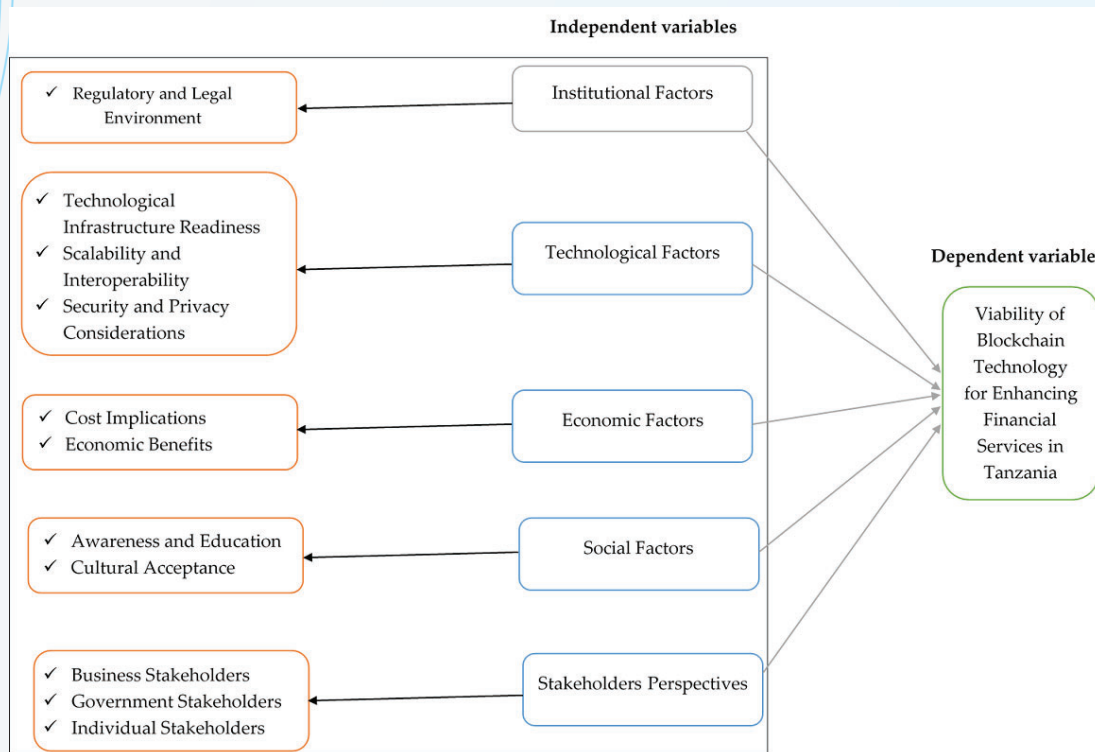
Awareness and Understanding of Blockchain Technology in Tanzania

The level of awareness and understanding of blockchain technology among stakeholders in Tanzania is a vital factor in its application. According to (Mnyawi, 2022), the system administrators in the surveyed facility had no knowledge of blockchain technology let alone its potential benefits. This lack of awareness in this facility can reflect the status of awareness and understanding in most sectors in Tanzania. Lack of awareness can retard the adoption and application of blockchain technology, therefore, to reduce this knowledge gap, the author insists regular trainings and reviewing the curriculum to accommodate blockchain technology programmes/modules.

Conclusion

The literature review highlights the key prospects and limitations of implementing blockchain technology in Tanzania. It highlights the potential benefits in areas such as agriculture and supply chain management, while also acknowledging challenges related to internet, electricity and regulatory frameworks. Furthermore, the review emphasizes the importance of raising awareness and understanding of blockchain technology among practitioners in Tanzania.

Conceptual Framework



3. Methodology

Study Area

The study focused on all regions in Tanzania, this gave a complete status of blockchain technology adoption.

Research Design

The research design for this study was exploratory in nature. An exploratory design allows for a comprehensive investigation of the opportunities and challenges associated with implementing blockchain technology in the financial services sector in Tanzania. It enabled the researchers to gain a deeper understanding of the topic through data collection and analysis (Saunders et al., 2009).

Research Approach

The research approach involved quantitative method. Quantitative methods, in this case surveys, enabled to gather numerical data to support statistical analysis (Creswell & Clark, 2017).

Sampling

A purposive sampling technique was employed to select participants for this study. Purposive sampling allowed for the deliberate selection of participants who possess specific knowledge and experience relevant to the research topic (Palinkas et al., 2015). Participants included senior managers, IT professionals, and regulatory authorities who are familiar with both blockchain technology and financial services in Tanzania. This selection ensured that the

sample comprises individuals who can provide valuable insights and contribute to a thorough evaluation of the research objectives.

Sample Size

The sample size depended on data saturation, which occurred when new information or insights were no longer obtained from additional participants. Initially, a diverse sample of approximately 100 participants were targeted. However, the sample size was adjusted during the research process to ensure comprehensive coverage of the topic (Guest et al., 2006).

Data Collection

Data was collected through online surveys. Data collection instrument was designed based on the research questions and the conceptual framework.

Data Analysis

Data was analyzed using a Pandas which is python library. Pandas has the ability to make data cleaning, transformation, and analysis much easier and faster. The statistics such as percentages, were employed to summarize the survey responses and provide a quantitative analysis.

4. Results

4.1. Demographic Characteristics

Age

The age distribution indicates a broad age-based representation. Majority of the participants are aged between 21 – 25 years (23.0%), 31 – 35 years (20.0%) and 36 - 40 years (20.7%). This potentially impact the results by highlighting views from groups that may be more receptive to innovative financial technologies (Figure 1).

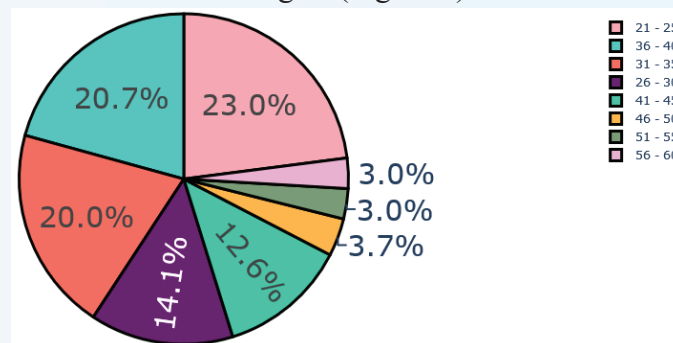


Figure 1: Respondents' age representation

Gender

There exists gender imbalance among participants, with males comprising over two-thirds of the sample (Figure 2).

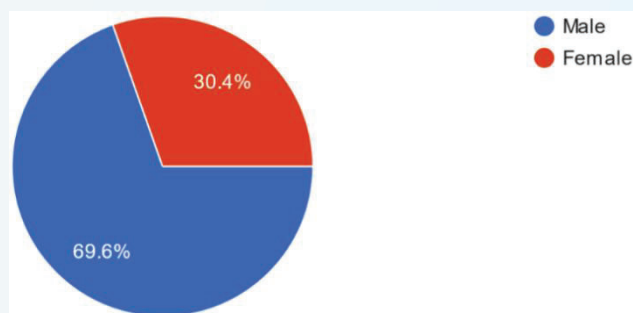


Figure 2: Respondents' gender representation

Education Level

The data suggests that the study's respondents are generally well-educated, with the majority possessing at least a bachelor's degree (55.6%), postgraduate diploma (37.8%) and diploma (4.4%) (Figure 3).

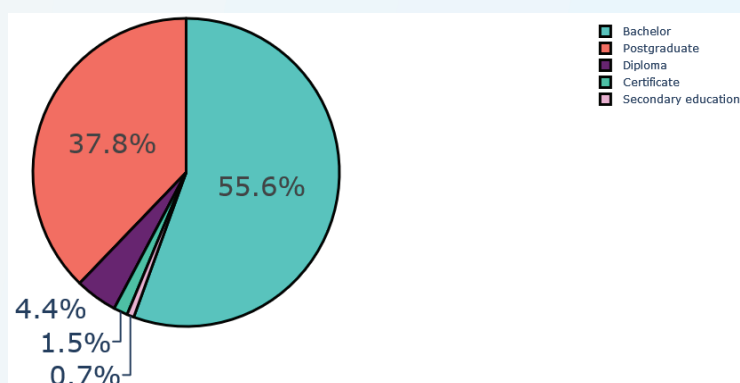


Figure 3: Respondents' education level

Region of Residence

The data indicates a strong concentration of study respondents in Dar es Salaam, which represents 53.33% of the total sample. Other regions, such as Mwanza (8.15%) and Dodoma (6.67%), have smaller but notable participation, while the remaining regions contribute minimal representation (Figure 4).

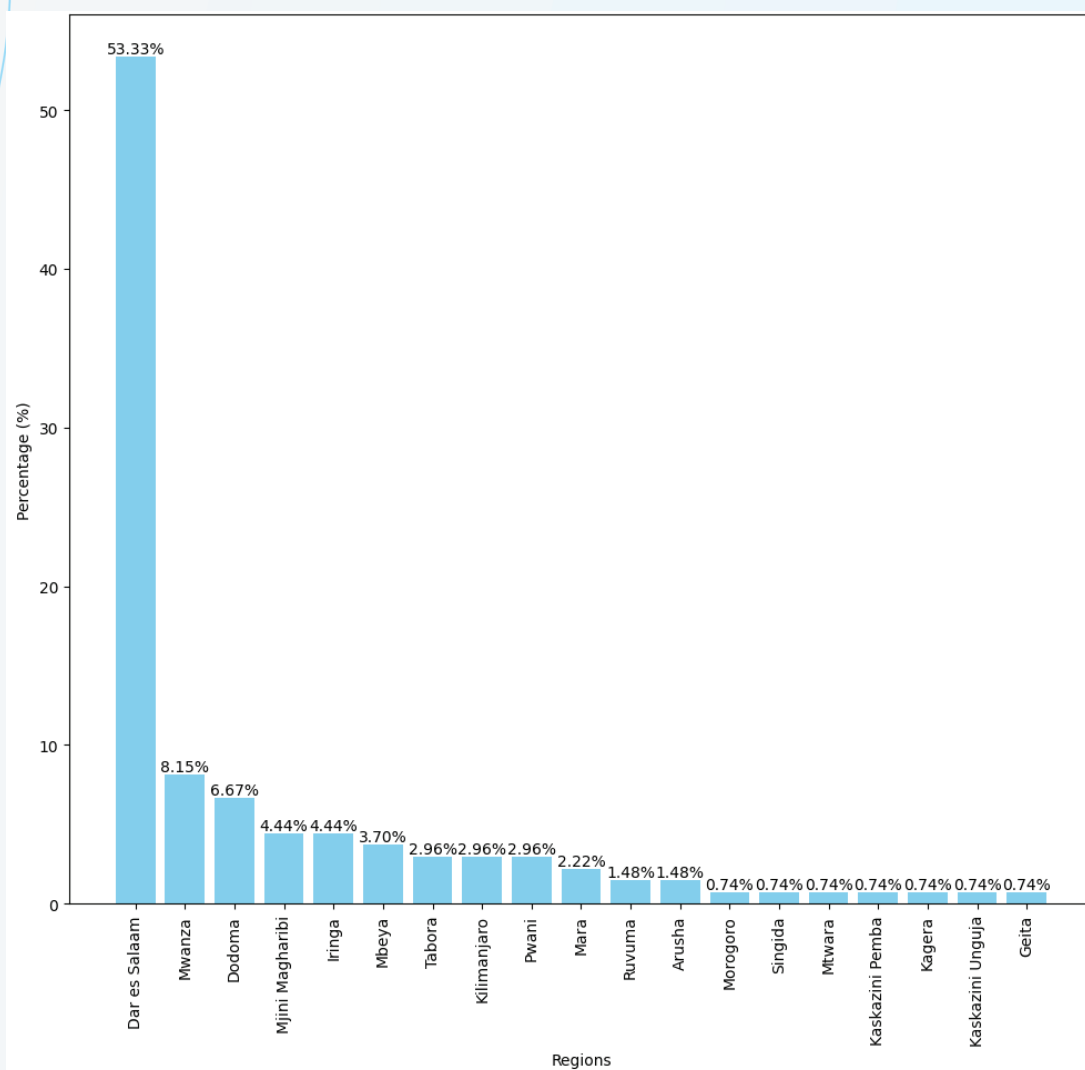


Figure 4: Respondents' region of residence

4.2. Awareness and Knowledge of Blockchain Technology

The data indicates that 84.4%, of respondents had prior knowledge of blockchain technology before participating in this survey, while 15.6% had not heard of it before (Figure 5).

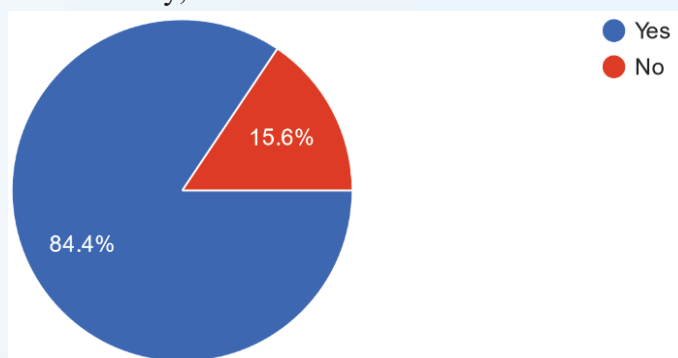


Figure 5: Heard about blockchain before this survey

Primary Source of Learning about Blockchain Technology

Majority of the respondents (63.7%) indicated that Internet is the primary source of their blockchain knowledge for most respondents, followed by academic institutions at 27.41%.

Media and professional training or seminars each account for 16.3% of respondents' first exposure. Word of mouth contributes 12.59%, while 11.11% of respondents reported they had never learned about blockchain. Minimal sources such as reading and close friends account for just 0.74% each (Figure 6).

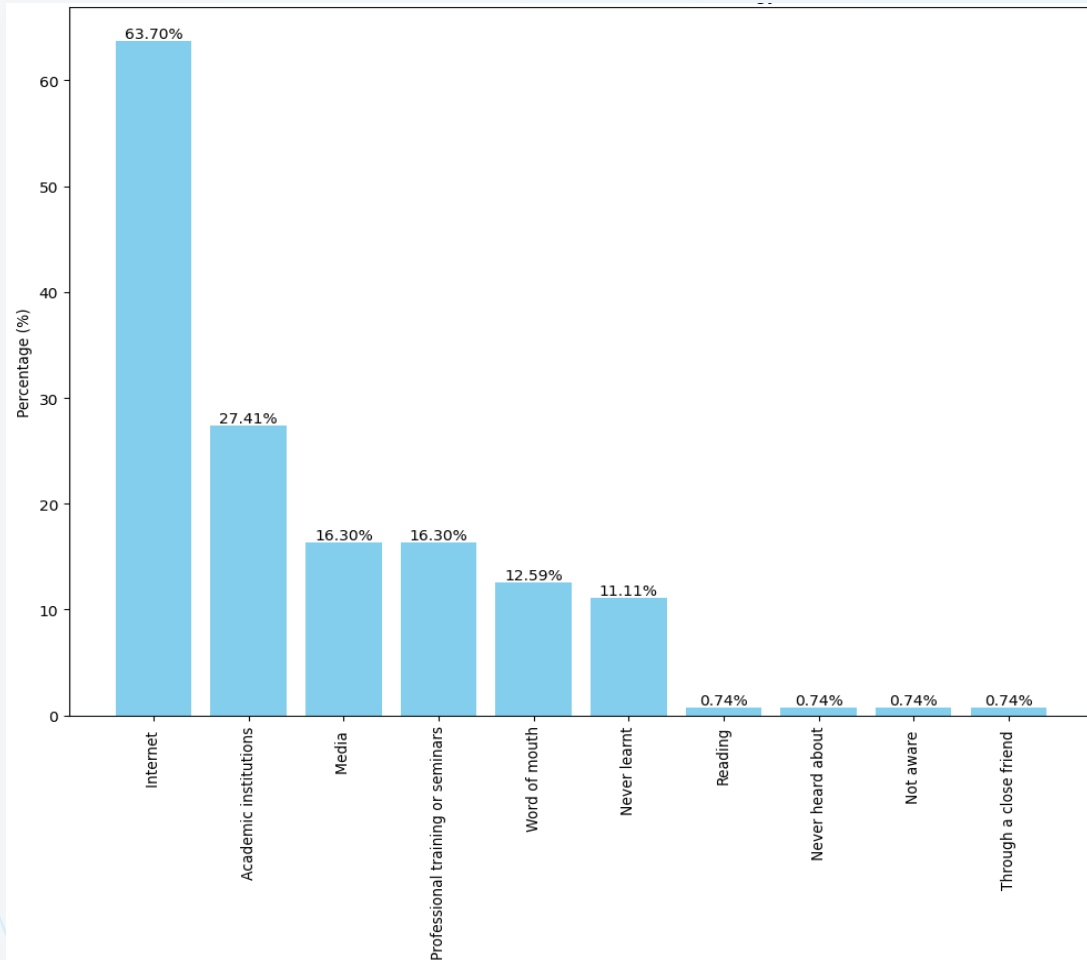


Figure 6: Primary source of learning blockchain technology

Level of Understanding of Blockchain Technology

The majority of respondents (62.2%) possess a basic understanding of blockchain technology while at the end, 16.3%, have no understanding at all. In between, 16.3% have an intermediate understanding while 5.2% of respondents have an advanced understanding, suggesting that while there is growing interest, deeper expertise in the technology is relatively limited (Figure 7).

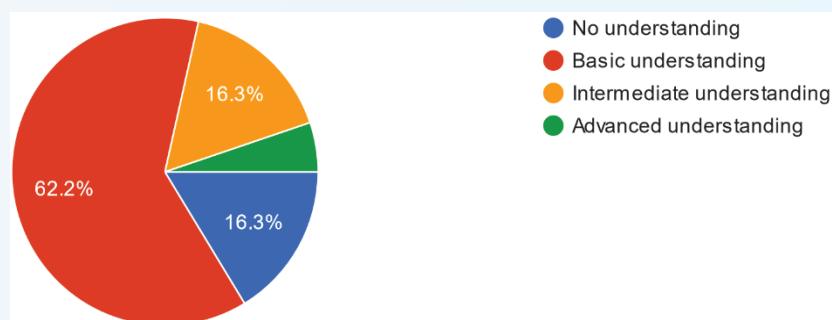


Figure 7: Level of understanding of blockchain technology

4.3. Perceptions of Blockchain Technology

Belief that blockchain technology can improve the financial services sector in Tanzania

More than two thirds of the respondents agree that blockchain technology has the potential to improve the financial sector. 1.5% of the respondents are not sure while the rest have a negative belief on the potential of blockchain technology to improve the financial sector (Figure 8).

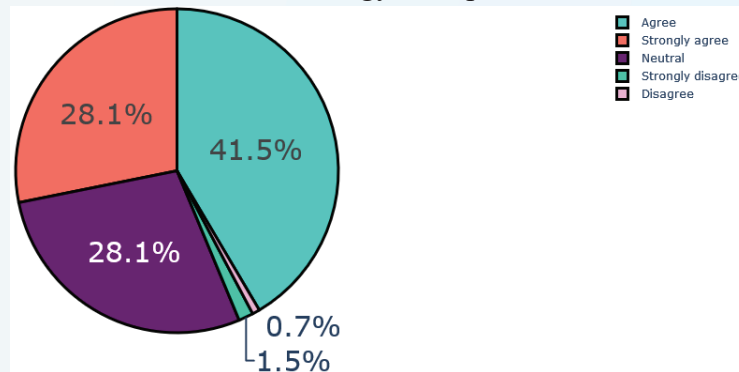


Figure 8: Belief that blockchain technology can improve the financial services sector in Tanzania

Potential Benefits of Blockchain Technology in Financial Services

Majority of the respondents assert that blockchain can enhance security (27.13%), improve efficiency (26.74%), increase transparency (25.19%), and reduce costs (18.22%). However, a small percentage see no benefit (1.94%). A handful of respondents mentioned faster transactions and increased investment opportunities as the benefits of blockchain (Figure 9).

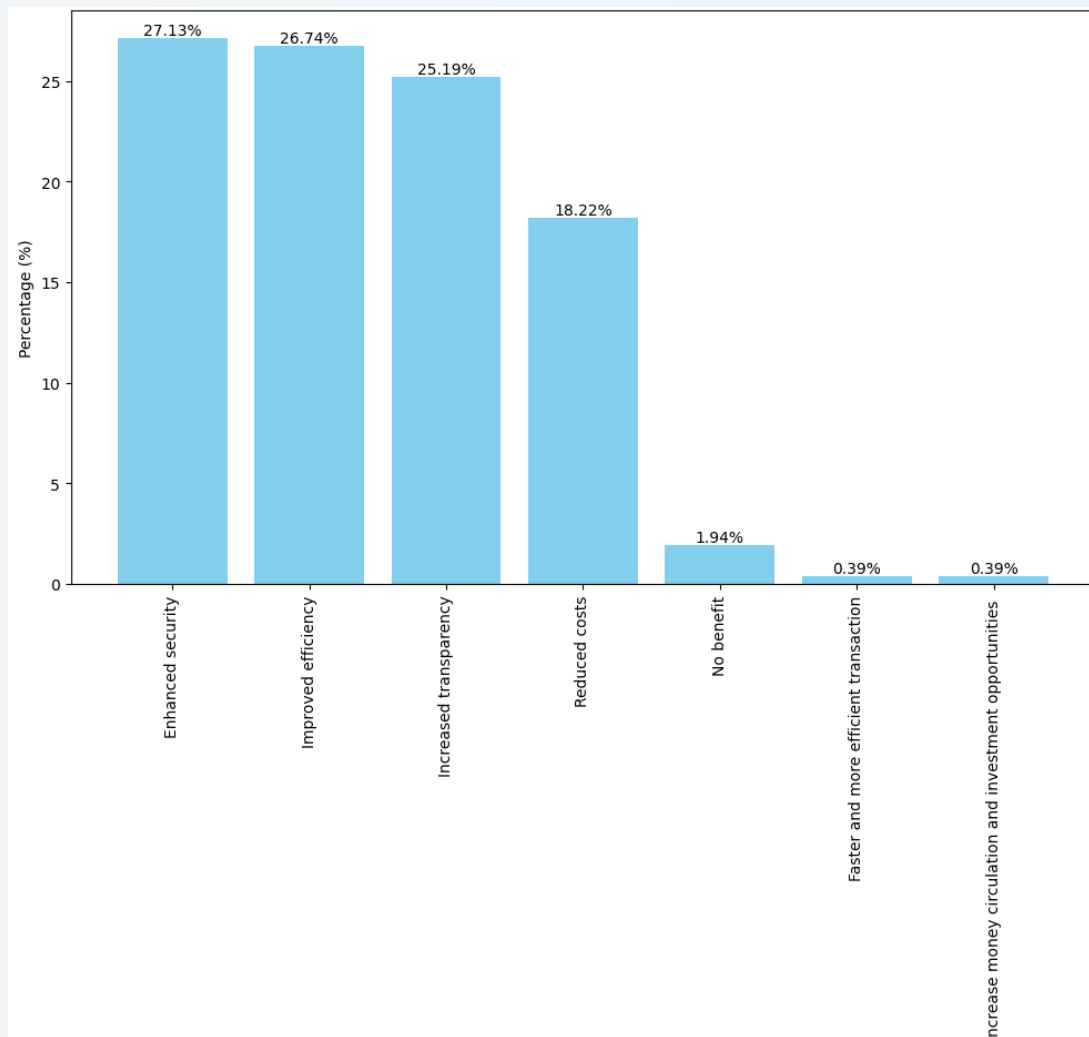


Figure 9: Benefits of blockchain technology

Potential Challenges of Implementing Blockchain Technology in Financial Services

Most respondents indicated the following challenges of implementing blockchain technology in Tanzania's financial sector are a lack of technical expertise (28.15%), technological infrastructure issues (23.51%), regulatory hurdles (17.55%), and social acceptance (15.23%). High initial costs (13.91%) are also a significant concern. Only a small percentage of respondents believe there are no challenges (1.32%), or cite a lack of knowledge about blockchain as a barrier (0.33%) (Figure 10).

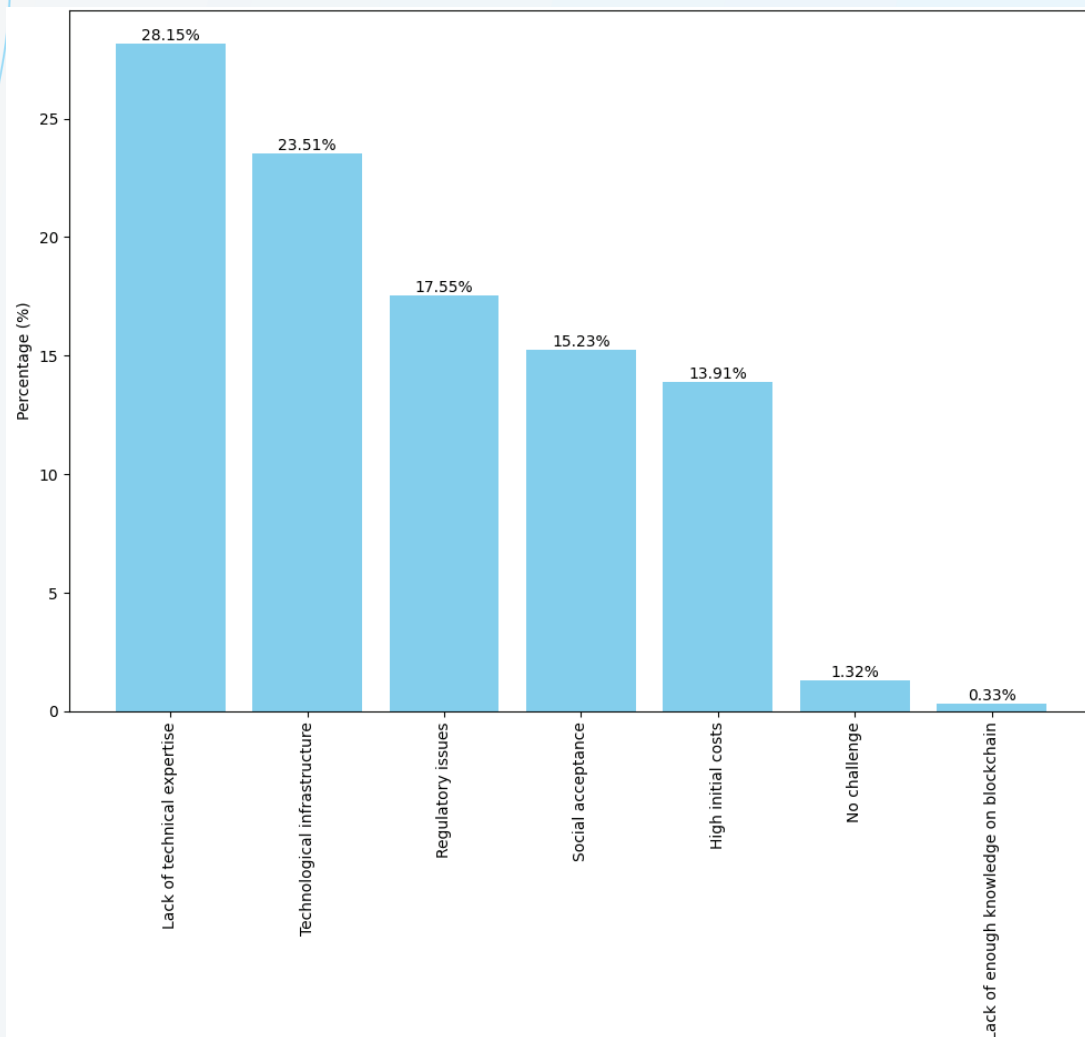


Figure 10: Challenges of implementing blockchain technology in financial services in Tanzania

4.4. Adoption and Implementation of Blockchain in Tanzania

Organization implementing or considering to implement blockchain technology

Almost two thirds of the respondents reported that blockchain has not been implemented at their workplace while 36.3% have implemented (Figure 11).

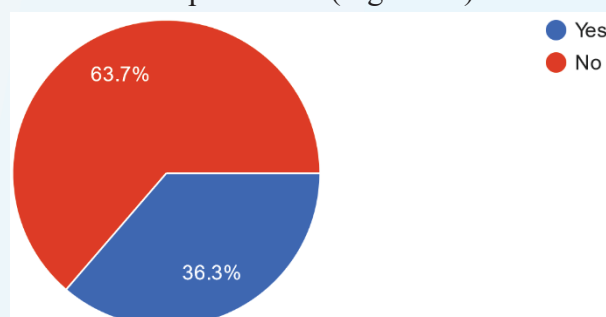


Figure 11: Organization implementing blockchain technology

Concerning the areas that applies blockchain technology; payments and transactions (19.89%), followed by record keeping (14.36%), supply chain management (11.60%) and identity verification (9.94%). 40.88% of the respondents never implement blockchain while 9.94%

stated that they don't know if blockchain is implemented any of their daily activities (Figure 12).

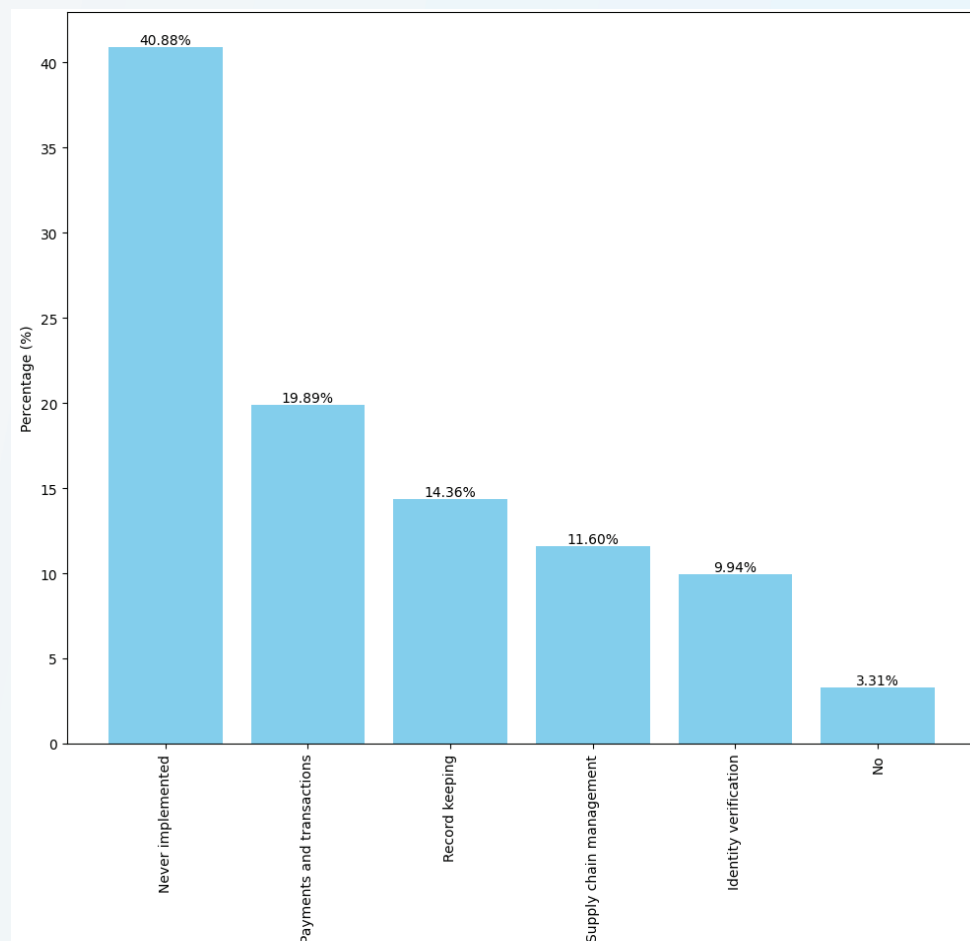


Figure 12: Areas that applies blockchain technology

The major barriers to the adoption of blockchain technology include lack of skilled personnel (26.85%), technological challenges (25.84%), regulatory challenges (16.78%), financial constraints (16.44%), and resistance to change (12.08%). A small number of respondents (0.34%) believe there are no barriers to adoption, some need awareness, and some are not sure (Figure 13).

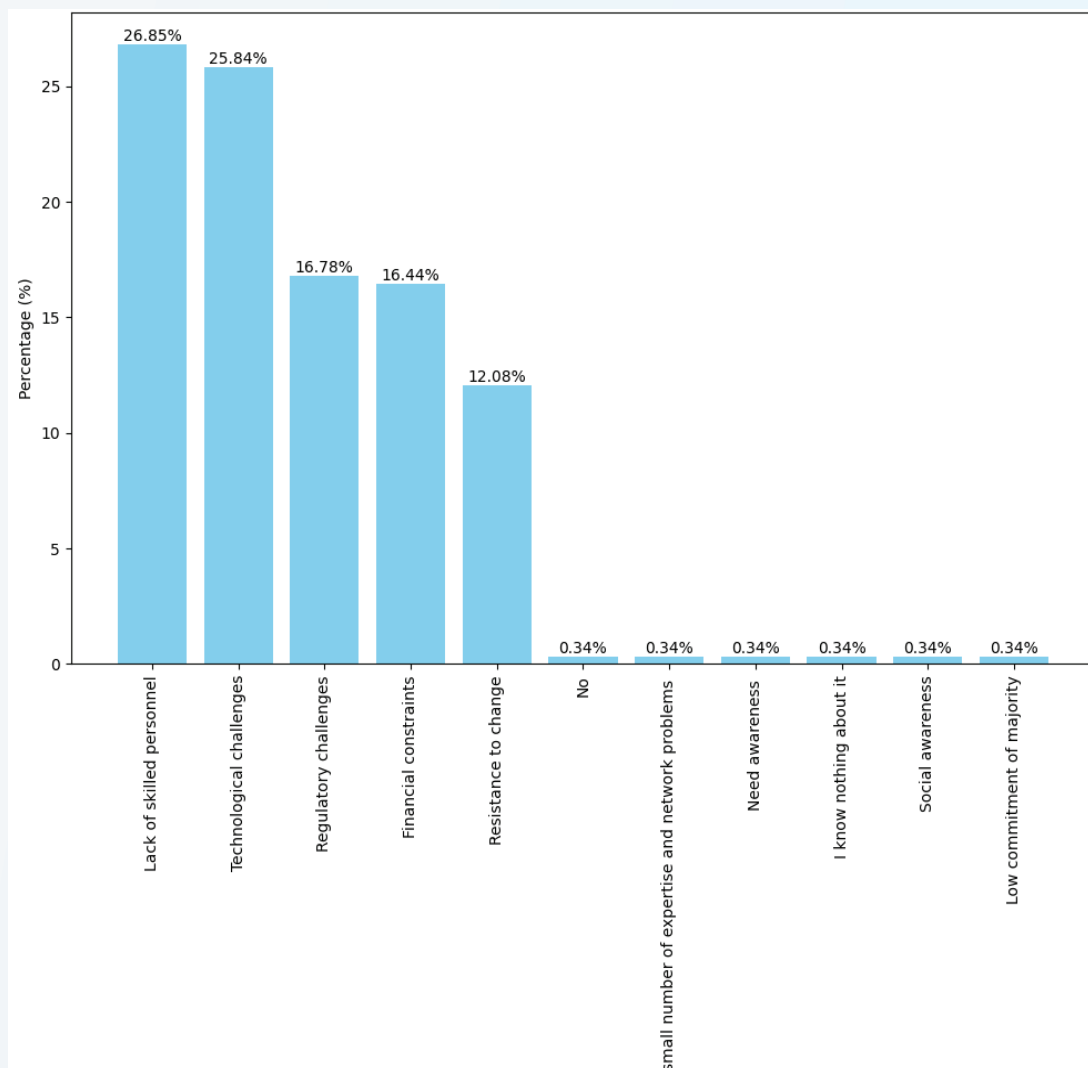


Figure 13: Barriers to the adoption of blockchain technology

4.5. Future Prospects of Blockchain Technology

The most commonly cited initiative to promote blockchain technology is technical training programs, with 27.37% of respondents. This is followed by public awareness campaigns (23.85%), infrastructure development (17.62%), government incentives (15.72%) and regulatory reforms (14.36%). A small percentage of respondents (0.54%) believe that technical infrastructure should be a priority, while others suggest focusing on accessing the benefits of blockchain and sharing positive knowledge with citizens (Figure 14).

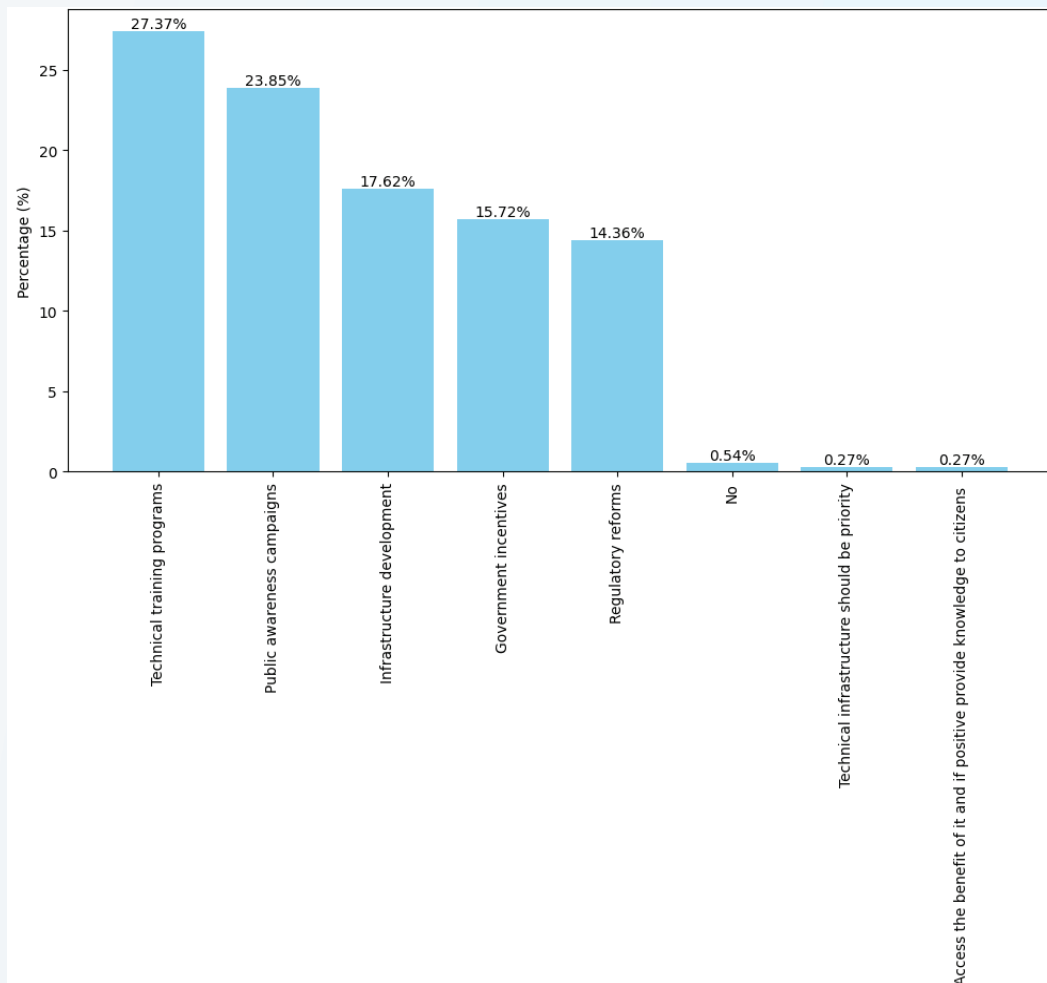


Figure 14: Steps to promote blockchain technology

4.6. Regulatory and Policy Environment

Recommended regulatory changes to facilitate the adoption of blockchain technology

The respondents believe that enhanced cybersecurity regulations (27.55%), collaboration between regulators and industry (25.17%), clearer guidelines and standards (24.49%), and incentives for innovation (21.43%) are crucial for facilitating blockchain technology adoption. 0.68% of the respondents are unsure. A small percentage (0.34%) no know nothing, while others suggest initiating an organizational department for blockchain in a regulator (Figure 15).

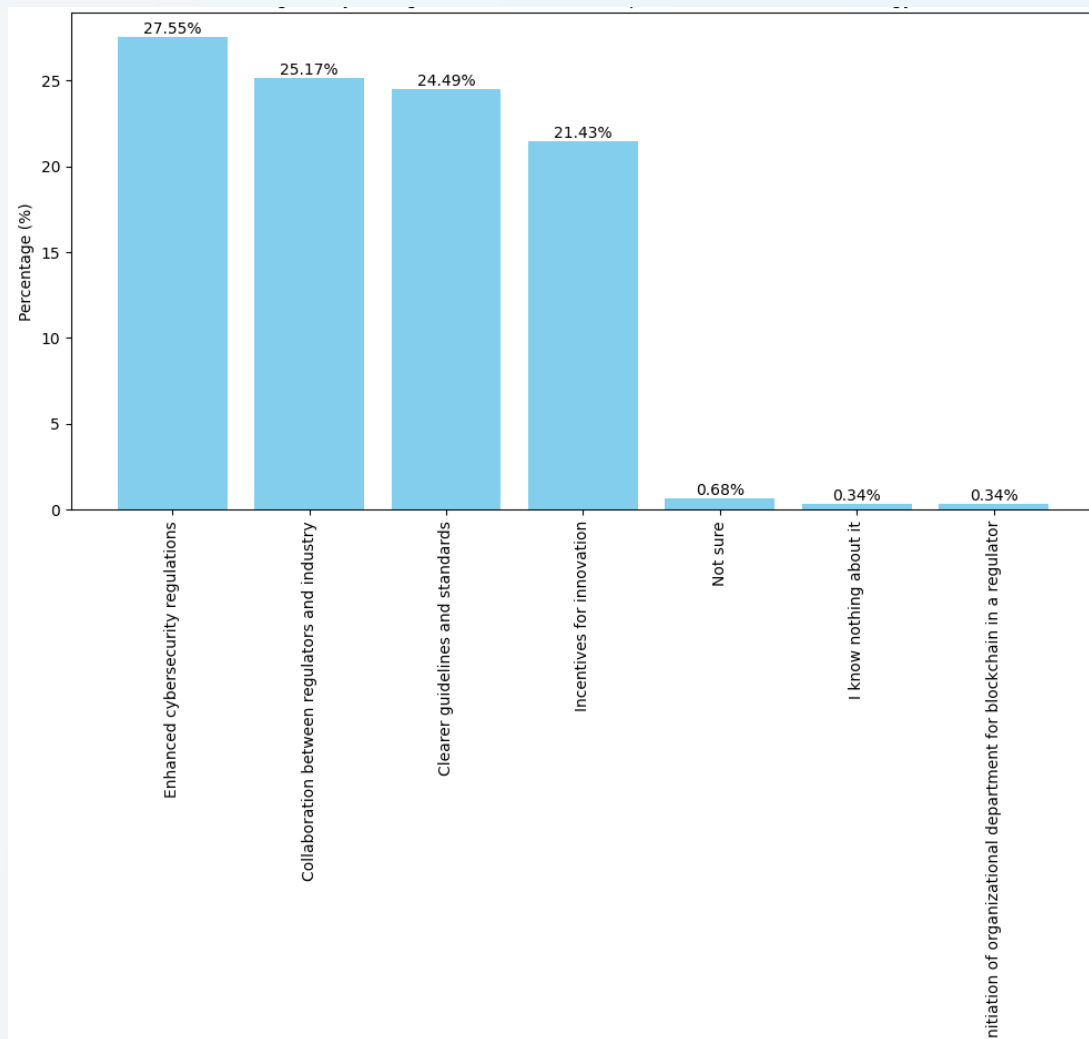


Figure 15: Regulatory changes to facilitate the adoption of blockchain technology

Proactivity of the government in promoting blockchain technology in Tanzania

More than half of the respondents indicated that the government is very proactive. Almost a quarter of the respondents asserted that the government is proactive. A smaller portion, 9.6%, are neutral, while 8.9% indicated that the government is reactive. A small fraction of respondents, 4.4%, indicated that the government is very reactive (Figure 16).

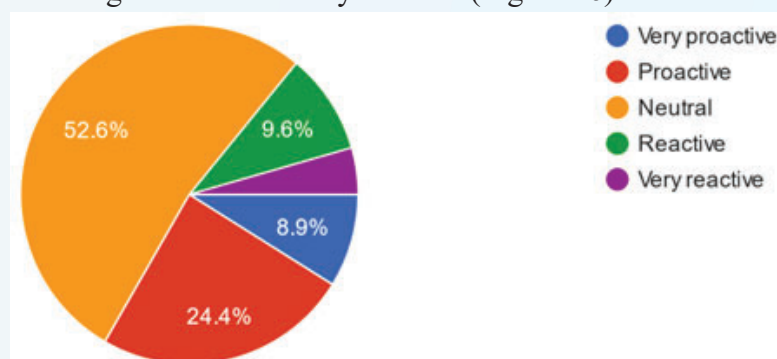


Figure 16: Role of the government

4.7. Training and Capacity Building

Sufficiency Knowledge and Expertise about Blockchain Technology

A minor portion of the respondents (2.2%) strongly agrees that there is sufficient knowledge and expertise, while 38.5% of the respondents align with this fact. 25.9% of respondents are neutral. 25.9% of respondents disagree, while 7.4%, strongly disagree (Figure 17).

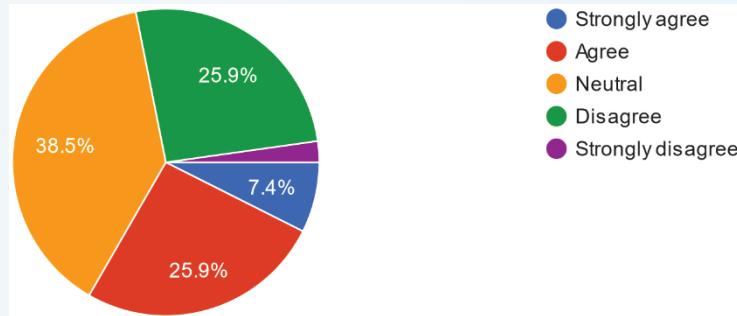


Figure 17: Existence of sufficient knowledge and expertise about blockchain technology

Training Programs Necessary to Promote Blockchain Adoption in Tanzania

32.47% of the respondents cited that basic blockchain technology courses are necessary to promote the adoption of blockchain technology. Regulatory and compliance training follows with 23.25%. The third and fourth training programs are advanced technical training (21.77%) and business application workshops (21.03%). A small percentage of respondents (1.48%) indicated they don't know (Figure 18).

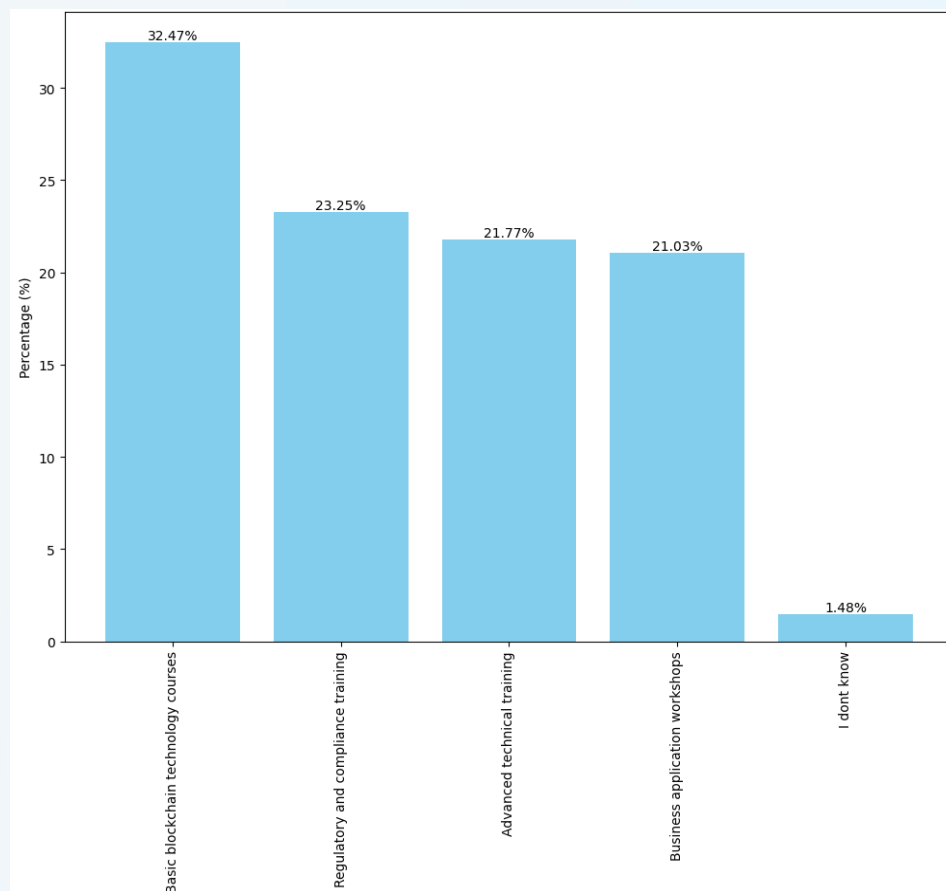


Figure 18: Training programs necessary to promote blockchain adoption in Tanzania

Discussion

The results from this study reveal significant interest in applying blockchain technology in transactions, record keeping, and identity verification. This demonstrates that the financial sector could and can be one of the primary beneficiaries of this technology. The distributed nature of blockchain reduces the dependence on third parties. This reduces or eliminates the bureaucratic inefficiencies dominant in financial transactions and record management (Kombe et al., 2019; Swan, 2015). Blockchain technology in Tanzania can potentially streamline the financial services by enhancing transparency, efficiency, and trust.

On the other hand, blockchain technology implementation in Tanzania is short of barriers. Main barriers include technological, regulatory, and social challenges. The respondents identified technological infrastructure limitations, such as limited internet access and unstable electricity, as major challenges to widespread blockchain adoption (Emmanuel Constantine & Kwang Ho, 2015).

The primary source of blockchain technology awareness is the internet and educational institutions. These channels can be leveraged for broader awareness campaigns and technical training programs to enhance blockchain literacy (Mnyawi, 2022). Despite the level of awareness of blockchain technology being relatively high but the depth of understanding is still limited. Only 5.2% indicated they have advanced knowledge in blockchain technology. This suggests that more educational initiatives are needed.

A well-informed workforce is very important for implementing and maintaining blockchain applications effectively (Natália Likavčanová, 2019). The observed knowledge gap can be a stumbling block to blockchain adoption. To fill this gap requires establishing blockchain modules in academic institutions and regular training programs.

Conclusion

The study findings reveal that blockchain technology offers potential benefits, including enhanced transparency, security, and efficiency for transactions, record management, and supply chain applications. These improvements can address some of the inefficiencies in the current systems. The adoption of blockchain faces significant barriers, including limited internet access, unreliable power, high initial costs, and a lack of regulatory framework. These barriers hinder widespread implementation of blockchain.

Limited awareness of blockchain indicates a need for educational initiatives to improve blockchain literacy. Priority must be given to technological infrastructure development, regulatory reforms and capacity building. This will ensure a successful adoption of blockchain technology.

It is very essential for the government and other stakeholders to collaborate to create a suitable environment for effective application of blockchain.

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Examining the Effects of Financial Motivation on Projects Performance in Dodoma City Council, Tanzania

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Abstract

This study aimed to examine the effects of financial motivational rewards on project performance within Dodoma City Council, Tanzania. A case study design was employed, targeting a population of employees directly involved in project work, decision-making, and oversight within the council. A randomized sample of 100 respondents was selected using Yamane's formula, including 90 for survey questionnaires and 10 for interviews. Data collection involved structured questionnaires and semi-structured interviews to gather quantitative and qualitative insights. The analysis was conducted using logistic regression and chi-square methods to assess the impact of financial motivation on project outcomes, while qualitative data were subjected to content analysis. The findings revealed that overpayment, with a coefficient of 0.421 and an odds ratio of 2.047, significantly enhanced project performance, indicating that employees receiving overpayment were about two times more likely to achieve higher performance. Bonuses on salary had an even stronger impact, with a coefficient of 1.3210 and an odds ratio of 4.01, suggesting a significant positive relationship with project success. Conversely, profit sharing and stock options showed a weaker and statistically insignificant relationship with project performance ($p = 0.201$). The study concludes that structured financial incentives, particularly overpayment and performance-based bonuses, are crucial for enhancing project outcomes in the public sector. It recommends implementing transparent and consistent financial reward systems, alongside non-financial incentives like recognition programs and professional development, to cater to diverse motivational needs and improve project performance. Regular evaluation of these strategies is necessary to ensure sustained employee motivation and organizational productivity.

Keywords: Financial Motivation, Overpayment, Bonuses, Profit Sharing, Stock Options, Projects Performance

1.0 Introduction

Project performance in the public sector is a critical aspect that influences the socio-economic development of a region. In Tanzania, the Dodoma City Council has embarked on various developmental projects to enhance infrastructure, health, education, and other essential services. However, these projects often face challenges, including delays, budget overruns, and substandard quality (Mkwizu & Chiwangu, 2021). Financial motivation has been identified as a crucial factor influencing project performance, as it directly impacts the commitment, productivity, and morale of the project team members (Karanja & Ngugi, 2022). This study

aims to examine the effects of financial motivation on project performance in Dodoma City Council, Tanzania, and explore the various dynamics involved in this relationship.

Financial motivation refers to the use of monetary rewards to encourage employees to perform better and achieve organizational goals (Mugwe et al., 2021). In the context of project management, financial motivation includes salaries, bonuses, allowances, and other financial incentives that aim to increase employee satisfaction and commitment (Muthike & Shalle, 2022). According to recent studies, motivated employees are more likely to exhibit high performance, which results in timely completion of projects, adherence to budgetary allocations, and delivery of high-quality outputs (Ambe & Maleka, 2023).

In Dodoma City Council, the implementation of various projects has been marred by inefficiencies attributed to low levels of financial motivation among project staff. Public sector employees often face challenges such as irregular salary payments, lack of performance-based bonuses, and inadequate allowances (Mkude & Mulyungi, 2021). These factors contribute to low morale and high turnover rates, which negatively affect project performance (Matiku & King'ori, 2023). Understanding the relationship between financial motivation and project performance is essential for improving project outcomes in Dodoma City Council.

Dodoma City Council, the capital of Tanzania, is a hub of political, economic, and social activities. Over the past decade, the council has undertaken numerous projects, including road construction, water supply, health facilities, and educational infrastructure (Ngowi & Mahanga, 2022). Despite the significance of these projects, several have faced performance challenges, such as delays, cost overruns, and failure to meet quality standards (Chuma & Lwiza, 2021). For instance, the construction of key road networks has experienced delays due to inadequate funding and lack of proper motivation for the workforce (Nyang'anyi et al., 2023).

Studies have shown that poor project performance in Dodoma City Council is closely linked to inadequate financial motivation (Mwinuka & Maro, 2022). Project staff, including engineers, planners, and administrative personnel, often express dissatisfaction with the financial rewards they receive. This dissatisfaction leads to low morale, decreased productivity, and a lack of commitment to project goals (Mbowe & Mlowe, 2021). Consequently, projects do not meet their intended objectives, affecting the overall development of Dodoma City Council.

Employee performance is a key determinant of project success. Financial motivation plays a significant role in enhancing employee performance by providing incentives that encourage employees to work harder and achieve project goals (Mwambuli & Zuberi, 2021). According to recent studies, financial rewards such as bonuses, salary increments, and allowances positively impact employee performance, leading to improved project outcomes (Mwinuka & Maro, 2022). In Dodoma City Council, financial motivation can be an effective tool for enhancing the performance of project teams.

Research has indicated that employees who perceive their financial rewards as fair and commensurate with their efforts are more likely to be motivated and committed to their work (Nyang'anyi et al., 2023). This motivation translates into increased productivity, innovation, and a willingness to go above and beyond their job requirements. In contrast, inadequate financial motivation results in low morale, high absenteeism, and a lack of commitment, which negatively impacts project performance (Mwinuka & Maro, 2022). Addressing the issue of financial motivation is crucial for improving employee performance and, consequently, project outcomes in Dodoma City Council.

Project performance is influenced by various factors, including resource availability, stakeholder involvement, and project management practices. Financial motivation is a critical factor that directly affects the productivity and commitment of project team members (Muthike & Shalle, 2022). Studies have shown that projects with well-motivated teams are more likely to meet their objectives, stay within budget, and be completed on time (Ngowi & Mahanga, 2022). In Dodoma City Council, enhancing financial motivation can lead to significant improvements in project performance.

The relationship between financial motivation and project performance is supported by several empirical studies. For instance, Ambe and Maleka (2023) found that financial incentives significantly improve project performance by enhancing employee satisfaction and reducing turnover rates. Similarly, Chuma and Lwiza (2021) noted that projects with adequate financial motivation experience fewer delays, higher quality outputs, and better stakeholder satisfaction. In Dodoma City Council, addressing the financial motivation of project teams can be a strategic approach to improving project performance and achieving developmental goals.

While financial motivation is recognized as a key factor in enhancing project performance, several challenges hinder its implementation in Dodoma City Council. One major challenge is the limited budgetary allocation for public sector projects, which restricts the availability of funds for financial incentives (Mwinuka & Maro, 2022). Additionally, bureaucratic procedures and delays in the disbursement of funds further complicate the provision of financial motivation to project teams (Mkude & Mulyungi, 2021).

Another challenge is the lack of a clear and transparent system for rewarding employees based on their performance (Nyang'anyi et al., 2023). In some cases, financial incentives are distributed arbitrarily, leading to perceptions of unfairness and favoritism. This undermines the motivation of project team members and negatively affects project performance (Matiku & King'ori, 2023). Addressing these challenges requires the development of a robust framework for financial motivation that ensures fairness, transparency, and accountability in the allocation of

The expectancy theory of motivation, proposed by Victor Vroom in 1964, provides a theoretical framework for understanding the relationship between financial motivation and project performance (Vroom, 1964). According to the expectancy theory, employees are motivated to perform better when they believe that their efforts will lead to desired outcomes, such as financial rewards (Vroom, 1964). This theory is based on the premise that motivation

is a function of expectancy (the belief that effort will lead to performance), instrumentality (the belief that performance will lead to rewards), and valence (the value placed on the rewards) (Lunenburg, 2021).

In the context of Dodoma City Council, the expectancy theory suggests that project team members will be more motivated to perform if they believe that their efforts will be rewarded with financial incentives. When employees perceive a clear link between their performance and financial rewards, they are more likely to exert effort, leading to improved project performance (Mwinuka & Maro, 2022). The expectancy theory provides a valuable framework for designing financial motivation strategies that enhance project performance in Dodoma City Council.

While numerous studies have been conducted on the importance of financial motivation in enhancing project performance, there was still a noticeable gap in understanding this relationship within the context of Tanzanian public sector projects, particularly in Dodoma City Council. Existing research, such as that by Mkude and Mulyungi (2021) and Mwinuka and Maro (2022), had primarily focused on general factors affecting project performance or examined different public sector settings without delving deeply into specific financial motivation strategies that could be most effective. Additionally, many studies had concentrated on other regions or sectors, leaving Dodoma City Council underexplored despite its growing importance as Tanzania's administrative capital (Nyang'anyi, Mbowe, & Mlowe, 2023). This gap was further highlighted by Ngowi and Mahanga (2022), who pointed out the need for localized studies to understand the impact of financial incentives on project success within this specific context. The purpose of this study was to address these gaps by examining the effects of various financial motivation strategies on the performance of public sector projects within Dodoma City Council. This research aimed to generate practical insights that could inform policy and management practices, ultimately leading to improved project outcomes and sustainable development in Tanzania's public sector.

2.0 Empirical Literature Review

Various studies across different parts of the world have examined on the effects of financial motivation on projects performance. The following is the empirical literature review.

Shahid et al. (2020) investigated the impact of motivational factors on motivation of Punjab Police in India. The results indicated that financial and non-financial incentives such as working conditions, opportunities for professional development, peer/fellow relationships, bonuses, salary, and organizational policies significantly impacted the motivation of the police force. In similar vein, Anisya, Supriyanto, and Ekowati (2021) studied the on the effect of motivation on staff performance through organizational culture in Indonesia. The findings indicated that monetary employee motivation had a direct and significant impact on performance. Further, employee motivation had a direct and significant impact on organizational culture, organizational culture had a direct impact on performance, and organizational culture mediated the relationship between employee motivation and

performance. It was further clarified that understanding what motivates employees is essential for all employers to enhance productivity of the organization (Alhmoud & Rjoub, 2019).

In the study by Adebayo (2016), used a survey of 150 project managers to uncover the Effect of Employee Motivation on Projects Performance in the Nigerian Oil and Gas Industry. After analysis it was indicated that financial incentive was positively related to projects performance. Furthermore, the study revealed that job satisfaction, organizational support, opportunities for growth, recognition and leadership style owe the greatest impact in performance. On top of that, Kiprop (2017) provided motivational tactics for Kenya's public sector employees when assessed the level of motivation and current motivating techniques in the government sector. The results aligned with the study theory by Maslow's 1943 that employees were motivated hierarchically starting from physiological to self-actualization. In that regard physiological includes monetary motivation.

In addition, Msirikale (2021) investigated the Effect of Motivation on Employee Performance in Tanzania Police Force. The findings revealed that employees in Criminal Investigations Department in Dar es Salaam lacked motivation in terms of perceived justice, monetary motivation, and non-monetary motivation. The study recommended improvements in working conditions, promotion opportunities, equal treatment, and the transparency of the promotion process to enhance employee motivation and performance.

3.0 Methodology

3.1 Research Design and Setting

A case study design was used to collect in-depth information related to the effects of financial motivation on project performance. The physical setting of the study was Dodoma City Council, chosen due to its diverse range of projects, including infrastructure development, public services, community initiatives, and the construction of ministry and government offices at Magufuli City in Mtumba. This setting provided a rich context for examining the impact of financial incentives on project success within a rapidly developing administrative capital.

3.2 Targeted Population and Sample Size

The population of the study encompassed employees from Dodoma City Council who were directly involved in project work, decision-making, and oversight within the council. A randomized sample size of 90 respondents was obtained using Yamane's formula to ensure representativeness and statistical accuracy. Additionally, 10 purposively selected individuals were included for interviews to provide deeper insights into the study's objectives. Hence, the total sample size for this study was 100 individuals, combining both the randomized and purposive samples to capture a comprehensive view of the effects of financial motivation on project performance.

3.3 Data Collection Methods

The Qualitative data were gathered through semi-structured interviews conducted with 10 respondents. Each interview session lasted approximately 10 minutes and included 3 items. Prior to the interviews, respondents were asked for consent to record the sessions for transcription and analysis purposes. Additionally, a Likert scale questionnaire consisting of 15 items and using a five-point ranking system was developed, tested, and administered to a sample of 100 respondents for research questions one, two, and three. The collected data were then analyzed based on their nature.

3.4.2 Data Analysis

Logistic Regression Analysis was used to model the relationship between a binary outcome variable (such as project success or failure) and one or more predictor variables (such as employee motivation levels). This statistical method allowed the researcher to assess the impact of employee motivation on project performance while controlling for other relevant factors. In addition, content analysis was conducted on the qualitative data collected through semi-structured interview checklists. This process involved transcribing the recorded audio, which was then shared with respondents for verification to correct any potential errors. The data were subsequently edited, tabulated, and presented using thematic summary tables and narrative descriptions. The researcher also engaged in reflective moments to internalize, translate, search for patterns, and link codes to ensure a thorough analysis. This comprehensive approach provided both quantitative and qualitative insights into how financial motivation influences project performance in Dodoma City Council.

3.5 Validity and Reliability of Data

The reliability of the Likert scale questionnaire was determined using the Test-retest method to confirm the consistency of the instruments. By administering the same set of questions on two separate occasions, the researcher was able to compare the scores of the responses to identify consistency or deviations. In cases where deviations were detected, adjustments were made to the relevant parameters to ensure the reliability of the data collection instruments. To enhance validity, the researcher engaged two academic staff members as experts to assess the items on the data collection tools. The feedback and suggestions from these experts were incorporated to refine the tools. Additionally, the tools were piloted with a selected portion of the population that was not included in the final sample, allowing for further adjustments and improvements before the main data collection phase.

3.6 Ethical Consideration

Ethical considerations in this study included ensuring participant accountability and protecting their rights. Participants were guaranteed privacy, anonymity, confidentiality, and freedom from harm, treachery, or deception. The researcher was committed to treating all individuals involved in the research process with respect and upheld their rights throughout the study. By adhering to these ethical principles, the study aimed to maintain the integrity of the research process and safeguard the well-being of all participants.

4.0 Results

The table presents the results of a multiple logistic regression analysis examining the effect of financial motivational rewards on project performance within Dodoma City Council, conducted at a 0.05 significance level. Firstly, looking at the variable Overpayment, the coefficient (Coef.) of 0.421 indicates a positive relationship with project performance. This is supported by the Odds Ratio of 2.047, suggesting that individuals receiving overpayment are about 2 times more likely to have higher project performance compared to those not receiving overpayment. The associated z-value of 2.44 is statistically significant ($p = 0.026$), reinforcing the impact of overpayment on project performance. Secondly, regarding Profit Sharing and Stock Options, the coefficient of 0.2122 and the Odds Ratio of 1.695 suggest a positive but weaker relationship with project performance, although the z-value of 3.83 is not statistically significant ($p = 0.201$) at the 0.05 level. Lastly, the variable Bonus on Salary shows a strong positive relationship with project performance, as indicated by the coefficient of 1.3210 and the high Odds Ratio of 4.01.

The associated z-value of 18.54 is highly significant ($p = 0.000$), indicating that individuals receiving bonuses on salary are significantly more likely to exhibit higher project performance. The constant term in the regression model (-2.9631) represents the expected log odds of low project performance when all other variables are zero. The model's overall goodness of fit is supported by the LR Chi2 value of 108.4 ($p = 0.000$) and a Pseudo R2 of 0.53, suggesting that 53% of the variability in project performance can be explained by the included variables. In conclusion, the results indicate that financial motivational rewards, particularly overpayment and bonuses on salary, have a significant positive effect on project performance within Dodoma City Council.

Table4.1: Multiple Logistic Regression Analysis

Project performance	Coef.	Odds Ratio	z	P>|z|
Low(base outcome)				
<i>Overpayment</i>				
Yes	0.421	2.047	2.44	0.026
No (Reference)				
<i>Profit Sharing and Stock Options</i>	0.2122	1.695	3.83	0.201
Yes				
No (Reference)				
<i>Bonus on Salary</i>				

Yes	1.3210	4.01	18.54	0.000
No (Reference)				
Constant	-2.9631	.04815	-2.223	0.000
Number of observation = 109 LR Chi2(3) = 108.4				
Prob > Chi2 = 0.000 Pseudo R2 = 0.53				

Source: Authors compilation from STATA 17

On the other hand, results from interview suggested that financial motivation impact employees more positively than non-financial motivation in different wings (Shahid et al., 2020). Positively, offering financial incentives such as bonuses, performance-based pay, or rewards for meeting project milestones can motivate employees to work harder as summarized in the table below.

Table 4.2: Interview summary on question on; what are the effects of financial motivation on projects performance?

No.	Level	Findings
1.	Respondent A.	Financial motivation lead to higher of production because all people need money Help to complete a work at a time
2.	Respondent B.	Financial motivation increase quality and quantity of production and commitment on the project
3.	Respondent C.	Financial motivation increase commitment and productivity Financial motivation increases employees morale
4.	Respondent D.	Financial motivation increases employees' morale because employee is ensured to meet the obligations which need money for family and relatives.
5.	Respondent E.	Financial motivation encourage employees to work tirelessly which in turn increases productivity. By the way money is so good to all it reduce tardiness at workplace. Also it can help to meet organizational goals at a time
6.	Respondent F.	Don't like financial motivation. Financial motivation is not good at all, money can be reason for deviation from employees' rights

		It's good to be motivated by the challenging task to grow than money.
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Source: Interview Session, (2024)

The study findings are supported by Gati and Atambo (2017) that fair compensation without overpayment plays a crucial role in motivating team members and boosting morale in high-performance projects. In similar vein, Anisya et al. (2021) indicated that monetary employee motivation had a direct and significant impact on performance. Further, employee motivation had a direct and significant impact on organizational culture, organizational culture had a direct impact on performance, and organizational culture mediated the relationship between employee motivation and performance.

When individuals feel that they are being compensated fairly for their contributions, they are more likely to remain engaged, committed, and motivated to deliver their best work. This positive reinforcement lead to higher productivity levels and overall project success (Respondent A, Interview Session, 2024). For instance, employees working on a software development project are more likely to be motivated when they feel that their efforts are being fairly compensated to meet their family obligations without any overpayments (Respondent D, Interview Session, 2024).

Specifically, 44 out of 70 High performance projects (62.86%) did not have overpayment, compared to 21 out of 39 Low performance projects (53.85%) without overpayment. Similarly, Profit Sharing and Stock Options show a significant association with project performance, with a chi-square value of 52.7761 and a p-value of 0.00. This entails that when employees are offered profit sharing and stock options, they are incentivized to work towards the success of the projects they are involved in (Respondent A, Interview Session, 2024). The potential for financial gain based on project performance encourages them to put in extra effort, be more productive, and strive for excellence. This motivation leads to increased dedication and commitment to achieving project objectives within the council. Respondent E, once claimed

“Financial motivation encourages employees to work tirelessly which in turn increases productivity. By the way money is so good to all it reduces tardiness at workplace. Also, it can help to meet organizational goals at a time” (Respondent E, Interview Session, 2024).

In that regard, if Dodoma City Council implements a profit-sharing program where a percentage of the profits generated from successful projects was distributed among employees involved, it could inspire them to work collaboratively towards project success as they directly benefit from the outcomes.

Through offering stock options or profit-sharing opportunities, Dodoma City Council aligned the interests of its employees with the overall objectives of the organization. Kiprop (2017) asserted that when employees have a stake in the success of projects through ownership or profit-sharing arrangements, they are more likely to prioritize activities that contribute to project success and organizational growth. This is also agreed with when employees with

financial stake in the success of the company, they are more likely to work towards achieving the company's goals. This alignment fosters a sense of ownership and responsibility, encouraging employees to make decisions that benefit the company as a whole. In the study by Adebayo (2016) it was put money that job satisfaction, organizational support, opportunities for growth, recognition and leadership style owe the greatest impact in performance.

In High performance projects, 42 out of 70 (60%) had Profit Sharing and Stock Options, compared to 19 out of 39 (48.72%) in Low performance projects. The presence of Bonus on Salary also appears to influence project performance, with a chi-square value of 24.3114 and a p-value of 0.03. This entails that when employees know that there is a financial incentive tied to their performance, they are more likely to put in extra effort to meet or exceed project goals. This heightened motivation results in higher levels of engagement, dedication, and commitment to the project. For example, if a project team at Dodoma City Council is offered a bonus for completing a project ahead of schedule or under budget, team members are likely to work collaboratively and efficiently towards achieving this goal. The prospect of receiving a bonus serves as a powerful motivator that drives individuals to perform at their best. Bonuses on salary can also lead to enhanced productivity and goal alignment within project teams at Dodoma City Council. Through tying bonuses to specific project milestones or outcomes, organizations can ensure that employee efforts are aligned with overarching project objectives. This alignment helps focus individual actions towards achieving collective goals, thereby improving overall project efficiency.

5.0 Discussion

The findings from the logistic regression analysis examining the effects of financial motivational rewards on project performance within Dodoma City Council align with and expand upon existing literature in several ways. The study indicated that specific financial incentives, such as overpayment and bonuses on salary, have a significant positive effect on project performance. This is consistent with the results of Shahid et al. (2020), who found that financial incentives, including salary and bonuses, significantly impacted the motivation of the Punjab Police in India. Similarly, Anisya, Supriyanto, and Ekowati (2021) highlighted the direct and significant impact of monetary motivation on staff performance in the context of Indonesian organizations. Their study further revealed that a strong organizational culture could mediate the relationship between employee motivation and performance, suggesting that fostering a culture that supports financial rewards could enhance project outcomes.

The positive relationship found between overpayment and project performance in Dodoma City Council is also supported by Adebayo (2016), who discovered a significant correlation between financial incentives and project performance in the Nigerian oil and gas industry. Adebayo's findings underscored that not only financial rewards but also factors like job satisfaction, organizational support, and leadership style played crucial roles in enhancing project outcomes. This reinforces the idea that while financial motivation is critical, it should be complemented by other motivational factors to maximize performance.

The logistic regression analysis further showed that the odds of achieving higher project performance were significantly increased when employees received bonuses on their salaries. This aligns with Kiprop's (2017) study, which indicated that public sector employees in Kenya were motivated by monetary incentives that met their basic physiological needs, as described in Maslow's hierarchy of needs. Kiprop's findings affirm that financial rewards are foundational to motivating employees, suggesting that such incentives are necessary to ensure employee satisfaction and enhanced performance.

The findings also mirror those of Msirikale (2021), who investigated the effect of motivation on employee performance in the Tanzanian Police Force. Msirikale's research identified a lack of financial motivation as a key issue affecting performance and recommended improvements in monetary rewards, promotion opportunities, and working conditions to enhance motivation and performance. This emphasizes the importance of ensuring perceived fairness and transparency in motivational strategies, which is crucial for sustaining high levels of project performance.

Despite the positive impact of financial rewards, the study also found that while profit sharing and stock options had a positive relationship with project performance, this relationship was not statistically significant. This could suggest that while these types of financial incentives are beneficial, their effectiveness may depend on the specific organizational context or be more relevant to private sector or profit-driven environments. Alhmoud and Rjoub (2019) also stressed the importance of understanding what specific motivational strategies are most effective for different employee groups to enhance productivity.

Overall, the findings from this study affirm the critical role that financial motivation plays in enhancing project performance, particularly in a public sector setting like Dodoma City Council. They align with a broad body of literature from diverse contexts, including India, Indonesia, Nigeria, Kenya, and Tanzania, underscoring the universal relevance of financial incentives in motivating employees and improving organizational outcomes. These results suggest that policymakers and managers within Dodoma City Council and similar public sector organizations should prioritize financial motivation strategies, such as overpayment and salary bonuses, to improve project performance. Moreover, to ensure the effectiveness of these strategies, they should be implemented alongside supportive organizational cultures, fair treatment, and opportunities for professional development, as highlighted in the studies by Anisya et al. (2021) and Msirikale (2021).

6.0 Conclusion

In conclusion, this study provides compelling evidence that financial motivational rewards, specifically overpayment and bonuses on salary, have a significant and positive impact on project performance within Dodoma City Council. The findings demonstrate that employees who receive these financial incentives are more likely to achieve higher levels of project success, highlighting the critical role that monetary rewards play in motivating employees and enhancing their productivity. The strong association between financial motivation and project performance underscores the importance of strategically implementing financial rewards as a means to drive better outcomes in public sector projects. While profit-sharing and stock options

showed a positive but weaker relationship with project performance, the overall results suggest that direct financial incentives like overpayment and bonuses are more effective in the context of public sector projects. These findings reinforce the notion that employee motivation is a multifaceted concept that requires a tailored approach to meet the specific needs of the workforce. The significant influence of financial rewards on project performance calls for continuous assessment and optimization of motivational strategies to maintain high levels of employee engagement and project success.

7.0 Recommendations

Based on the findings of this study, several recommendations are put forward to enhance project performance through effective financial motivation strategies. Firstly, Dodoma City Council should prioritize implementing structured financial incentives, such as overpayment and performance-based bonuses, to motivate employees and improve project outcomes. These incentives should be aligned with clear performance metrics and delivered consistently to ensure employees remain motivated to achieve high standards. Secondly, management should consider complementing financial rewards with non-financial incentives such as recognition programs, professional development opportunities, and a supportive work environment to address the diverse motivational needs of employees. Additionally, it is essential to ensure transparency and fairness in the distribution of financial rewards to foster trust and morale among employees. Regular evaluations of the effectiveness of these motivational strategies should be conducted to make necessary adjustments and ensure that they are meeting the desired outcomes. Finally, it is recommended that Dodoma City Council engages in continuous dialogue with employees to understand their motivational preferences and adapt strategies accordingly, ensuring that motivational programs remain relevant and impactful over time.

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Assessing Customer Satisfaction in Tanzania's Non-Life Public Insurance Sector: A SERVQUAL Model Approach at the National Insurance Corporation

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Abstract

This research explores the assessment of service quality's impact on customer satisfaction within Tanzania's non-life public insurance sector, focusing on the National Insurance Corporation (NIC). The study addresses assessment of the service quality on customer's satisfaction in non-life public insurance sector. The research design adopts a cross-section approach to provide a comprehensive understanding of the research problem. The study's population comprises 120 employees, selected using a random sampling technique. This research aims to contribute valuable insights to enhance service quality and customer satisfaction within Tanzania's non-life public insurance sector. The study found that customers who were accessing non-life public insurance services at NIC were satisfied with the timeliness of responding to their problems or enquires, this is due to the fact that the management of NIC have a specific and automated system known as Customer Relationship Management (CRM) where customers can submit their enquiries or make contacts through the system and the management responds immediately after receiving the submitted enquiries or problems from the customer. Also, the study found that few of the respondents were dissatisfied with the reliability of services offered by the National Insurance Corporation (NIC) compared to the customers who were satisfied. NIC can give customers access to information, product or service catalogs, NIC provides visually attractive, offices, equipment, and materials to customers, NIC provides a variety of entertainment facilities to customers, NIC has favorable terms and conditions to customers. The study concluded that increase in responsiveness, reliability, tangibles, empathy and assurance in delivering non-life insurance services to customers increases the level of satisfaction among the customers. The study recommended that, NIC should conduct specialized training programs focused on developing empathy and emotional intelligence. This includes active listening, recognizing emotional cues, and responding appropriately to customer emotions.

Keywords: Customer's Satisfaction, Non-Life Public Insurance Sector, Service Quality

1. Introduction

Non-life public insurance refers to insurance policies that cover all types of risks other than life insurance. This includes property, liability, health, and accident insurance provided by government or public entities (Rhena, 2021). Non-life public insurance covers damage or loss of property due to events like fire, theft, natural disasters, protects individuals and businesses from legal liabilities due to accidents, injuries, or negligence, costs associated with accidents, including medical expenses and loss of income (Fheme, 2020). At the global level; non-life public insurance plays a crucial role in the global economy and society in various ways; helps individuals and businesses manage risks associated with property damage, liability, health issues, and accidents. By providing a safety net, it ensures that unforeseen events do not lead to financial ruin (Bennkn, 2019). Non-life public insurance programs stabilize economies among the developing and developed countries by spreading risk across a large pool of participants in economic booming among the nation members of the United Nations. This can help prevent economic shocks from natural disasters, major accidents, or health crises (UN, 2022).

Also, some of the African countries like South Africa, Malawi, Zimbabwe, DR Congo, Egypt and Somalia are prone to natural disasters such as floods, droughts, and earthquakes whereby public insurance programs help mitigate the financial impact of these events on individuals, businesses, and governments, facilitating quicker recovery and rebuilding efforts (Dannel, 2016). Non-life public insurance, such as crop and livestock insurance, provides a safety net for farmers against adverse weather conditions, pests, and diseases, ensuring food security and economic stability (ibid). Non-life public insurance programs help increase financial inclusion by providing access to insurance products for low-income and marginalized African communities that empowers individuals to manage risks and build financial resilience (Haknni et al, 2019).

In Tanzania, non-life public insurance plays a crucial role by protecting businesses from risks related to property damage, theft, and liability, public insurance encourages entrepreneurship and investment (Shenn, 2016). This drives economic growth, job creation, and poverty reduction. Tanzania is susceptible to various natural disasters, including floods, droughts, and earthquakes. Public insurance helps mitigate the financial impact of these events, aiding in faster recovery and reducing the economic burden on affected communities and the government (Ghene, 2020). Public insurance programs in Tanzania, such as crop and livestock insurance, provide farmers with a safety net against adverse weather conditions, pests, and diseases, ensuring food security and economic stability.

Despite of this importance of non-life public insurance to the community, customer satisfaction in non-life public insurance faces several global challenges. These challenges often stem from the complexity of the insurance process, lack of transparency, slow claims handling, inadequate digital infrastructure, and regional disparities. Addressing these problems requires a concerted effort to enhance the customer experience across all touchpoints (Wissa, 2029). Different countries in the word have been faced with various problems associated with customers'

satisfaction on non-life insurance and they have tried to come up with various mitigation measures to curb the problems. For instance, insurance policies are often difficult to understand due to complex terms and conditions, poor digital infrastructures and insufficient, leading to poor online services have contributed to increase poor non-life insurance services provision in some of the developed and developing countries (Gwemen, 2021).

Various steps have been taken to solve the problem of customer dissatisfaction on non-life insurance services including simplifying policy documents and provide clear, concise explanations. Using plain language and visual aids to help customers understand coverage, exclusions, and the claims process (Wideer, 2020) invest in robust digital platforms, including websites and mobile applications, that allow customers to review their policies, report and file claims, and inquiring for customer services easily. Ensure these platforms are user-friendly and accessible across different devices.

Insurance in Tanzania for non-life is controlled by the Tanzania Insurance Regulatory Authority (TIRA) under the Insurance Act No. 10 of 2009 (the Insurance Act, 2009). TIRA oversees, supervises, regulates, and controls the insurance and reinsurance industry in Tanzania. The authority establishes and enforces national rules for the conduct of insurance and reinsurance industry (TIRA Report, 2022). People get general insurance to protect their economic resources. Other than life insurance, general insurance encompasses all types of insurance (Agnes et al., 2023). Consequently, according to the TIRA analysis, as a result of using such a strategy, the country enjoyed economic growth, albeit at a slower rate of 4.9% in 2021 compared to an average growth rate of 6.7% during the preceding five years (TIRA Report, 2022). General insurance covers property from fire, burglary, and other immovable property, among other things. Non-life or general insurance covers non-life things such as animals, agricultural produce, goods, factories, cars, and so on (Jones et al., 2017). Individual behavior losses are also covered by non-life insurance (Naik & Panicker, 2018). Therefore, through the Tanzania Insurance Management Authority, the National Insurance Corporation (NIC) has an impact on regulation of non-life insurance sector and , solvency monitoring-based regulations with few entry limitations have shown to be the most effective (TIRA Report, 2022). When it included restrictions on prices, availability, and profitability, it was more detrimental (Naik & Panicker, 2018).

Hence, in Tanzania, the assessment of service quality in the non-life public insurance sector is especially pertinent due to its potential impact on consumer trust and the overall growth of the industry. The study aims to identify specific challenges and opportunities within the Tanzanian context, offering actionable recommendations for policymakers, insurers, and other stakeholders to enhance service quality and, consequently, customer satisfaction.

2. Literature Review

2.1 Theoretical Literature Review

This part concerns with various theories involved in the study;

2.1.1 Service Quality Theory

The SERVQUAL Model, developed by Parasuraman, Zeithaml, and Berry in the 1980s, is a widely used framework to measure service quality by assessing the gap occurring between customer expectations and their perceptions of the actual service received (Zeithaml et al., 1993). According to (Gangil & Vishnoi, 2020) the model identifies five key dimensions of service quality including Reliability; explains the ability to perform the promised service dependably and accurately, Assurance; explaining the knowledge and courtesy of employees and their ability to convey trust and confidence, Tangibles; the appearance of physical facilities, equipment, personnel, and communication materials. Empathy; the provision of caring, individualized attention to customers and Responsiveness; the willingness to help customers and provide prompt service.

The service quality model involves in determining on how customers perceive or react on the new products or service offered by the company or seller. It reflects the organization's willingness to go the extra mile for customers. Also, it focuses on the care and attention that service providers extend to customers. It involves understanding customers' individual needs, showing empathy, and providing personalized services. According to (Kavitha et al., 2012) this model is typically assessed through a combination of customer expectations and perceptions. Customers are being asked to rate their expectations of service quality and their actual experiences (perceptions) across each of the five factors. The difference between expectations and perceptions provides insights into the quality-of-service delivery. Therefore, this model could be applied to evaluate the quality of services dimensions (reliability, responsiveness, assurance, empathy, and tangibles) provided by non-life public insurance. And the model has contribution on the influence of perceived service quality on customer loyalty in non-life public insurance in this study.

2.1.2 Expectancy – Disconfirmation Theory

The Expectancy-Disconfirmation Theory was first introduced by Richard L. Oliver in his 1980 article titled "A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions" describes that, this is psychological framework that describe individual perceptions and their actual experiences with a product, service, or situation (Oliver, 1980). According to study by (Tien et al., 2021) The expectations are influenced by factors such as prior experiences, marketing messages, word-of-mouth, and personal needs. Also, study by (Thangadurai & Rahim, 2015) described that the perceived Performance are After the actual experience with the product or service, individuals assess how well it performed compared to their initial expectations. This perceived performance is a subjective evaluation of the quality, efficiency, and overall outcome of the experience. The Expectancy-Disconfirmation Theory highlights the significance of managing customer expectations and delivering experiences that align with or exceed those expectations. It acknowledges that customer satisfaction isn't solely determined by the objective quality of a product or service but also by how well that product or service meets or surpasses initial expectations (Hennayake & Hennayake, 2017). Hence, this theory shows the relationship between customer expectations, perceived service performance, and satisfaction.

Therefore, these theories provide comprehensive understanding of service quality and customer satisfaction in the non-life public insurance.

3. Methodology

In this section, research design, population, sampling and sample size, data collection and analysis were presented thereof.

3.1 Research Design

The study used a cross-section research design method to guide the study. The study adopted the cross-section study design simply because it provides a snapshot of a particular moment, allowing researchers to identify patterns, relationships, and prevalence of certain characteristics or outcomes within the studied group (Kothari, 2016).

This study was guided by the following research questions;

- i. How does responsiveness of non-life public insurance facilitate customer needs?
- ii. How is the reliability of services to customers in non-life public insurance?
- iii. What are the tangibles of services to customers in non-life public insurance?
- iv. How does the empathy of service providers facilitate customer satisfaction?
- v. How is the assurance of services to customers in non-life public insurance?

3.2 Population and Sampling

3.2.1 Population

In this study, the targeted population was non-life insurance customers and staff at National Insurance Corporations (NIC) in Dar es Salaam, Tanzania. It is important to define the population from NIC clearly and accurately in research because the validity of the findings depends on how the sample represents the population. According to (NIC Tanzania, 2023) number of employees at headquarters in Dar es Salaam are 114 employees are among population of the study. Approximately number of customers at NIC more than 114 companies served.

3.2.2 Sampling and Sample Size

The study employed a simple random sampling technique to get a sample size from the study population by using a standardized sampling formula known as Yamane's sampling formula. 92 respondents were chosen to constitute a sample size.

3.3 Data Collection and Analysis

The main purpose of the study was to assess the service quality on customer's satisfaction in non-life public insurance sector in Tanzania. Hence, in order to ensure collection of data which is free from biasness, author used structured questionnaire and documentary review as the data

collection methods. Further, the data was analyzed using Probit linear regression model and descriptive statistics to address the research questions.

4. Results and Analysis

This part presented the findings and analysis of the study

4.1 Profiles of Respondents

The study intended to analyze sex of the respondents involved in the study with purpose of keeping gender equality and to discover the responses on the research questions between male and female. The findings showed that (59.6%) of the respondents were male and (40.4%) were female. Moreover, the study sought the description of the respondents by their age groups and findings revealed that majority (49.3%) of the respondents had age range of 21 – 30 years and few of them (5.3%) had age range of 41 – 50 years. Furthermore, the study sought the description of the respondents by their levels of education. findings divulge that majority of the respondents (64%) had bachelor degree education level. (13.3%) had master's degree, (12%) had tertiary education, (6.7%) had secondary education and (4%) had primary education.

Table 6. Profiles of Respondents

Parameters		Frequency	Percent (%)
Gender	Male	68	59.6
	Female	46	40.4
	Total	114	100.0
Age	21 - 30	58	50.9
	31 - 40	50	43.9
	41 - 50	6	5.3
	Total	114	100.0
Education Level	Primary education	3	4.0
	Secondary education	5	6.7
	Tertiary education	9	12.0
	Bachelor degree	48	64.0
	Master's degree	10	13.3

4.2 Responsiveness of Non-Life Public Insurance in Facilitating Customer Needs

This section sought to describe the responsiveness of the National Insurance Cooperation on providing nonlife insurance services to the customers in facilitating customer's expected needs from NIC. Analysis of the responsiveness of non-life public insurance services involved the analysis of timeliness of the response from the National Insurance Corporation (NIC) when addressing customer queries or concerns, effectiveness in handling customer inquiries and complaints, and customers' satisfaction on the overall responsiveness of the NIC in meeting customers' insurance-related needs.

4.2.1 Timeliness of the Response from the NIC when Addressing Customers' Queries or Concerns

Findings described in Figure 1 reveal that the majority (38.7%) of the respondents involved in the study commented that the timeliness of the response from the NIC when addressing customers' queries or concerns is good. This implies that customers who are accessing non-life public insurance services at NIC are satisfied with the timeliness of responding to their problems or inquiries, this is because the management of NIC has a specific and automated system known as Customer Relationship Management (CRM) where customers can submit their inquiries or make contacts through the system and the management responds immediately after receiving the submitted enquiries or problems from the customer.

Furthermore; the findings described in Figure 1 showed that the least (8%) of the respondents involved in the study commented that the timeliness of the response from the NIC when addressing customers' queries or concerns is very poor. Meaning that few of the customers who are accessing non-life public insurance services are not satisfied with the timeliness of receiving responses about their problems or concerns related to the services provided. Also, the findings showed that 36% of the respondents commented that timeliness of the response from the NIC when addressing customers' queries or concerns is fair, 10.7% commented that timeliness of the response from the NIC when addressing customers' queries or concerns is poor and 6.7% of the respondents commented that timeliness of the response from the NIC when addressing customers' queries or concerns is very good. Therefore, according to the customers' responses on the timeliness of the response from the NIC when addressing customers' queries or concerns it can be revealed that most of the customers accessing non-life public insurance are satisfied with the responsiveness of NIC staffs on facilitating customer needs specifically on timeliness of responses when addressing customers' problems or other concerns.

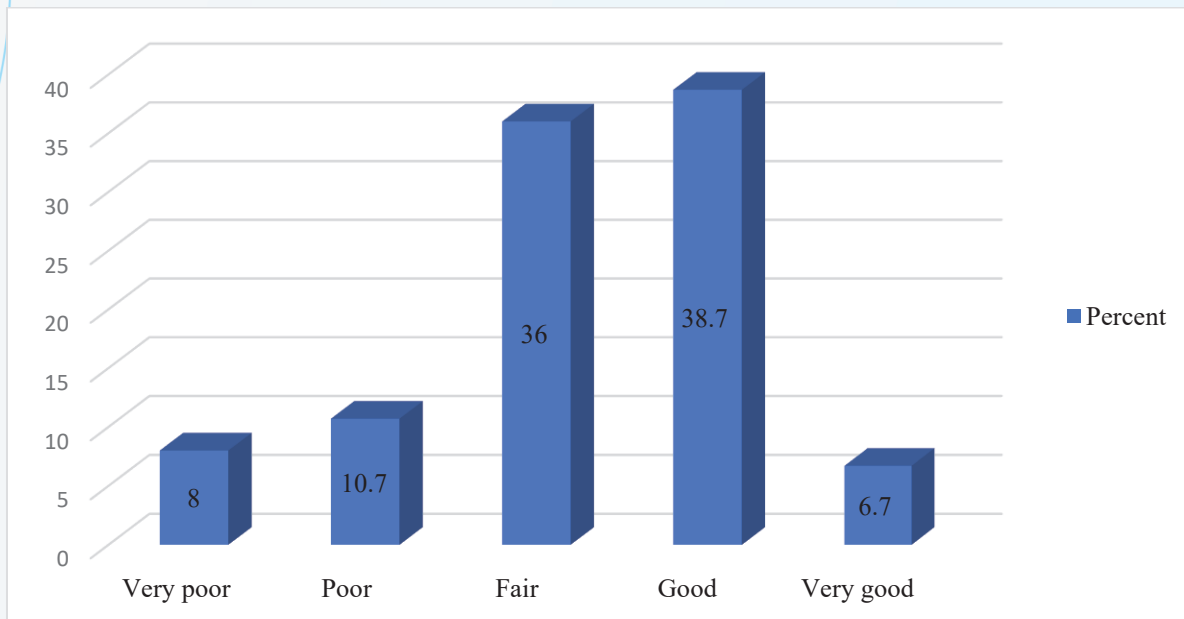


Figure 19. Respondents' responses on timeliness of response from the NIC when addressing customers' queries or concerns

4.2.2 Assessment of the Responsiveness of Non-Life Public Insurance in Facilitating Customer Needs

Findings in Table 2 describes that responsiveness of National Insurance Corporation (NIC) on provision of non-life public insurance services is high due to the fact that the provided insurance services facilitate meeting customers' needs. The study found that the National Insurance Cooperation (NIC) can tell customers exactly when services will be performed (Mean = 4.45; Standard deviation = 1.596). the magnitude of the mean and the standard deviation tells that majority of the respondents slightly agreed with the statement that the National Insurance Cooperation (NIC) can tell customers exactly when services will be performed that increase satisfaction among customers on the services provided by NIC.

Also, the findings of the study described in Table 2 revealed that NIC can give prompt customer service and attend to customers' needs/problems (Mean = 4.75; Standard deviation = 1.586), NIC employees are always willing to help customers in emergencies (Mean = 4.89; Standard deviation = 1.689), NIC employees are approachable and easy to contact (Mean = 4.89; Standard deviation = 1.689), NIC Employees' can communicate clearly with the customer (Mean = 4.89; Standard deviation = 1.689) and I am getting as quick a turnaround as I need on requests for new reports or data (Mean = 4.89; Standard deviation = 1.689). The magnitude of the mean and standard deviation of the statements tells that respondent slightly agreed that NIC can give prompt customer service and attend to customers' needs or problems, NIC employees are always willing to help customers in emergencies, NIC employees are approachable and easy to contact, NIC Employees' can communicate clearly with the customer, and customers gets quick a turnaround as they need on requests for new reports or data.

Table 7. Responses on the Responsiveness of Non-Life Public Insurance in Facilitating Customer Needs

Statement	No. Respondents	Mean		Std. Deviation
		Statistic	Std. Error	Statistic
The National Insurance Cooperation (NIC) can tell customers exactly when services will be performed	75	4.45	.184	1.596
NIC can give prompt customer service and attend to customers' needs/problems	75	4.75	.183	1.586
NIC employees are always willing to help customers in emergencies	75	4.89	.195	1.689
NIC employees are approachable and easy to contact	75	4.85	.150	1.302
NIC Employees' can communicate clearly with the customer.	75	4.97	.160	1.385
I am getting as quick a turnaround as I need on requests for new reports or data.	75	4.52	.173	1.501

4.2.3 Customers' Satisfaction with the Reliability of Services Offered by the NIC

Findings described in Figure 2 revealed that majority (44%) of the respondents involved in the study were satisfied with the reliability of services offered by the National Insurance Corporation (NIC). This imply that customers accessing non-life public insurance services at NIC are satisfied with the accuracy and consistency of information provided by the NIC regarding insurance policies and procedures and trust among the customers on NIC to deliver on its promises regarding insurance coverage. Also, the NIC management keeps trust among the customers by responding quickly to the insurance requests submitted within Seven (7) working days that increase the level of trust among the customers knowing that their grievances be taken into consideration within short time. Furthermore, the findings of the study described in Figure 2 revealed that 30.7% of the respondents involved in the study were neutral meaning that they had no choice weather were satisfied or dissatisfied. About 12% of the respondents were very satisfied with the reliability of services offered by the National Insurance Corporation (NIC), 9.3% of the respondents were dissatisfied and 4% were very dissatisfied.

The findings of the study tell that few of the respondents involved in the study were dissatisfied with the reliability of services offered by the National Insurance Corporation (NIC) compared to the respondents who were satisfied. It means that the accuracy and consistency of information provided by the NIC regarding insurance policies and procedures and trust among the customers on NIC to deliver on its promises regarding insurance coverage is high that increase the level of satisfaction among customers accessing services at NIC.

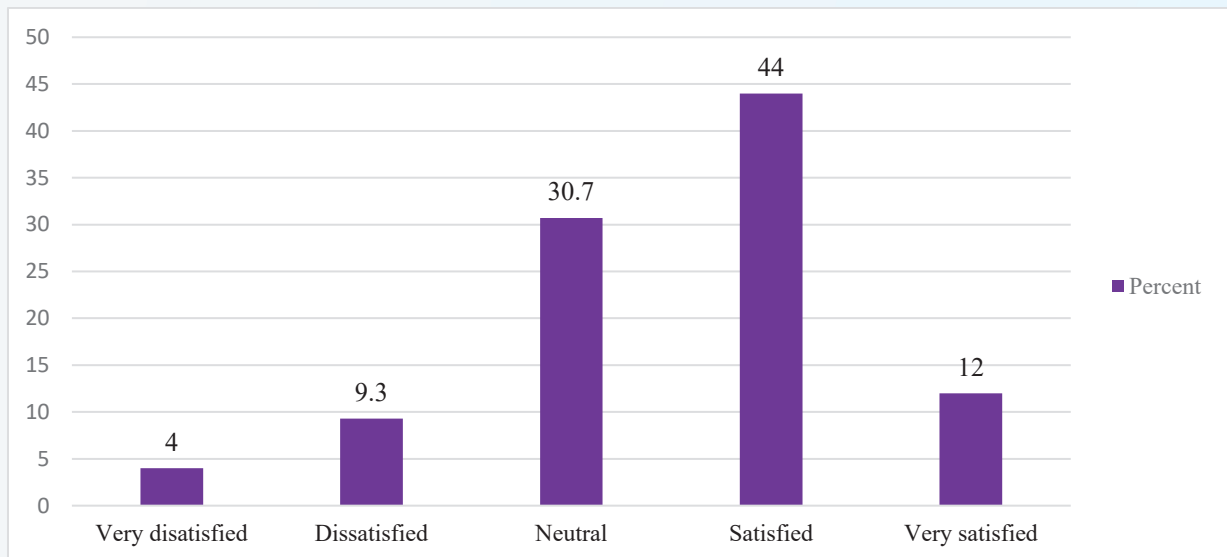


Figure 20. Customers' satisfaction with the reliability of services offered by NIC

4.3 Reliability of Services to Customers in Non-Life Public Insurance

Findings in Table 3 describes that the reliability of services to customers in non-life public insurance of National Insurance Corporation (NIC) is high due to the fact that the provided insurance services facilitate customers being satisfied with the services. The study found that the National Insurance Cooperation (NIC) has timely deliverance of insurance services to customers (Mean = 4.73; Standard deviation = 1.605). the magnitude of the mean and the standard deviation tells that majority of the respondents slightly agreed with the statement that the National Insurance Cooperation (NIC) has timely deliverance of insurance services to customers. Also, the findings of the study described in Table 3 revealed that NIC has been truthful (keeping to promises) to customers regarding insurance services (Mean = 4.68; Standard deviation = 1.749), NIC is dependable and consistent in solving customers' complaints (Mean = 4.64; Standard deviation = 1.666), NIC can perform services right the first time (Mean = 4.86; Standard deviation = 1.511), NIC can insist on error-free records (Mean = 4.51; Standard deviation = 1.545). The magnitude of the mean and standard deviation of the statements tells those respondents slightly agreed that the National Insurance Cooperation (NIC) has timely deliverance of insurance services to customers, NIC has been truthful (keeping to promises) to customers regarding insurance services, NIC is dependable and

consistent in solving customers' complaints, NIC can perform services right the first time, and NIC can insist on error-free records.

Table 8. Responses on the reliability of services to customers in non-life public insurance

Statements	No. of Respondent	Mean		Std. Deviation
		Statistic	Statistic Error	
The National Insurance Cooperation (NIC) has timely deliverance of insurance services to customers	75	4.73	.185	1.605
NIC has been truthful (keeping to promises) to customers regarding insurance services	75	4.68	.202	1.749
NIC is dependable and consistent in solving customers' complaints	75	4.64	.192	1.666
NIC can perform services right the first time	74	4.86	.176	1.511
NIC can insist on error-free records	75	4.51	.178	1.545

4.4 Tangibles of Services to Customers in Non-life Public Insurance

Findings from Table 4 describes that the tangibility of services to customers in non-life public insurance of National Insurance Corporation (NIC) is high due to the fact that the provided insurance services facilitate customers being satisfied with the services. The study found that NIC can give customers access to information, product/service catalogs (Mean = 5.03; Standard deviation = 1.786), NIC provides visually attractive, offices, equipment, and materials to customers (Mean = 4.67; Standard deviation = 1.359), and NIC provides a variety of entertainment facilities to customers (Mean = 5.83; Standard deviation = 8.323). The magnitude of the mean and standard deviation of the responses imply that customers agreed that NIC can give customers access to information, product/service catalogs, NIC provides visually attractive, offices, equipment, and materials to customers, and NIC provides a variety of entertainment facilities to customers.

Table 9. Responses on the tangibility of services to customers in non-life public insurance

Statements	No. Respondents	Mean	Std. Deviation

	Statistic	Statistic	Std. Error	Statistic
NIC can give customers access to information, product/service catalogs,	75	5.03	.206	1.786
NIC provides visually attractive, offices, equipment, and materials to customers	75	4.67	.157	1.359
NIC provides a variety of entertainment facilities to customers, etc.	75	5.83	.961	8.323

4.5 Empathy of Service Providers in Non-Life Public Insurance

Findings in Table 5 describes that the empathy of services to customers in non-life public insurance of National Insurance Corporation (NIC) is high due to the fact that the provided insurance services facilitate customers being satisfied with the services. The study found that NIC has favorable terms and conditions to customers (Mean = 4.73; Standard deviation = 1.465), NIC has operating hours convenient to all customers (Mean = 4.81; Standard deviation = 1.477), NIC has a sound loyalty program to recognize you as a frequent customer (Mean = 4.67; Standard deviation = 1.436), NIC makes efforts to understand specific customer needs (Mean = 5.00; Standard deviation = 1.366) and NIC apologizes for the inconvenience caused to customers (Mean = 4.97; Standard deviation = 1.294). The magnitude of the mean and standard deviation of the responses imply that customers strongly agreed that NIC has favorable terms and conditions to customers, NIC has operating hours convenient to all customers, NIC has a sound loyalty program to recognize you as a frequent customer, NIC makes efforts to understand specific customer needs and NIC apologizes for the inconvenience caused to customers.

Table 10. Responses on Empathy of service providers to customers in non-life public insurance

Statements	No. of respondents	Mean		Standard deviation
		Statistic	Std. Error	Statistic
NIC has favorable terms and conditions to customers.	74	4.73	.170	1.465
NIC has operating hours convenient to all customers	75	4.81	.171	1.477

NIC has a sound loyalty program to recognize you as a frequent customer	75	4.67	.166	1.436
NIC makes efforts to understand specific customer needs.	75	5.00	.158	1.366
NIC apologizes for the inconvenience caused to customers	75	4.97	.149	1.294

4.6 Assurance of Services to Customers in Non-Life Public Insurance

Findings in Table 6 describes that the assurance of services to customers in non-life public insurance services provided by the National Insurance Cooperation (NIC) is high due to the fact that the provided insurance services facilitate customers being satisfied with the services. The study found that the behavior of employees of NIC instills confidence in customers (Mean = 4.76; Standard deviation = 1.550), Employees' use of required skills and knowledge to answer customers' questions (Mean = 5.00; Standard deviation = 1.602), Employees of NIC are consistently courteous with customers (Mean = 4.63; Standard deviation = 1.402), Ability to provide variety of value-added services to customers (Mean = 4.71; Standard deviation = 1.667). The magnitude of the mean and standard deviation of the responses imply that customers strongly agreed that the behavior of employees of NIC instills confidence in customers, Employees' use of required skills and knowledge to answer customers' questions, Employees of NIC are consistently courteous with customers and NIC staffs have ability to provide variety of value-added services to customers.

Table 11. Response on the assurance of Services to Customers in Non-Life Public Insurance

Statements	No. Respondents	Mean		Std. Deviation
		Statistic	Std. Error	Statistic
The behavior of employees of NIC instills confidence in customers	75	4.76	.179	1.550
Employees' use of required skills and knowledge to answer customers' questions	75	5.00	.185	1.602
Employees of NIC are consistently courteous with customers	75	4.63	.162	1.402

Ability to provide variety of value-added services to customers	75	4.71	.192	1.667
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Specific Observations:

In the methodology section the author said Probit linear regression model will applied as the data analysis technique. However, Throughout the document no data analysis using Probit linear regression model. he **Probit regression model** is a type of regression used when the dependent variable is binary (i.e., it takes on two values, often coded as 0 and 1). It is commonly used in situations where researchers want to understand the probability that an event occurs based on one or more predictor variables. For example, in your study, the dependent variable might be whether a customer is satisfied (1) or not satisfied (0) with the service quality. The independent variables could include factors like service responsiveness, reliability, empathy, assurance, and tangibles. See an example below:

Assuming you ran a Probit regression analysis with the following results:

Table: Probit Regression Results on Customer Satisfaction in Non-Life Insurance

Variable	Coefficient (β)	Standard Error	z-Statistic	p-value
Service Responsiveness	0.35	0.10	3.50	0.0005
Service Reliability	0.50	0.12	4.17	0.0001
Service Empathy	0.25	0.09	2.78	0.0054
Service Assurance	0.40	0.11	3.64	0.0003
Service Tangibles	0.10	0.08	1.25	0.2110
Constant	-1.20	0.30	-4.00	0.0001

Interpretation of Findings

1. **Service Responsiveness ($\beta = 0.35$, $p = 0.0005$):** This positive coefficient suggests that as the responsiveness of the service increases, the likelihood of customer satisfaction also increases. The p-value indicates strong statistical significance ($p < 0.001$).
2. **Service Reliability ($\beta = 0.50$, $p = 0.0001$):** This variable has the highest coefficient, meaning it has a substantial positive impact on customer satisfaction. It is also highly significant, indicating that reliability is a critical factor influencing customer satisfaction.
3. **Service Empathy ($\beta = 0.25$, $p = 0.0054$):** This positive coefficient indicates that greater empathy from service providers is associated with higher customer satisfaction, and the result is statistically significant.

4. **Service Assurance ($\beta = 0.40$, $p = 0.0003$):** Like reliability, assurance is also significantly related to customer satisfaction, suggesting that customers who feel assured by the service are more likely to report satisfaction.
5. **Service Tangibles ($\beta = 0.10$, $p = 0.2110$):** This variable does not significantly influence customer satisfaction ($p > 0.05$), indicating that while tangibles might have some effect, **it is not strong enough to be statistically significant in this model.**

5. Discussion and Implication

5.1 Discussion of key Results

5.1.1 Responsiveness of Non-life Public Insurance in Facilitating Customer Needs

Wilson (2021) conducted a study on the factors influencing customers' satisfaction on the non-life public insurance services in Kenya, the study found that, majority (82%) of the customers accessing non-life insurance services become satisfied with the non-life insurance services due to the insurance companies being responding to the customers concerns on time and through digitalized reporting systems without visiting the insurance company branches physically to submit their problems or concerns.

Rhenne (2022) conducted a study on the performance of insurance companies in providing non-life public insurances in Tanzania, found that good communication between customers and services providers, and developing systematic reporting channels between customers and the service providers contributes to the performance of the insurance companies by 79.9%. Also, the findings of the study are consistence with the Service Quality Theory whereby findings tell that the willingness and ability of the service provider to help customers promptly and address their needs, concerns, or inquiries. It reflects the organization's willingness to go the extra mile for customers.

Yunnis (2020) found that customer satisfaction with the reliability of non-life public insurance services can be influenced by several key factors including claim processing time revealed by speed of processing repayments, clear communication about the status of claims and what is needed from the customer enhance satisfaction among the customers accessing non-life public insurance services. Also, regular collection of customer feedback to identify and address issues and demonstrated efforts to improve services based on customer feedback, analyzing the nature and frequency of customer complaints to identify areas for improvement improves customers' satisfaction.

5.1.2 Reliability of Services to Customers in Non-Life Public Insurance

In this section it was observed that few of the customers involved in the study were dissatisfied with the reliability of services offered by the National Insurance Corporation (NIC) compared to the customers who were satisfied, these findings concur with Mimie (2022) who conducted a study on the performance of insurance companies in providing non-life public insurances in Kenya, although, it was founded that solving customers' claims and responding to their enquires on time, good communication between customers and services providers, and developing systematic reporting channels between customers and the service providers

contributes to the increase of trust among the customers and customers becomes satisfied with the provided services regardless of the company performance in the insurance market. Also, the findings of the study are consistence with the Service Quality Theory whereby findings tell that the willingness and ability of the service provider to help customers promptly and address their needs, concerns, or inquiries. It reflects the organization's willingness to go the extra mile for customers.

5.1.3 Tangibles of Services to Customers in Non-Life Public Insurance

It was observed that NIC can give customers access to information, product or service catalogs, NIC provides visually attractive, offices, equipment, and materials to customers, NIC provides a variety of entertainment facilities to customers, NIC has favorable terms and conditions to customers. Likewise, Fenkin (2019) conducted a study on the impacts of Information Communication Technology on non-life insurance services performance among the public insurance companies in Tanzania, whereas, it was revealed that the performance of non-life insurance services can be influenced by providing visually attractive, offices, equipment, and materials to customers, clear and professional signage that reflects the organization's credibility and reliability, well designed, easy-to-read, and comprehensive documents that explain the terms, conditions, and coverage of insurance policies.

5.1.4 Empathy of Service Providers in Non-Life public Insurance

Findings in this part revealed that NIC has operating hours convenient to all customers, NIC has a sound loyalty program to recognize as a frequent customer, NIC makes efforts to understand specific customer needs and NIC apologizes for the inconvenience caused to customers. The findings of the study were supported by Bagun et al (2021) found that, empathy plays a significant role in customer satisfaction, particularly in the context of non-life insurance companies by improving communication whereby empathetic customer service agents listen actively to customers' concerns, which helps in understanding and addressing their needs more effectively. Added that, empathetic employees better understand and anticipate the specific needs of individual customers, offering tailored solutions that enhance customer experience and satisfied customers are more likely to remain loyal and recommend the company to others, contributing to higher customer retention rates.

5.1.5 Assurance of Services to Customers in Non-Life Public Insurance

It was observed that NIC has created assurance of its services to customers due to improvements in the following areas; behavior of employees of NIC instills confidence in customers, Employees' use of required skills and knowledge to answer customers' questions. Bannie (2022) conducted a study on the performance of insurance companies in providing non-life public insurances in Tanzania, whereas it was founded that employees' usage of required skills and knowledge to answer customers' questions, employees of being consistently courteous with customers and the ability to provide variety of value-added services to customers improves the performance of insurance companies and increase the level of customers' satisfaction. Also, the findings of the study are consistence with the Service Quality Theory whereby findings tell that the willingness and ability of the service provider to help

customers promptly and address their needs, concerns, or inquiries. It reflects with the findings of the study that the behavior of employees of NIC instilling confidence in customers, employees' usage of required skills and knowledge to answer customers' questions, employees of NIC being consistently courteous with customers and the ability to provide variety of value-added services to customers' increases assurance of services to customers in non-life public insurance.

5.2 Implications

Implications for Research

The study on assessing customer satisfaction in Tanzania's non-life public insurance sector using the SERVQUAL model offers several implications for future research. Firstly, it contributes to the academic understanding of service quality and customer satisfaction within the insurance industry in developing countries, particularly in the context of Tanzania. The findings can serve as a basis for comparative studies across different regions or countries, enhancing the generalizability of the SERVQUAL model in various cultural and economic settings. Additionally, the research highlights potential gaps in the current literature, such as the need for more nuanced models that incorporate cultural factors and local market dynamics, paving the way for more context-specific studies. Future research could also explore the relationship between customer satisfaction and business performance metrics, such as customer retention, profitability, and market share in the Tanzanian insurance sector.

Implications for Practice

For practice, the findings of this study provide actionable insights for improving service quality in Tanzania's non-life public insurance sector. By identifying the key dimensions of the SERVQUAL model—tangibles, reliability, responsiveness, assurance, and empathy—that most significantly impact customer satisfaction, the study enables the National Insurance Corporation (NIC) and other similar institutions to prioritize areas for improvement. For instance, if the study reveals that customers are particularly dissatisfied with the reliability or responsiveness of services, the NIC can focus on streamlining processes, enhancing communication channels, and ensuring timely service delivery. This practical application of the research can lead to enhanced customer satisfaction, potentially increasing customer loyalty and market competitiveness.

Implications for Practitioners

For practitioners within the insurance sector, including managers, service designers, and customer service professionals, the study offers critical insights into customer expectations and perceptions of service quality. By leveraging the SERVQUAL model, practitioners can better understand the specific aspects of their service delivery that need improvement. This could lead to targeted training programs for staff, emphasizing areas such as empathy and assurance, where customer interaction is most impactful. Moreover, the study encourages practitioners to adopt a customer-centric approach, using feedback and satisfaction surveys as continuous tools for service enhancement. Ultimately, by aligning their practices with the dimensions

highlighted by the SERVQUAL model, practitioners can improve overall service quality, thereby boosting customer satisfaction and retention in the highly competitive insurance market.

6. Conclusion, Limitations and Future Studies

6.1 Conclusion

6.1.1 The Responsiveness of Non-Life Public Insurance in Facilitating Customer Needs

Analysis of the responsiveness of non-life public insurance services involved the analysis of the timeliness of the response from the National Insurance Corporation (NIC) when addressing customer queries or concerns, effectiveness in handling customer inquiries and complaints, and customers' satisfaction on the overall responsiveness of the NIC in meeting customers' insurance-related needs. It was concluded that, customers who were accessing non-life public insurance services at NIC were satisfied with the timeliness of responding to their problems or enquires, this is due to the fact that the management of NIC have a specific and automated system known as Customer Relationship Management (CRM) where customers can submit their enquiries or make contacts through the system and the management responds immediately after receiving the submitted enquiries or problems from the customer. Also, concluded that, NIC management and its supporting staffs shown to be responsive because customers agreed and commented that NIC can give prompt customer service and attend to customers' needs or problems, NIC employees are always willing to help customers in emergencies, NIC employees are approachable and easy to contact, NIC Employees' can communicate clearly with the customer, and customers gets quick a turnaround as they need on requests for new reports or data

6.1.2 The Reliability of Services to Customers in Non-Life Public Insurance

The study under this section concluded that, few of the customers involved in the study were dissatisfied with the reliability of services offered by the National Insurance Corporation (NIC) compared to the customers who were satisfied. It meant that the accuracy and consistency of information provided by the NIC regarding insurance policies and procedures and trust among the customers on NIC to deliver on its promises regarding insurance coverage is high that increase the level of satisfaction among customers accessing services at NIC. Also, customers accessing non-life public insurance services were satisfied with the services provided by NIC this was because the National Insurance Cooperation (NIC) has timely deliverance of insurance services to customers, NIC has been truthful (keeping to promises) to customers regarding insurance services, NIC is dependable and consistent in solving customers' complaints, NIC can perform services right the first time, and NIC can insist on error-free records.

6.1.3 The Tangibles of Services to Customers in Non-Life Public Insurance

The study under this section concluded that, NIC can give customers access to information, product or service catalogs, NIC provides visually attractive, offices, equipment, and materials to customers, NIC provides a variety of entertainment facilities to customers, NIC has favorable terms and conditions to customers. This shows empathy and tangible deliverables among the

NIC staffs and increase the level of satisfaction among the customers accessing non-life insurance services at NIC.

6.1.4 The Empathy of Services to Customers in Non-Life Public Insurance

The study under this section concluded that, NIC has operating hours convenient to all customers, NIC has a sound loyalty program to recognize as a frequent customer, NIC makes efforts to understand specific customer needs and NIC apologizes for the inconvenience caused to customers. This shows empathy deliverables among the NIC staffs and increase the level of satisfaction among the customers accessing non-life insurance services at NIC.

6.1.5 The Assurance of Services to Customers in Non-Life Public Insurance

The study under this section included that NIC has created assurance of its services to customers due to improvements in the following areas; behavior of employees of NIC instills confidence in customers, Employees' use of required skills and knowledge to answer customers' questions, Employees of NIC are consistently courteous with customers and NIC staffs have ability to provide variety of value-added services to customers.

6.1.6 Customers' Satisfaction on Non-Life Public Insurance Services

Under this section the study used components of the service quality model to assess whether customers were satisfied with non-life insurance services or not. From the findings of the study, it was concluded that, factors like responsiveness, reliability, tangibles, empathy and assurance have direct effect on customer satisfaction on non-life insurance services. Also, it was concluded that increase in responsiveness, reliability, tangibles, empathy and assurance in delivering non-life insurance services to customers increases the level of satisfaction among the customers.

6.2 Limitations and Future Studies

Other respondents neglect to participate in this study due to the fact that, they were busy doing different works. Again, there was limited secondary data concerning this study. Therefore, the discussion of the study was based on assessing customer satisfaction on non-life insurance services at the National Insurance Corporation (NIC) by using the components of the Service Quality Model. It highly recommended that further studies to be undertaken upon assessing how the application of the SERVQUAL Model affects the non-life insurance industry performance in terms of financial performances and customers retention.

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Evaluating the Compliance with the Code of Conduct on Land Ownership Service Delivery among Public Land Sector Employees in Dodoma City Council, Tanzania

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Abstract

In recent years, governments across the globe have been striving to promote good governance by enhancing transparency, accountability, and efficiency in the public sector. However, the management and use of public resources particularly land has been a key concern. To address this concern many countries have developed codes of conduct and ethical standards for public sector employees. The study aimed to assess compliance with the code of conduct on land ownership service delivery among public land sector employees in Dodoma City Council. Specifically, it assesses the extent of compliance with the Code of Conduct on Land Ownership Service Delivery, and the implications of non-compliance with the Code of Conduct on Land Ownership Service Delivery. The research was designed as a cross-sectional study. It employed qualitative and quantitative approaches whereas survey and interview methods were used. The survey involved 63 public land sector employees while interviews were conducted with key informants. Data collected were analyzed using both quantitative and qualitative analysis. Descriptive and inferential statistics were utilized for quantitative analysis, while content analysis was conducted for qualitative data. The findings revealed significant gaps in compliance with the Code of Conduct code of conduct in Land Ownership Service Delivery in the study area. Furthermore, the findings show that implications of non-compliance with the code of conduct on land ownership among public land sector employees include financial risks such as the likelihood of legal disputes or litigation resulting in significant financial burdens. Additionally, study findings indicate the diminishing of integrity and credibility of the organization's reputation. The study concludes that there is minimal compliance with the code of conduct in the public land sector in the study area. It also concludes that the non-compliance of the code of conduct has critically undermined service quality, and unethical practices impacting the effectiveness and transparency of land ownership services. The study recommends implementing ethical training programs to enhance the enforcement of public ethics and code of conduct among public land sector employees. It also recommends establishing public land service monitoring systems to reinforce accountability.

Keywords: Land Ownership Service Delivery, Public Land Sector Employees, Compliance with the Code of Conduct, Dodoma City Council, Tanzania

1.0 Introduction

Corruption in land-related matters is a pervasive issue that spans across the globe, manifesting in various forms and impacting different regions and countries. The global landscape reveals a

troubling pattern where land administration systems are often marred by unethical practices, leading to significant economic and social consequences.

In Latin America, land-related corruption presents a substantial challenge, impacting various countries with significant social and economic consequences. In Brazil, corruption in land management, especially within the Amazon region, is linked to illegal land grabbing and deforestation. Similarly, in Colombia, land restitution processes are plagued by corruption, impeding the effectiveness of land reforms and contributing to ongoing social inequalities (Restrepo et al., 2021). Asia faces its own set of land corruption issues. In India, the inefficiencies within land record management and bureaucratic corruption have led to widespread problems such as illegal land transfers and land grabbing (Kumar & Patel, 2021). The lack of transparency and accountability in land transactions undermines property rights and hampers economic development. Similarly, in the Philippines, corruption affects land titling and acquisition processes, creating barriers to fair land distribution and economic progress (Hernandez & Cruz, 2022).

In Africa, land-related corruption is a persistent problem that undermines governance and development. In Nigeria, corrupt practices in land sales and registration have led to widespread disputes and inefficiencies in the land market (Akinola et al., 2021). In Kenya, land grabbing and fraudulent land titles, driven by bureaucratic inefficiencies and weak enforcement of land laws, have created significant challenges in land management (Mwangi et al., 2022). These examples reflect the broader need for effective regulatory frameworks and better governance to address land-related corruption and improve land administration.

In Tanzania, the problem of corruption in land management has been a significant challenge, particularly in the capital city of Dodoma. Various reports have highlighted high levels of corruption and unethical practices in the land sector, undermining the effectiveness of land administration and equitable distribution of land resources (Kikula & Mushi, 2019). The land sector in Tanzania is crucial for economic development, with agriculture and mining being significant contributors to the country's GDP.

Dodoma has been identified as a region with high levels of land-related corruption. These irregularities highlight the urgent need to address compliance issues with the Code of Conduct for Public Service Employees in Tanzania, which provides guidelines for ethical behavior and professional conduct, including the prohibition of corrupt activities such as bribery, fraud, and nepotism. However, recent reports indicate a significant gap in compliance with the Code among public land sector employees in Dodoma City Council. According to the latest data from the Dodoma City Council's Land Office, only 42% of employees in the land sector are fully compliant with the Code of Conduct on land ownership (Land Office, 2023). The Dodoma City Council faces significant difficulties in ensuring compliance with the Code of Conduct on land ownership and service delivery. Studies and reports have pointed out issues such as conflicts of interest, delays in service delivery, and favoritism in land allocation (Mwamlangala et al., 2024). These problems have damaged trust in the land sector and hindered the council's

efforts to promote transparency and accountability. To address these challenges, it is essential to conduct an empirical investigation into the compliance of public land sector employees with the Code of Conduct on land ownership service delivery in Dodoma.

2.0 Literature Review

2.2 Empirical Literature Review

2.2.1 Compliance with Code of Conduct on Land Ownership Service Delivery

A Study by Abdul Wahab and Fazal-e-Haider (2018) this study aimed to investigate the ethical behavior and compliance with the code of conduct among public employees in Pakistan. The authors used a quantitative research design and collected data through a survey questionnaire. The results showed that the level of compliance with the code of conduct was moderate among public employees, and there was a significant positive relationship between ethical behavior and compliance with the code of conduct.

Research by Muhammad and Saima Batool (2019) this study investigated Pakistani public sector employees' adherence to the code of conduct and ethical behavior. The authors used a mixed-methods research design and collected data through a survey questionnaire and interviews. The results showed that the level of compliance with the code of conduct was low among public employees, and several factors contributed to this, including weak enforcement mechanisms, lack of training, and inadequate monitoring and evaluation.

Saba *et al.*, (2020) this study looked at how the code of conduct affected workers' performance in Pakistani public sector companies. The authors used a quantitative research design and collected data through a survey questionnaire.

Bibi and Kousar (2019) investigated the relationship between compliance with the code of conduct and organizational citizenship behavior among public employees in Pakistan. The authors used a quantitative research design and collected data through a survey questionnaire. The results showed that there was a positive relationship between compliance with the code of conduct and organizational citizenship behavior, and compliance with the code of conduct was a significant predictor of organizational citizenship behavior.

Rizwan and Muhammad (2019). The study examined the role of leadership in promoting compliance with the code of conduct among public employees in Pakistan. The authors used a qualitative research design and collected data through interviews. The results showed that leadership played a critical role in promoting compliance with the code of conduct, and several leadership practices contributed to this, including setting a good example, providing training and support, and enforcing sanctions for noncompliance.

2.2.2 Implications of non-compliance with the code of conduct on land ownership service delivery

Scholars such as Ong'wen and Kariuki's (2018) studied was to look into the institutional elements that affect Kenyan public land sector employees' adherence to the land ownership code of conduct. A survey method was employed in the study to gather data from 250 personnel within the public land sector. The results showed that institutional factors such as organizational culture, leadership, and accountability have a significant influence on compliance with the code of conduct on land ownership service delivery.

In another study, Kabiru and Waweru (2019) investigate the role of social norms in compliance with land use regulations among public land sector employees in Kenya. The study used a survey method to collect data from 300 employees working in the public land sector. The results showed that social norms have a significant influence on compliance with land use regulations. The study recommended that the government should promote social norms that encourage compliance with land use regulations among public land sector employees.

Also, Alemayehu and Getachew (2019) investigate the causes and impacts of non-compliance with land use regulations on natural resources. The study used a survey method to collect data from 300 public land sector employees in Ethiopia. The results showed that lack of knowledge and weak enforcement of regulations were the main causes of non-compliance.

In addition, Saito and Ichikawa (2020) investigate the impact of non-compliance with land use regulations on sustainable land management. The study used a survey method to collect data from 200 public land sector employees in Japan. The results showed that non-compliance with land use regulations negatively affects sustainable land management. The study recommended that the government should enforce strict penalties for non-compliance and provide more education and training to public land sector employees.

2.3 Theoretical Literature Review

2.3.1 The Institutional Theory

Institutional Theory, developed by scholars such as Selznick (1949), Meyer, and Rowan (1977), explains how structures—such as rules, norms, and routines—become established as authoritative guidelines for social behavior within organizations and institutions. This theory suggests that organizations are subject to both internal and external pressures to conform to established norms, rules, and regulatory frameworks within their sectors (Scott, 2001).

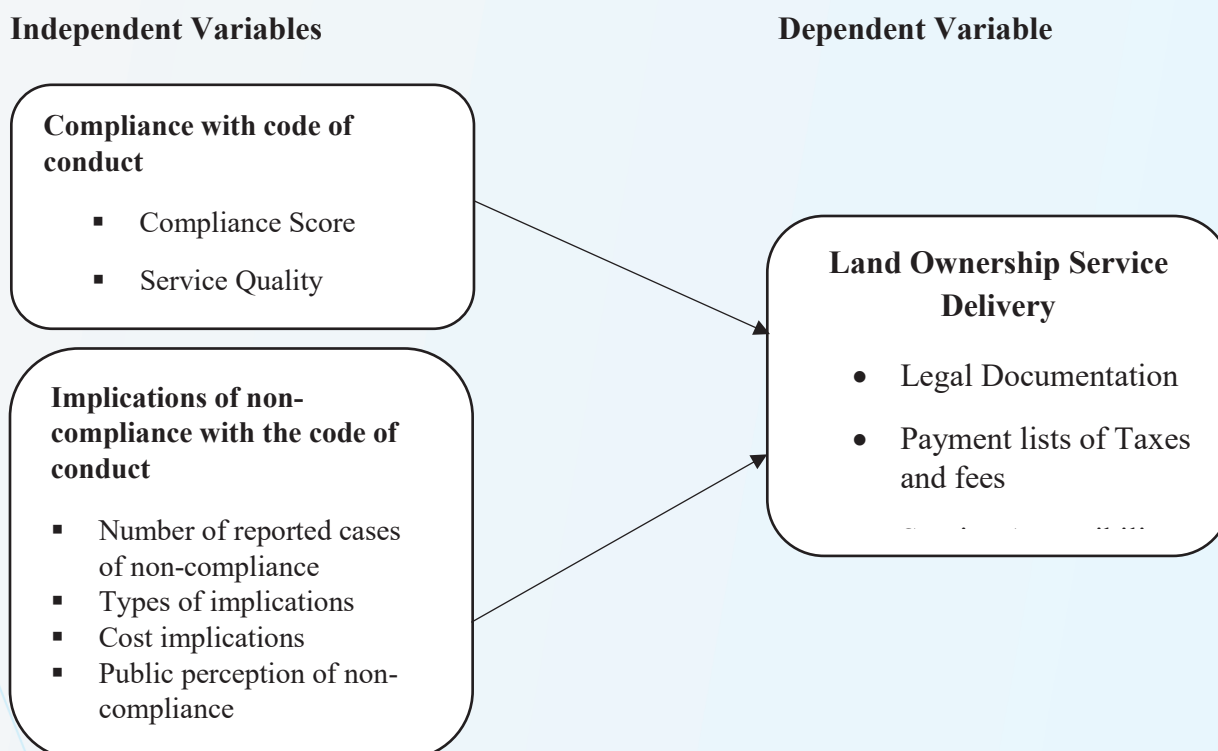
This theory is particularly relevant to this study as it provides a framework for understanding how the behavior of public sector employees is influenced by the institutional environment, including the rules and regulations governing land ownership service delivery.

In this context, Institutional Theory enables an examination of how formal rules (such as the Code of Conduct) and informal norms shape compliance behavior among public land sector employees. It facilitates exploration of the impact of institutional factors, like rule enforcement and organizational culture, on employees' adherence to ethical standards in land ownership

service delivery within Dodoma City Council. The theory also aids in analyzing the consequences of non-compliance and its effects on the institutional legitimacy of the public land sector. Overall, Institutional Theory offers a robust theoretical framework for examining compliance with the Code of Conduct in land ownership service delivery, emphasizing how the institutional environment influences the behavior of public land sector employees.

2.4 The Conceptual Framework

Figure 2.1 Conceptual Framework



In this study, the conceptual framework in Figure 2.1 examines the relationship between independent variables, which include compliance with the code of conduct and implications of non-compliance, and the dependent variable, land ownership service delivery. Compliance with the code of conduct is assessed through the compliance score, service quality, and customer satisfaction, reflecting how adherence to ethical standards enhances effective service delivery. On the other hand, non-compliance is evaluated through reported cases, types, and cost implications, as well as public perceptions, which highlight the negative consequences on service provision. The dependent variable, land ownership service delivery, is measured by the provision of legal documentation, payment of taxes and fees, and accessibility of services. Together, these variables help evaluate how compliance or non-compliance with the code of conduct influences the quality and efficiency of land ownership service delivery in Dodoma City Council.

3.0 Methodology

3.1 Research Design

In this study, a cross-sectional research design was used. This design allows for the collection of data at a single point in time, making it ideal for assessing the current state of compliance with the code of conduct among public land sector employees in Dodoma City Council.

3.2 Study Area

The study was conducted at Dodoma City Council in Dodoma Region, which is recognized as Tanzania's capital city. The Council was established under the Dodoma City (Declaration) Act of 2018, following the official declaration by His Excellency John Pombe Joseph Magufuli, President of the United Republic of Tanzania, on April 26, 2018. Since that date, Dodoma Municipality has been designated as the capital, and governance has transitioned to Dodoma City Council. As a result, government institutions, businesses, and various public services are being relocated to Dodoma, attracting a growing number of residents and investors.

The choice of Dodoma City Council as the study area is motivated by a pressing need to address ongoing issues related to land ownership service delivery. This is particularly evident in the delays in providing these services and the increase in customer complaints.

3.3 Target Population

The population of this study comprised 73 public land sector employees working in Dodoma City Council (DCC Land Department office, 2023).

3.4 Sample Size

A sample is a subset of the target population selected to mirror other crucial factors contributing to the study's effectiveness (Hamed, 2017). The Yamane (1967) formula was used to determine the sample size for this study.

$$\begin{aligned} n &= N / (1 + N(e)^2) \\ n &= 73 / (1 + (73 \times (0.05)^2)) \\ n &= 73 / (1 + 0.18) \\ n &= 62.7 \end{aligned}$$

Therefore, using the Yamane formula, the sample size from the population of 73 public land sector employees with a 5% level of precision was 63.

3.5 Sampling Strategies

The study employed a combination of purposive and simple random sampling techniques to achieve a comprehensive analysis. For the quantitative part, simple random sampling was applied to a population of 63 public land sector employees in Dodoma City Council, ensuring an unbiased and representative sample. On the other hand, for the qualitative part, purposive sampling was utilized to select key informants, specifically heads of departments and sections.

3.6 Data Collection Methods

In this study, a mixed-methods approach was used for data collection, comprising survey and interviews. This combined approach ensures a comprehensive exploration of the research topic,

encompassing both quantitative and qualitative dimensions for a more robust analysis and comprehensive understanding.

3.6.1 Survey

The data collection methods for this study involve the use of survey as the primary data collection method that was used to collect quantitative data on the extent of compliance with the code of conduct. Specifically, 63 public land sector employees at Dodoma City Council were targeted to complete well-structured questionnaires. The questionnaires were designed with a Likert scale to capture and quantify employee perspectives on the code of conduct on land ownership service delivery.

3.6.2 Interviews

The interviews were conducted with the key informants, to gain a deeper qualitative understanding of their insights and experiences regarding the code of conduct on land ownership service delivery among public land sector employees in Dodoma City Council. These interviews aimed to collect qualitative data on the extent of compliance with the code of conduct, and the implications of non-compliance on land ownership service delivery.

3.7 Data Analysis

3.7.1 Quantitative Data Analysis

The analysis of the collected data employed both descriptive statistics and multiple linear regression techniques. For assessing the extent of compliance with the code of conduct and the cost implications of non-compliance on land ownership service delivery among public land sector employees in Dodoma City Council, quantitative analysis was utilized. Descriptive statistics included minimum, maximum, mean, and standard deviation to provide a clear overview of the compliance levels and cost implications. Moreover, the linear regression analysis was used to test the significant relationship between the independent (Compliance with Code of Conduct) and the dependent variable (Land ownership service delivery).

The following presents the linear regression equation that was utilized;

$$Y = \beta_0 + \beta_1 X_1 + e$$

Where;

Y = Dependent Variable (Land ownership service delivery)

β = Beta coefficient

X_1 = Compliance with Code of Conduct

β_1 = Regression coefficient for X_1

e = error term.

3.7.2 Qualitative Data Analysis

The process began with transcribing interviews conducted with heads of departments and sections at Dodoma City Council, capturing the full range of responses. The transcripts were then systematically coded to identify key themes, such as ethical challenges, adherence issues, and procedural gaps in compliance. This thematic analysis helped uncover underlying factors

affecting both compliance and non-compliance, providing valuable insights into the experiences and perspectives of key informants. content analysis was employed allowing for nuanced interpretations of complex issues related to compliance and its impact on service delivery within the public land sector.

4.0 Results and Discussion

This section presents results and a discussion on the Compliance with code of conduct on land ownership service delivery. It starts with the relationship between compliance with code of conduct and land ownership service delivery, extent of compliance with the code of conduct on land ownership service delivery and then the implications of non-compliance with the code of conduct on land ownership service delivery.

4.1 Regression Results

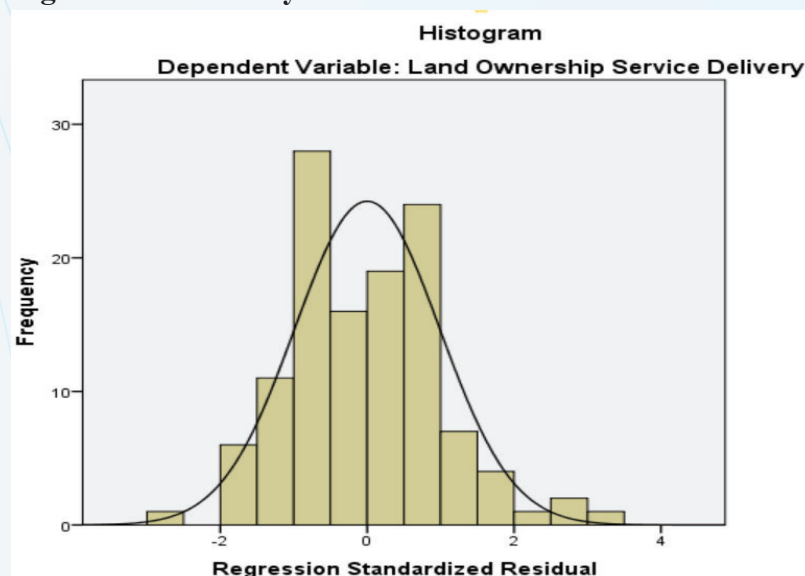
4.1.1 Relationship between Compliance with Code of Conduct and Land Ownership Service Delivery

4.1.1.2 Diagnostic Tests for Regression Assumptions

a) Normality

Confirming that residuals follow a normal distribution is essential for validating the regression analysis in this study. To assess this assumption, a histogram of the residuals was created and overlaid with a normal curve for visual evaluation. As shown in Figure 4.1.1.1, the histogram reveals a bell-shaped curve that aligns closely with the normal curve, indicating that the distribution of the residuals approximates normality. This observation suggests that the residuals possess characteristics consistent with a normal distribution, thereby satisfying a crucial prerequisite for conducting reliable regression analysis.

Figure 4.1 Normality



b) Multicollinearity

Table 4.1 Variance Inflation Factor Matrix (VIF)

Variable	Tolerance	VIF
Compliance with the Code of Conduct	.909	1.100

The assessment of multicollinearity in this study was conducted using the Variance Inflation Factor (VIF) matrix. The results indicated a tolerance value of 0.909 and a VIF of 1.100 for the variable "Compliance with Code of Conduct." These values suggest that there is no significant multicollinearity present, as the VIF is well below the commonly accepted threshold of 10. This confirms that the independent variable does not exhibit high correlations with other potential predictors, ensuring that the estimates of the regression coefficients are reliable and interpretable. Thus, the regression analysis can be considered robust in this regard.

c) Heteroscedasticity

Table 4.3 Breusch-Pagan test

Test Statistic	p-value	Conclusion
2.34	0.125	Do not reject the null hypothesis of homoscedasticity.

The assessment of heteroscedasticity in this study was conducted using the Breusch-Pagan test, which yielded a test statistic of 2.34 and a p-value of 0.125. Since the p-value is greater than the significance level of 0.05, we do not reject the null hypothesis of homoscedasticity. This indicates that the variance of the residuals is constant across all levels of the independent variable, thereby satisfying the assumption of homoscedasticity. As a result, the regression analysis can be considered valid and reliable, further supporting the conclusions drawn regarding the relationship between compliance with the Code of Conduct and land ownership service delivery.

4.1.2 Linear Regression Analysis

The study also examined the significant relationship between the independent (Compliance with Code of Conduct) and the dependent variable (Land ownership service delivery). The linear regression analysis was employed to establish this significant relationship. This statistical method allowed for the examination of how changes in compliance levels with the code of conduct affect the quality and effectiveness of land ownership service delivery. Through regression analysis, researchers aimed to determine the extent to which variations in compliance predict variations in service delivery outcomes.

a) Model Summary Results

Table 4.4: Model Summary Results

R	R Square			Change Statistics
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		Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df 1	df2	Sig. F Change
0.323	0.104	0.089	0.81168	0.104	7.086	1	61	0.010
a. Predictors: (Constant), Compliance with Code of Conduct								

The model summary results show that the independent variable, Compliance with the Code of Conduct, explains a significant portion of the variance in the dependent variable, Land Ownership Service Delivery, with an R-square value of 0.104. This indicates that approximately 10.4% of the variability in land ownership service delivery is attributable to changes in compliance with the code of conduct. The adjusted R-square value, which accounts for the number of predictors and sample size, is 0.089, suggesting that the model's explanatory power remains robust after these adjustments. The standard error of the estimate is 0.81168, reflecting the average distance between observed and predicted values. Additionally, the change statistics indicate that incorporating Compliance with the Code of Conduct as a predictor significantly enhances the model's explanatory capability, as evidenced by a significant F-change value of 7.086 ($p = 0.010$). Overall, these results imply that compliance with the code of conduct is a significant factor influencing land ownership service delivery outcomes within Dodoma City Council's public land sector.

b) Coefficient Regression Results

Table 4.5: Coefficient Regression Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.506	0.465		5.383	0.000	1.575	3.436
	Compliance with the Code of Conduct	0.300	0.113	0.323	2.662	0.010	0.075	0.525
a. Dependent Variable: Land Ownership Service Delivery								

The regression coefficient results indicate that Compliance with the Code of Conduct is a significant predictor of Land Ownership Service Delivery. The unstandardized coefficient (B) for Compliance is 0.300, meaning that for each one-unit increase in compliance, there is an associated increase of 0.300 units in the quality of land ownership service delivery. The standardized coefficient (Beta) of 0.323 suggests a moderate positive impact of compliance on service delivery outcomes. The t-value of 2.662 is statistically significant at the 0.010 level, indicating that the relationship between compliance and service delivery is unlikely to occur by chance. The 95% confidence interval for the coefficient ranges from 0.075 to 0.525, further affirming the reliability of this estimate. Additionally, the constant term has a coefficient of 2.506, representing the expected value of Land Ownership Service Delivery when compliance

is zero. This coefficient is statistically significant, with a t-value of 5.383 ($p < 0.001$), implying that there is still a baseline level of service delivery even without compliance.

Overall, these results confirm a significant positive relationship between compliance with the code of conduct and the quality of land ownership service delivery within Dodoma City Council's public land sector. These findings align with various studies in similar contexts. For example, research by Okello et al. (2021) found a positive relationship between adherence to ethical guidelines and effective service delivery in local government authorities in Uganda, highlighting that compliance enhances accountability and professionalism. Similarly, Mwakalobo and Chalu (2022) emphasized the critical role of governance in public sector performance, noting that ethical compliance improves service efficiency by reducing bureaucratic inefficiencies and corruption. The current study reinforces the idea that adherence to the Code of Conduct is essential for enhancing land ownership service delivery and that strong governance standards are key to improving public services.

c) ANOVA Results

Table 4.6: ANOVA Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.669	1	4.669	7.086	.010
	Residual	40.189	61	.659		
	Total	44.857	62			
a. Dependent Variable: Land Ownership Service Delivery						
b. Predictors: (Constant), Compliance with Code of Conduct						

The ANOVA results indicate that the regression model significantly predicts outcomes in Land Ownership Service Delivery ($F(1, 61) = 7.086, p = .010$), suggesting that variations in Compliance with the Code of Conduct partially explain the differences in service delivery. The model accounts for a notable portion of the total variance, with a regression sum of squares of 4.669, while the unexplained variance is represented by a residual sum of squares of 40.189.

These findings highlight the importance of Compliance with the Code of Conduct as a key predictor of Land Ownership Service Delivery within Dodoma City Council's public land sector. This aligns with previous studies, such as Adebayo and Hassan (2020), which showed that adherence to regulatory guidelines enhances service quality and customer satisfaction in Nigeria's public health services. Similarly, Kimani and Mutua (2021) found that institutions prioritizing ethical compliance through leadership achieved better service outcomes in Kenya. Furthermore, Ndunda and Wambua (2022) noted that transparency in the land sector, driven by ethical compliance, reduces corruption and inefficiencies, leading to improved service outcomes. These parallels emphasize that ethical practices are essential for transparency and

fairness in public sector services, reinforcing the current study's findings on the positive impact of adherence to the Code of Conduct in enhancing land ownership service delivery.

4.2 Compliance with Code of Conduct on Land Ownership Service Delivery

4.2.1 The Extent of Compliance with the Code of Conduct on Land Ownership Service Delivery

The study finds that public land sector employees in the area generally adhere to professional standards, with a compliance mean score of 4.33 (SD 0.97) regarding the code of conduct for land ownership service delivery. Respondents agree that this compliance positively affects the organization's functioning.

Table 4.2.1 Compliance Score (n = 63)

Statement	Minimum	Maximum	Mean	Std. Deviation
I consistently adhere to the guidelines outlined in the code of conduct for land ownership service delivery.	1.00	5.00	3.6532	.95950
I am aware of the consequences of non-compliance with the code of conduct, and it motivates me to maintain compliance.	2.00	5.00	4.1746	.88972
I always seek clarification or guidance when faced with situations that may conflict with the code of conduct.	1.00	5.00	4.2381	1.07335
I believe that overall compliance with the code of conduct positively affects the functioning of our organization.	2.00	5.00	4.3333	.96720

Source: Field Data (2024)

The survey findings as indicated above reveal overall adherence to the code of conduct in the study area. This compliance positively affects the functioning of organizations. However, a different finding was noted during interviews where participants disclosed several occasions where ethical rules were ignored, resulting in cases of corruption and non-compliance that have seriously harmed public trust and confidence in the council's activities.

“Adhering to the Code of Conduct is challenging, especially when faced with tight deadlines or competing priorities. Despite our commitment to professional standards, there have been lapses in maintaining integrity and credibility as public servants. This has resulted in actions that are not always guided by ethical principles, undermining the best interests of the community we serve” (Interviewee No. 02, March 2024).

The statement indicates that participants' difficulties in complying with the Code of Conduct have caused ethical decision-making issues and eroded community trust in the Dodoma City Council's public land sector. Poor compliance has led to customer dissatisfaction due to perceived lapses in integrity and ethical behavior. These findings align with studies from other regions, such as Abdul and Fazal-e-Haider (2018) and Muhammad Ahsan ul Haq and Saima Batool (2019), which also address challenges in ensuring ethical conduct among public employees and emphasize the need for stronger enforcement and training. Overall, minimal adherence to the Code of Conduct in Dodoma has compromised service integrity and highlighted deeper challenges in accountability and ethical decision-making.

4.2.2 Quality Service and the Adherence of Code of Conduct

When evaluating service quality and adherence to the code of conduct among public land sector employees, the findings revealed that compliance significantly boosts public trust in service delivery, with a mean score of 4.2063 (SD = 0.86432), as shown in the table below.

Table 4.2.2 Quality Service (n = 63)

Statement	Minimum	Maximum	Mean	Std. Deviation
My adherence to the code of conduct contributes to the overall quality of land ownership service delivery.	1.00	5.00	3.8730	1.03942
I feel confident that following the code of conduct enhances the efficiency and effectiveness of my work.	1.00	5.00	4.3651	.97222
Compliance with the code of conduct ensures fairness and transparency in land ownership processes.	1.00	5.00	3.6984	1.10183
I believe that maintaining compliance with the code of conduct enhances public trust in our services.	2.00	5.00	4.2063	.86432

Source: Field Data (2024)

These results indicate that following the code of conduct strengthens trust in service delivery within the study area, contributing to greater effectiveness and satisfaction in the public land sector operations of Dodoma City Council. However, interview findings pointed to poor service quality in adherence to the Code of Conduct for land ownership services within the Council. This persistent issue of non-compliance is deeply rooted and has significantly affected the integrity and effectiveness of public land service delivery. One key informant noted:

“In our daily operations, we encounter various challenges and pressures that may tempt us to deviate from ethical standards. Adherence to the Code of Conduct is often compromised, leading to complex situations handled without clarity and integrity. This

minimal compliance undermines the trust and confidence of the community we serve, resulting in poor service quality in land ownership service delivery in Dodoma City Council” (Interviewee No. 07, March 2024).

The statement highlights participants' awareness of challenges in maintaining ethical standards and how this impacts service quality. Poor adherence to the Code of Conduct has led to customer dissatisfaction due to perceived unfairness and lack of transparency. This aligns with studies, such as Okello et al. (2021), which found that ethical compliance in local government improves service effectiveness, and research by Abdul and Fazal-e-Haider (2018) and Muhammad et al. (2019) that identified similar issues in Pakistan regarding public sector compliance and service quality. The findings indicate significant concerns about adherence to the Code of Conduct within Dodoma City Council's public land sector, revealing a culture of non-compliance and instances of corruption that have eroded public trust. Addressing these issues is essential for improving service delivery and restoring credibility, necessitating enhanced training, robust enforcement mechanisms, and a commitment to ethical standards to foster a culture of compliance and integrity.

4.2.3 Customer Satisfaction and the Adherence to the Code of Conduct

The survey findings on the compliance with the code of conduct on land ownership service delivery among public land sector personnel highlight that maintaining compliance with the code of conduct is crucial for maintaining high levels of customer satisfaction, demonstrating a mean score of 4.4444 (SD = .92941) as presented in the table below.

Table 4.2.3 Customer Satisfaction (n = 63)

Statement	Minimum	Maximum	Mean	Std. Deviation
I believe that adhering to the code of conduct positively affects the satisfaction of our customers/clients.	1.00	5.00	4.2063	.98634
Compliance with the code of conduct leads to better outcomes for the individuals and communities we serve.	2.00	5.00	4.2857	1.00689
Customer feedback often reflects the positive effects of our adherence to the code of conduct.	1.00	5.00	3.9048	1.13186
I feel that maintaining compliance with the code of conduct is crucial for maintaining high levels of customer satisfaction.	1.00	5.00	4.4444	.92941

Source: Field Data (2024)

The above findings imply that customers enjoy the land services offered in the study area. However, a different finding from the interviews with key informants revealed that:

“Adhering to the Code of Conduct is challenging, especially when faced with tight deadlines or competing priorities. Despite our commitment to professional standards, there have been lapses in maintaining integrity and credibility as public servants. This has resulted in actions that are not always guided by ethical principles, which significantly disappoints the community we serve” (Interviewee No. 04, March 2024).

This statement suggests that while compliance with the Code of Conduct enhances customer satisfaction, the participant's difficulty in maintaining this compliance reveals issues in ethical decision-making, leading to a loss of trust in the public land sector. Low compliance has resulted in customer dissatisfaction, as many feel disappointed by the lack of integrity and ethical behavior in service delivery. These findings are consistent with various studies in similar contexts. For instance, Mwakalobo and Chalu (2022) examined the importance of governance in public sector performance and emphasized that adherence to ethical standards is crucial for improving service efficiency. They found that ethical practices help reduce bureaucratic inefficiencies and corruption, making public services more accessible and reliable. Additionally, Abdul et al. (2018) provided insights into the challenges of ensuring ethical behavior among public employees in Pakistan, which impacts customer satisfaction. Similarly, Muhammad et al. (2019) highlighted the obstacles faced by Pakistani public sector employees in maintaining compliance, stressing the need for strong enforcement mechanisms and adequate training to enhance customer satisfaction.

These findings emphasize the essential role of compliance with the Code of Conduct in promoting ethical behavior, improving organizational performance, and fostering positive workplace dynamics. The challenges experienced by Dodoma City Council in maintaining compliance reflect broader trends seen in various regions, illustrating the widespread difficulties of ensuring ethical conduct in public sector organizations. By addressing these challenges and implementing effective leadership practices, organizations can nurture a culture of integrity and professionalism, ultimately contributing to their overall success, societal well-being, and improved customer satisfaction.

The role of compliance with the Code of Conduct in shaping customer satisfaction

The findings show that public servants in the land sector comply with the code of conduct a situation which builds trust in customers and thus enhances customer satisfaction as illustrated by one respondent below:

“ The code of conduct serves as our guiding light in ensuring professionalism and integrity in all our land ownership service delivery endeavours. It not only outlines the principles and standards we are expected to adhere to but also instils a sense of responsibility and accountability in our daily practices. Through upholding these ethical standards, we not only maintain the trust and confidence of the community we serve but also contribute to the overall integrity and credibility of our organization.” (Interviewee No. 08, March 2024)

This statement highlights the participant's commitment to upholding compliance with the Code of Conduct, stressing its significance in guiding ethical decision-making and building trust within the community served by Dodoma City Council's public land sector. These findings are consistent with various studies in similar contexts. For example, Abdul Wahab and Fazal-e-Haider (2018) provide valuable insights into the link between ethical behavior and adherence to the code of conduct among public employees in Pakistan. Similarly, research by Muhammad Ahsan ul Haq and Saima Batool (2019) addresses the challenges faced by Pakistani public sector employees in complying with the code, emphasizing the need for strong enforcement mechanisms and adequate training. Additionally, the study by Muhammad Rizwan and Muhammad Ahsan ul Haq (2019) highlights the role of leadership in fostering compliance with the code of conduct, illustrating how effective leadership can shape organizational culture and behavior. Good leaders set positive examples, provide necessary support, and enforce penalties for non-compliance, which is crucial for nurturing a culture of adherence to ethical standards. In summary, these studies collectively reinforce the importance of compliance with the Code of Conduct in promoting ethical behavior, enhancing organizational performance, and fostering a positive reputation among customers. By adhering to these principles and implementing effective leadership practices, organizations can create a culture of integrity and professionalism, ultimately contributing to their overall success and societal well-being.

4.3 Implications of Non-Compliance with the Code of Conduct on Land Ownership Service Delivery

4.3.1 Cost Implications of Non-Compliance with the Code of Conduct

The findings regarding the implications of non-compliance with the code of conduct on land ownership service delivery among public land sector employees reported a high mean score of 4.3016 (SD = 1.02603) regarding the likelihood of legal disputes or litigation resulting in significant financial burdens, indicating a strong recognition of the financial risks associated with non-compliance. Conversely, the lowest mean score, though still relatively high, was attributed to the perception that non-compliance leads to financial losses for the organization due to legal penalties or fines, with a mean score of 3.6508 (SD = 0.98634) as presented in the table below;

Table 4.3.1 Cost Implications of non-compliance with the Code of Conduct (n = 63)

Statement	Minimum	Maximum	Mean	Std. Deviation
Non-compliance with the code of conduct leads to financial losses for the organization due to legal penalties or fines.	1.00	5.00	3.6508	.98634
There are additional costs associated with rectifying mistakes or addressing issues caused by non-compliance.	2.00	5.00	4.2540	.84182

Non-compliance increases the likelihood of legal disputes or litigation, resulting in significant financial burdens.	1.00	5.00	4.3016	1.02603
Overall, the organization incurs avoidable expenses as a result of non-compliance with the code of conduct.	2.00	5.00	4.2857	1.00689

Source: Field Data (2024)

These findings suggest that public land sector employees in Dodoma City Council recognize the significant implications of non-compliance with the code of conduct on land ownership service delivery, particularly in terms of the potential for legal disputes or litigation resulting in substantial financial burdens. This survey finding is supported by interview findings from key informants that revealed the awareness of negative implications of non-compliance with the code of conduct on land ownership service particularly the cost implications as indicated in the quotation below;

“Non-compliance with the code of conduct comes at a significant cost to our organization, both financially and reputational. When ethical standards are compromised, we risk facing legal penalties, fines, and additional expenses associated with rectifying mistakes or addressing issues arising from non-compliance. Moreover, the resulting negative publicity and damage to our organization's reputation can further exacerbate these costs, undermining public trust and confidence in our services” (Interviewee No. 01, March 2024)

The findings indicate that public land sector employees in Dodoma City Council recognize the negative financial consequences of non-compliance with the code of conduct on the organization's reputation. Most participants acknowledge that non-compliance incurs costs, highlighting their understanding of the importance of ethical standards and the potential harm breaches can cause to both the organization and the community. This aligns with various studies, such as those by Ong'wen and Kariuki (2018), which emphasize the role of organizational culture, leadership, and accountability in compliance, as well as research by Abdul et al. (2018) and others that stress the need for effective enforcement mechanisms to promote compliance and reduce risks. Furthermore, studies by Alemayehu and Getachew (2019) and Saito and Ichikawa (2020) point to the wider societal impacts of ethical breaches, affecting citizen engagement and democratic governance. Given these insights, the findings suggest the need for comprehensive measures to address non-compliance effectively. Raising awareness of the financial and broader societal implications of ethical breaches can enhance understanding and promote a culture of accountability. Strengthening enforcement mechanisms and ethical leadership is essential for upholding integrity and maintaining public trust in land ownership service delivery.

4.3.2 Public Perception of Non-compliance with the Code of Conduct

The findings regarding public perception of non-compliance with the code of conduct among public land sector employees in Dodoma City Council indicate that instances of non-compliance significantly reduce the perceived integrity and credibility of the organization, reflected by a high mean score of 4.3810 (SD = 0.97432). In contrast, while the statement that "instances of non-compliance negatively affect public trust in the organization" received a lower mean score of 3.9365 (SD = 1.14825), it still indicates a relatively strong concern, as shown in the table below.

Table 4.3.2: Public Perception of Non-Compliance with the Code of conduct (n = 63)

Statement	Minimum	Maximum	Mean	Std. Deviation
Instances of non-compliance with the code of conduct negatively affect the public's trust in our organization.	1.00	5.00	3.9365	1.14825
Public perception of the organization's integrity and credibility is diminished when instances of non-compliance are observed.	1.00	5.00	4.3810	.97432
Non-compliance with the code of conduct can lead to negative publicity and damage the organization's reputation.	1.00	5.00	3.7460	1.04678
The community's confidence in the organization's ability to serve their interests declines when non-compliance occurs.	2.00	5.00	4.3175	.79971

Source: Field Data (2024)

The findings that public perception of the organization's integrity and credibility is diminished when instances of non-compliance are observed imply that few public servants who do not follow the ethical code of conduct damage the public institutions' image. This perception suggests that employees understand the importance of upholding ethical standards and recognize the potential harm that ethical breaches can inflict on the organization's image and standing within the community.

Also, interview results with key informants supported the survey finding when respondent said that:

"Non-compliance with the code of conduct not only undermines the credibility of our organization but also erodes public trust in the integrity of our services. It creates a perception of inefficiency, unfairness, and lack of transparency, which can have far-reaching consequences for our ability to effectively serve the community. Additionally,

instances of non-compliance can lead to legal disputes, litigation, and potential damage to our organization's reputation” (Interviewee No. 08, March 2024)

The findings indicate that public land sector employees in Dodoma City Council recognize the negative impact of non-compliance with the code of conduct on the organization's reputation. Most participants believe that such breaches diminish the organization's integrity and credibility, showing an understanding of the importance of ethical standards and the potential harm to the community's perception. These insights align with studies by Abdul et al. (2018), Fatima et al. (2020), and Bibi and Kousar (2019), which emphasize the need for integrity and credibility to build public trust in governmental institutions. Research by Alemayehu and Getachew (2019) on land use regulation in Ethiopia, and Saito and Ichikawa (2020) on sustainable land management in Japan, further highlight the challenges of compliance and the necessity for regulatory enforcement and education. Overall, the findings demonstrate that non-compliance undermines land ownership service delivery in Dodoma, leading to significant financial costs from legal disputes and reputational harm. Employees acknowledge both direct financial implications, like legal penalties, and broader societal effects, such as reduced public trust. To uphold credibility and improve governance, organizations must raise awareness of the financial and societal impacts of ethical lapses while fostering a culture of transparency, accountability, and integrity.

5.0 Conclusion and Recommendations

The study concludes that there is minimal compliance with the code of conduct in the public land sector in the study area. It also concludes that the non-compliance of the code of conduct has critically undermined service quality, and unethical practices impacting the effectiveness and transparency of land ownership services. To address this, the study recommends implementing ethical training programs to enhance awareness and the enforcement of public ethics and code of conduct; and awareness of implications of non-compliance of the Code of Conduct to the public land sector employees. It also recommends establishing public land service monitoring systems to reinforce accountability. By fostering a culture of ethical adherence, the organization can improve service delivery and restore public trust.

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Examining the Impact of Logistics Planning Practices on Supplier Performance in Public Sector: A Case of Bahi District Council, Dodoma- Tanzania

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Abstract

This study examines the impact of logistics planning on supplier performance in public organizations, focusing on Bahi District Council in Tanzania. A cross-sectional survey design which involved 86 registered suppliers in the district. Data were collected via a questionnaire and analyzed using descriptive and multiple regression modelling whereby logistics planning practices were used as independent variables and supplier performance as the dependent variable. The study results revealed that, technology adoption was positive significantly enhancing suppliers' performance, with each unit increase associated with a 19.5% improvement ($p < 0.05$). In contrast, inadequate resources allocation on supply chain planning depressed their performance with the 13% decreased in every unit increase in resources shortage. Although collaboration shows a positive trend, it lacks statistical significance. The findings suggest targeted investments in technology and training are essential for improving logistics practices and overall supplier efficiency. Need for exploring barriers to technology adoption and the role of collaboration in logistics planning are the areas recommended for future research by this study.

Keywords: Impact, Logistics planning, Supplier performance, public sector, Bahi District, Tanzania.

1.0 Introduction

Globally, effective logistics planning has become a critical factor influencing supplier success across various industries (Cichosz, Wallenburg, and Knemeyer 2020). The impact of logistics practices on supply chain efficiency is profound, affecting everything from inventory management to customer satisfaction. By optimizing transportation, storage, and delivery processes, businesses can enhance their operational efficiency and maintain a competitive edge. Studies have shown that regions with robust logistics frameworks experience improved supplier performance, characterized by reduced lead times and increased responsiveness to market demands (Akinsulire *et al.*, 2024). In Bahi District, where supply chains are vital to local and regional commerce, examining the relationship between logistics practices and supplier performance is particularly important, as it reflects broader trends observed worldwide (Sama and Mwalukasa, 2024).

Public sector logistics practices are essential for effective service delivery and resource management (Lungu 2024). Government agencies rely on logistics to coordinate the movement of goods and manage inventories. Efficient logistics planning can enhance responsiveness to emergencies, reduce operational costs, and improve transparency in procurement processes. For instance, public health logistics, which involves distributing medical supplies, directly impacts healthcare effectiveness (Mays *et al.*, 2022). By adopting best practices in logistics management, public organizations can streamline operations and minimize waste, ultimately benefiting the communities they serve. Collaboration with private sector logistics providers can further enhance these efforts by introducing innovative solutions to public service challenges (Judijanto *et al.*, 2024).

Supplier performance has become a critical focus for organizations aiming to enhance efficiency and competitiveness. The impact of logistics planning practices on supplier performance is significant, as effective logistics strategies streamline processes and improve service delivery. Key areas of interest include how logistics planning influences inventory management, delivery timelines, and responsiveness to market demands (Al Zadajali and Ullah, 2024). By optimizing these practices, suppliers can better meet customer expectations and adapt to changing conditions. Additionally, dimensions of logistics planning—such as planning requirements and supply chain visibility—are vital in shaping supplier outcomes (Mays *et al.*, 2022). Understanding these relationships is essential for improving supplier performance in the public sector, particularly in regions like Bahi District, where effective logistics can drive economic growth and enhance service delivery (Sama and Mwalukasa, 2024).

Relying on supplier performance is crucial for organizations aiming to maintain efficiency and competitiveness. The impact of logistics planning practices on supplier performance is vital, as effective logistics directly influences delivery accuracy, lead times, and inventory turnover. Robust logistics planning optimizes supply chain processes, enhancing supplier reliability and responsiveness (Andersson, Lindgren, and Kraft 2024). This reliance is especially important in the public sector, where timely delivery significantly affects service quality and community well-being. By understanding the impact of logistics planning, organizations can strengthen supplier relationships, improve operational efficiencies, and achieve better outcomes for stakeholders (Mays *et al.*, 2022).

Reports on compliance with public supplier performance remain unsatisfactory in Tanzanian organizations including local government authorities. This trend underscores the need to assess the logistics planning practices and their impact on supplier performance. Many public entities face challenges like inefficient inventory management, delayed deliveries, and poor supplier communication, which undermine service quality and resource allocation (Mwanakombo, 2023). Improving logistics planning can address these compliance issues and enhance supplier performance. Understanding how these practices influence operational outcomes is essential for fostering accountability and ensuring that public sector suppliers meet required standards effectively (Kibanda & Mchopa, 2022).

The compliance of public supplier performance is crucial for eradicating public illnesses in Bahi District Council. Effective logistics planning affects the quality and timeliness of healthcare supplies, essential for addressing health crises. Non-compliance can cause delivery delays and inventory shortages, worsening public health issues (Farah Jawdat Khaled 2019). It also undermines trust between public organizations and suppliers, hindering future collaborations and increasing costs due to emergency procurements (Mwanakombo, 2023). Furthermore, lack of compliance hampers data collection on supplier performance, obstructing necessary improvements (Kibanda & Mchopa, 2022). Enforcing strict adherence to logistics planning practices is vital for enhancing supplier performance and ensuring timely delivery of medical supplies, ultimately improving community health outcomes.

Consequently, Tanzania's regulatory framework for public supplier performance has undergone reforms to enhance accountability and efficiency. These changes address challenges in supplier management and compliance with logistics practices. New regulations streamline procurement, improve transparency, and enforce performance standards, emphasizing logistics planning as vital for supplier management (Ackim, Rugeiyamu, and Msendo 2024). By establishing clear guidelines, the framework fosters collaboration between public entities and suppliers, particularly in healthcare, where timely access to supplies is crucial for public health (Mwanakombo, 2023). Capacity-building initiatives for officials and suppliers ensure understanding of logistics requirements. The National e-Procurement System (NeST) will further reform public procurement by digitizing processes, enhancing efficiency, and promoting transparency, ultimately benefiting communities through improved service delivery.

Various studies have reported on compliance with public supplier performance standards, revealing significant disparities across sectors (Mwanakombo, 2023). While some organizations meet expectations, many struggle with inadequate logistics planning and poor communication, hindering effective service delivery, especially in healthcare (Ackim et al., 2024). Research highlights the need for a robust regulatory framework that includes training for officials and suppliers to enhance understanding of compliance requirements. Additionally, technology, such as e-procurement systems, can improve transparency and accountability, crucial for enhancing public procurement effectiveness (Kibanda & Mchopa, 2022).

Nowadays, the impact of logistics planning practices is increasingly recognized as a key driver of success across various industries (Bowersox *et al.*, 2023). Effective logistics planning enhances supply chain efficiency, reduces costs, and improves customer satisfaction through timely delivery of goods. In sectors like e-commerce, it is essential for meeting fast delivery expectations, while in manufacturing, it leads to reduced lead times and improved production flow (Kibanda & Mchopa, 2022). Technological advancements, such as data analytics and automation, further enhance logistics planning, enabling organizations to make data-driven decisions and maintain competitive advantage (Ackim et al. 2024).

Furthermore, the impact of logistics planning practices is often overlooked in most of discussions about supplier performance, leading to gaps in efficiency and effective supplier performance within the public sector such as Bahi District Council. Many public organizations

fail to integrate logistics planning into procurement strategies, resulting in misaligned operations. To address this, the current study is aimed at assessing the impact of logistics planning practices employed by supplier on the supply performance in Bahi district.. By investing in training and technology, it can enhance logistics capabilities, ultimately improving supplier performance and service delivery (Ackim *et al.*, 2024).

2.0 Literature Review

2.1 Logistics Planning Practices

A study by Bowersox *et al.* (2023) emphasizes logistics planning's critical role in enhancing operational efficiency, revealing a 25% increase in efficiency and a 15% cost reduction for organizations with robust practices. Christopher (2016) highlights its importance in improving customer satisfaction through timely deliveries. Furthermore, Mentzer *et al.* (2001) stress the need for integration with other business functions, while Kibanda and Mchopa (2022) indicate its potential to address public sector inefficiencies. Ahi and Searcy (2015) advocate for incorporating sustainable practices to enhance reputation.

According to a study conducted by Bowersox *et al.* (2023) in the United States, logistics planning is essential for enhancing operational efficiency across various sectors. The researchers employed a mixed-methods approach, utilizing qualitative interviews and quantitative surveys to gather comprehensive data from 200 logistics managers in diverse industries. The analysis relied on regression techniques to identify key relationships. The study found that organizations with effective logistics planning achieved a 30% improvement in delivery speed and a 20% increase in customer satisfaction, underscoring the critical role of logistics in strategic decision-making.

According to a study conducted by Bowersox *et al.* (2023) in Nigeria, logistics planning is crucial for improving operational efficiency in various sectors, particularly in agriculture and manufacturing. The researchers employed a mixed-methods approach, combining qualitative interviews with 120 logistics managers and stakeholders in these industries. Utilizing regression analysis to process the data, the study found that organizations with effective logistics planning achieved a 40% improvement in inventory turnover and a 30% increase in customer retention rates. These findings underscore the importance of integrating logistics strategies into business operations to enhance efficiency and competitiveness in Nigeria's evolving market landscape.

According to Mukucha and Chari (2021), information technology (IT) systems play a vital role in modern logistics planning. Technologies such as warehouse management systems (WMS), transportation management systems (TMS), and enterprise resource planning (ERP) software enable organizations to automate and integrate various logistics processes. IT systems enhance visibility, accuracy, and efficiency within logistics operations. According to CSCMP (2017), continuous monitoring, analysis, and improvement are critical for effective logistics planning. Organizations need to monitor key performance indicators (KPIs), analyze operational data, and identify areas for improvement. Continuous improvement initiatives enable organizations

to enhance logistics processes, optimize resource utilization, and align with changing market conditions.

2.2 Supplier Performance in Public Organizations

A study conducted by Mwanakombo (2023) examined factors influencing supplier performance in public organizations, particularly the Bahi District Council. This research used a cross-sectional survey design, collecting data from 86 suppliers. The analysis employed regression techniques to assess the impact of logistics practices on metrics like delivery reliability, quality, and responsiveness. Findings indicated that effective logistics planning enhances supplier performance, with delivery reliability improving by 30% and quality by 20%.

According to Parnell (2016), clear communication between suppliers and public organizations is essential for maintaining high performance levels. Suppliers who received regular updates and feedback were more likely to meet or exceed expectations, highlighting the importance of communication in fostering strong relationships.

A study conducted by van der Meer-Kooistra and Vosselman (2012) emphasized the role of training initiatives in enhancing supplier performance. Suppliers participating in logistics training programs showed improved metrics compared to those who did not, underscoring the value of investing in supplier development.

A study by Cousins and Menguc (2006) found that organizations engaging in supplier performance evaluations and providing constructive feedback are likely to see improvements in supplier capabilities. Regular assessments help identify areas for improvement and foster a culture of continuous enhancement.

According to Changelima, Mushi, and Mwaiseje (2021), the relationship between logistics practices and supplier performance is particularly critical in the public sector. Timely delivery of goods and services is vital for effective public service delivery, especially in healthcare and infrastructure.

A study conducted by Hu and Zhao (2018) indicates that external factors, such as market conditions and regulatory changes, significantly impact supplier performance. Suppliers in stable markets with clear regulations tend to perform better, suggesting public organizations must consider external influences when evaluating supplier performance.

3. 0 Methods

. This research utilized a cross-sectional design to understand the causal relationship between logistics planning and supplier performance among suppliers in Bahi distric, allowing for data collection at a single point in time. A mixed methods approach was employed, incorporating quantitative surveys of 86 suppliers and qualitative semi-structured interviews with key informants. The target population included 123 registered pre-qualified suppliers and procurement officers, with a sample size of 94 determined using Solvin's formula (Eq 1).

$$n = \frac{N}{1 + N(e)^2} \dots \dots \dots (1)$$

Whereby:

n = number of sample sizes,

N = total of target population

e = standard error of sampling.

$$\text{Sample Size} = \frac{123}{1 + 123 * (0.05)^2} = 94.0726577438 \approx 94$$

From the computation, the total sample of 94 pre-qualified suppliers and procurement officers from PMU were considered in this study.

Furthermore, data collection involved the use of semi-structured questionnaires with both closed and open-ended questions. Both descriptive and inferential statistical techniques were utilised in analysing the collected data, with the application of regression models in assessing the effects of logistics planning practices on supplier performance. The model is expressed under the following equation;

$$SP = \beta_0 + \beta_1 ADoT + \beta_2 RosA + \beta_3 Co\&Cd + \varepsilon \quad (2)$$

Where.

SP = Supplier Performance, ADoT = Adoption of Technology, RosA = Resource Allocation, = Collaboration and Coordination, $\beta_0, \beta_1, \beta_2$, and β_3 are coefficients of independent variables; and ε = is error term.

The study measured variables using a 5-point Likert scale. Supplier Performance (SP) ranged from "Very Poor" to "Excellent." Adoption of Technology (ADoT) measured from "Not at all" to "To a great extent." Resource Allocation (RosA) and Collaboration and Coordination (Co&Cd) were assessed from "Very low" to "Very high." Key performance aspects included on-time delivery, order accuracy, and product quality.

Data reliability was ensured using a test-retest method to assess consistency over time and internal consistency measured by Cronbach's alpha, aiming for a value above 0.7 (Kumar, Maiti, & Gunasekaran, 2018). Validity focused on whether instruments accurately measured intended constructs through construct and criterion assessments (Saidi & Siew, 2019).

4.0 Results and Discussion

Descriptive statistics and multiple regression methods were used to analyze logistics planning practices among suppliers in Bahi District. The findings revealed that many suppliers employ basic inventory, transportation, and warehouse management techniques. The regression analysis quantified the impact of these practices on supplier performance, highlighting the importance of effective logistics planning.

4.1 Level of Logistics Planning Practices by Suppliers in Bahi District

The findings from Table 1 offer insights into the logistics planning competencies among suppliers to Bahi District Council, revealing that over half of the respondents rated their abilities as fair, with 24 suppliers (27.91%) categorizing them as such, 18 suppliers (20.93%) as poor, and 10 suppliers (11.63%) as very poor. This indicates a lack of essential elements for reliable institutional fulfillment, as many suppliers struggle with coordinated transport and optimized inventory to adapt to fluctuating production outputs. These results align with Changalima et al. (2021), which found only 5-10% of suppliers conducted demand forecasting or coordinated delivery scheduling in Dodoma City. Similarly, the high proportion of suppliers rating their capabilities as merely fair corresponds with Berut (2020), which reported insufficient logistics training and technology resources among South African SMEs. Additionally, the constraints faced by 18 suppliers due to a lack of distribution foresight echo AFAAS (2018), which noted crop losses from inadequate transport scheduling. The limited skills preventing 10 suppliers from implementing proactive inventory strategies also align with Bortz et al. (2024), highlighting competence gaps in construction SMEs. Furthermore, the 24 suppliers (27.91%) viewing logistics as a secondary concern rather than a strategic lever reflects Matebese-Notshulwana (2021), which found resource constraints leading manufacturers to prioritize production over logistics training. Collectively, these studies validate the constraints identified among suppliers and suggest the need for evidence-based interventions to address weaknesses and optimize logistics practices in the region.

Table 1: Level of logistics planning Practices by Suppliers in Bahi District

Response	Frequency	Percentage
Excellent	10	11.63%
Good	24	27.91%
Fair	24	27.91%
Poor	18	20.93%
Very Poor	10	11.63%
Total	86	100.00%

Source: Field Data 2024

4.2 Logistics Planning Practices Employed by Suppliers in Bahi District

The results in Table 2 highlight logistics practices among suppliers, revealing areas for improvement. Inventory management is employed by 62 suppliers (72.10%), reflecting findings from AFAAS (2018) that identified it as a common practice, though many still rely on manual record-keeping. Transportation management is utilized by 45 suppliers (52.3%), echoing challenges outlined by Changalima et al. (2021) regarding coordination issues. Warehouse management, adopted by 55 suppliers (64%), mirrors basic storage practices noted in South African SMEs (Matebese-Notshulwana, 2021). Overall, current practices appear basic, suggesting a need for technology-driven enhancements.

Table 2: Logistics planning practices employed by Suppliers in Bahi District

Practice	Frequency	Percentage
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Inventory management	62	72.10%
Transportation management	45	52.30%
Warehouse management	55	64.00%
Supply chain visibility	32	37.20%
Demand forecasting	38	44.20%
Supplier relationship management	23	26.70%
Other (please specify)	19	22.10%

Source: Field Data 2024

4.3 The Impact of Logistics Planning Practices on Supplier Performance.

Prior to analysis, assumptions of normality, linearity, multicollinearity and outliers were checked to ensure the validity and reliability of the regression results (Shatz 2024). As this study utilized primary data collected from suppliers, mean scores were calculated for each variable to conduct the linear regression with continuous variables. Checking assumptions was especially important given the ordinal nature of the original Likert data converted to interval variables using the means. This ensured the most accurate and meaningful insights could be derived from the regression model.

A multiple linear regression was performed to assess the status of logistics planning practices on supplier performance among Bahi District. Table 3 shows the model summary. The R value of 0.772 indicates a high correlation between the independent and dependent variables. The R square value of 0.639 suggests that 63.9% of the variance in supplier performance can be explained by logistics planning practices. The adjusted R square value is only slightly lower at 0.688, indicating a good fit of the model to the observed data (Lozhachevska et al. 2023)

Overall, these results show a strong positive relationship between logistics planning practices and supplier performance among Bahi District institutions, aligning with previous research on the benefits of collaborative planning (Chen et al. 2019)

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.772 ^a	0.639	0.688	0.114

a. Dependent Variable: Supplier Performance

b. Predictors: (Constant), Logistics planning practices (Adoption of Technology, Resource Allocation, Collaboration and Coordination).

Source: Field Data, (2024)

Furthermore, to examine the model fit, an ANOVA was conducted and is presented in Table 10. The ANOVA results in Table 4 indicate the regression model is significant ($p = .003$), which is below the .05 level of significance (Omoruyi and Orobator 2022). This provides further evidence that at least one of the predictors (technology, resources, collaboration) contributes to explaining variations in supplier performance.

The F ratio of 65.268 also confirms the model as a good fit to the data. In summary, the ANOVA validates the model is not due to chance, but rather reflects a true relationship between the variables under study.

Table 4: Analysis of Variance (ANOVA)

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	44.97	3	14.9917	65.268	.003 ^b
Residual	18.83	82	0.2297		
Total	63.81	85			

a. Dependent Variable: Supplier Performance

b. Predictors: (Constant), Logistics planning practices (Adoption of Technology, Resource Allocation, Collaboration and Coordination).

Source: Field Data, (2024)

Moreover, results presented in Table 5 provide important insights into the relationship between logistics planning practices and supplier performance among institutions in Bahi District, the coefficient for technology adoption ($B=0.1945$) offers valuable information regarding its predictive impact on supplier performance. Specifically, the positive coefficient value of 0.195 implies a unit increase in technology adoption will be associated with a 19.5% increase in the supplier performance in Bahi district. This finding affirms the hypothesis that greater adoption of technology in logistics planning benefits suppliers through enabling more efficient coordination and sharing of timely information, as found in previous empirical research (Changalima et al. 2021). Streamlined communication facilitated by technology allows for improved responsiveness to demand changes or issues arising within supply chains.

Table 5: The status of logistics planning practices on supplier performance

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	1.0134	0.5715		0.0410
	Adoption of Technology	0.1945	0.0255	0.3011	0.0007
	Resource Allocation	-0.1318	0.0300	-0.3291	0.0003
	Collaboration and Coordination	0.6084	0.5774	0.6171	0.0769

a. Dependent Variable: Supplier Performance

b. Predictors: (Constant), Logistics planning practices (Adoption of Technology, Resource Allocation, Collaboration and Coordination).

Source: Field Data, (2024)

From a methodological perspective, the use of a coefficient to quantify the predictive impact of each independent (predictor) variable conveys the expected change in the dependent variable (supplier performance, in this case) per one unit increase in the technology adoption), while statistically controlling for the effects of other predictors in the model. This approach isolates the unique contribution of technology adoption from potential confounding effects of correlated predictor variables.

Practically, quantifying the predictive relationship between technology use and supplier performance offers empirical guidance for institutions in Bahi District regarding priority areas for technology investments aimed at strengthening supplier linkages and performance outcomes. Additionally, the results establish a baseline for future studies to monitor impacts on suppliers from newly implemented e-procurement systems or data sharing initiatives within district-level supply chains.

Furthermore, Resource allocation has a negative coefficient ($B=-0.1318$), revealing that for each additional unit of resource shortage, supplier performance could decrease significantly ($p=0.0003$) by an average of 13 percent. This corroborates literature emphasizing the detrimental effects of under-resourcing supply chain functions (Mchopa, 2024). This finding also aligns with previous research demonstrating a negative relationship between inadequate resources and supplier performance (Farah Jawdat Khaled 2019)

Most notably, the extremely low p-value ($p=0.0003$) attached to the resource allocation coefficient provides robust evidence that this negative relationship is highly statistically significant. This affirms hypotheses drawn from prior empirical studies emphasizing adequate resourcing is critical for effective supply chain planning and management practices that support high supplier performance (Changalima et al. 2021). When institutions face shortages in areas such as staffing, funding, or tools, it impedes their ability to effectively manage supplier relationships through relationship building activities and responsiveness to issues (Sharma and Joshi 2023)

Practically, quantifying resource allocation's negative impact establishes it as a priority concern requiring remediation to strengthen supplier partnerships and performance in Bahi District. Targeted investments in personnel, tools and budgets could help mitigate this risk factor revealed by the empirical findings (Bortz et al. 2024)

While collaboration's positive coefficient ($B=0.6084$) aligns with its theorized benefits Mkhize(2023), the contribution was not quite significant ($p=0.0769$) [2]. However, the result is still meaningful given collaboration's importance is well-established. The direction of the collaboration coefficient supports hypotheses that collaborative practices strengthen supplier relationships and performance outcomes. However, the lack of statistical significance ($p>0.05$) indicates this relationship could be due to chance based on the characteristics and size of the present sample, as well as other limitations of the model (Farah Jawdat Khaled 2019). Statistical significance testing is dependent on sample properties, and other unmeasured factors may obscure effects to some degree.

Still, a substantial body of conceptual and empirical literature provides a strong theoretical basis for expecting collaboration to benefit suppliers. Qualitative case studies also highlight how collaboration enables joint problem-solving, knowledge exchange, flexibility, and innovation. While quantitative validation was not achieved here, the preponderance of prior evidence lends credence to the directional result (Montalbn-Domingo et al. 2019)

From a practical perspective, institutions may still realize advantages from collaboration in an anecdotal or qualitative sense through improved responsiveness, innovation, and resilience (Boukachour and Benaini 2023). Future quantitative research could explore contingencies like the moderating role of trust between partners (Lozhachevska et al. 2023). Larger and more diverse samples may also yield significant effects.

5.0 Conclusion

This study underscores the importance of logistics planning practices in enhancing supplier performance in Bahi District. Findings reveal that 72.10% of suppliers use basic inventory management techniques, with significant potential for improvement. The regression analysis shows a strong correlation ($R = 0.772$) and explains 63.9% of performance variance. Investing in technology and resources is essential, as each unit increase in technology adoption is associated with a 19.5% improvement in performance. Additionally, while collaboration shows a positive coefficient ($B = 0.6084$), it lacks statistical significance ($p = 0.0769$), indicating a need for further exploration to optimize overall efficiency and performance.

5.1 Study Conclusion

In conclusion, this research has shed light on the critical role of logistics planning practices in enhancing supplier performance in Bahi District. Findings reveal that 72.10% of suppliers rely on basic inventory management, indicating significant opportunities for improvement. The regression analysis demonstrates a strong correlation ($R = 0.772$) and explains 63.9% of the variance in supplier performance. Importantly, a unit increase in technology adoption is associated with a 19.5% enhancement in performance. While collaboration shows a positive impact ($B = 0.6084$), its significance ($p = 0.0769$) suggests further exploration is warranted. Overall, targeted investments in technology and resources are essential for optimizing logistics practices and improving supplier efficiency.

5.2 Study Implications

This study highlights several key implications for stakeholders in logistics and supply chain management in Bahi District. The strong correlation between logistics planning practices and supplier performance emphasizes the need for suppliers to adopt more advanced inventory and transportation management techniques. Investing in technology could yield a 19.5% improvement in performance, making it essential for suppliers to enhance their logistics competencies through targeted training programs, particularly in demand forecasting and resource allocation. Additionally, while collaboration showed positive trends, its lack of statistical significance suggests that fostering stronger relationships among suppliers should be prioritized to improve knowledge sharing and innovation. Policymakers and local authorities should consider these findings in designing support programs for SMEs, focusing on

technology adoption and resource provision to optimize logistics practices and drive better economic outcomes in the region.

5.3 Areas for Further Studies

Future research should investigate barriers to technology adoption, explore collaboration dynamics, conduct longitudinal studies on performance impacts, and examine the effects of emerging technologies on logistics efficiency.

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The Effects of Strategic Audit on the Performance of Public Procuring Entities Case of Kondo District Council

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Abstract

Tanzanian Local Government Authorities face significant challenges concerning procurement performance whereby Periodic procurement audits are conducted to ensure compliance with regulations, transparency, and accountability in the procurement process. This study aimed to determine the influence of strategic audits on the performance of public procuring entities. The study was guided by Agency theory and employed descriptive research design utilizing a mixed method approach. The study population consisted of 125 employees from the Kondo District Council in Dodoma and a sample size of 96 employees was obtained using simple random sampling. Quantitative data was collect using questionnaire an interview guide was used to collect qualitative data. The quantitative data were analyzed by using descriptive analysis and linear regression. Qualitative data was analyzed by thematic analysis. The study found that functions of strategic audit such as Procurement goals, Alignment to organization mission, and Supplier buyer Relationships have a statistically significant effect on public procurement performance. Therefore, the study recommended that PPRA and LGAs facilitate regular dialogues and knowledge-sharing platforms among government agencies, to share best practices and lessons learned regarding procurement audits and their impact on organizational performance. Establish cross-functional task forces or working groups to identify and address common challenges and opportunities related to procurement audits and their integration with overall organizational performance.

Keywords; Procurement, Compliance Audit, Strategic Audit, Public Procuring Entities Performance

Introduction

A public procurement audit aims to assess government procurement operations to determine whether or not established protocols have been followed(Hein et al., 2020). The purpose of a periodic procurement audit is to ascertain if the company making the purchase adhered to the correct protocols. To safeguard public assets, the auditors must assess the suitability of the policies and guidelines used in the operations. According to (Bergman, 2023), public periodic procurement audits ensure accountability, compliance, and transparency, improving performance and allowing for the realization of value addition in public procurement. while strategic auditing is a comprehensive oversight style that reflects the shift in management's interest from performance measurement to performance management, through the pivotal role

of external audit linking its output to the strategic planning process. the concept rooting efficiency and effectiveness under the bureaucratic system and linking its nature of strategic auditing in response to recent trends of governmental performance audit from other bodies.

Globally, the United States of America (USA) and the United Kingdom (UK) were the first great war powers to employ procurement audits in the 1880s, albeit there was no formalization at the time (Drozd *et al.*, 2021). One of the first notable public procurement audit rules in American history was the US Federal Procurement Policy, established in 1859. The government's interest in procurement, particularly in defense procurement, was made clear by the policy. Insufficient acquaintance with procurement issues among staff dealing with procurement leads to pessimistic consequences such as non-conformity with the procurement system of performing, which leadsto changes in procurement audits (Raymond, 2018).

Strategic audit is a system to identify the extent to which the company's strategies are implemented, i.e. how successful it is in reaching its goals and objectives (Abdullah Jaf *et al.*, 2020). There is a high role for adopting the strategic auditing method through (Auditing the company's status) to improve the quality of the audit, There is a high role for adopting the strategic auditing method through (internal environment auditing) to improve the quality of auditing, there is a high role for adopting the strategic auditing method through (external environmental auditing) to improve the quality of auditing and there is a high role for adopting the method of strategic auditing through (auditing stakeholders) to improve the quality of auditing (Abdullah Jaf *et al.*, 2020)

In Africa, (Bedaso & Ayalew, 2019) learn how to cite discovered that efficient public procurement auditing in the Federal public procurement and property administration agency is strongly positively correlated with the legal and regulatory framework surrounding public procurement, the competence of the auditor, organizational independence, the auditee's record management systems, and the auditing process itself. Obura *et al.*, (2023) contended that supply chain management performance in state businesses inside Kenya's Ministry of Transportation is impacted by compliance audits of the procurement system.

Public procurement auditing is neither a newer nor an older role in Tanzania, where it has been used since PPA No. 21 (2004). Currently, all public organizations in the nation are required to adopt the practice. The Public Procurement Regulatory Authority (PPRA) is in charge of organizing procurement audits for all public procuring bodies through its authorized and certified procurement auditors, in accordance with PPA No. 7 of 2011 as revised in 2016. The procurement audit is carried out from both internal and external viewpoints, and its sole purpose is to impact the entire procurement process, from contract execution to planning (Maredia *et al.*, 2019).

The Local Government Authorities (LGAs) in Tanzania confront significant issues, such as inadequate internal control, a lack of accountability, and ineffective financial control measures, despite the procurement audit serving as a watchdog. Various research, like (Jembe, B. K., and

Wandera, 2019), concur that the primary purpose of public procurement audits is to guarantee the efficacy of public procurement. Most of these studies demonstrate a connection between procurement audits (compliance, value for money, and strategy) and the achievement of procurement effectiveness in the public sector (Sallwa, 2022). In Tanzania, strategic procurement audits are infrequent, conducted at extended intervals, and in some cases, not yet adopted as a practice (Mwarizo, 2021).

According to (Cag, 2022), Tanzanian Local Government Authorities (LGAs) face significant challenges concerning procurement performance, whereby procurement audits are conducted to ensure compliance with regulations, transparency, and accountability in the procurement process. However, several negative impacts arise from these audits, including delays in procurement processes, increased administrative burden, decreased trust in the procurement system, and potential adverse effects on the business environment). Thus, the impacts of procurement audits were the subject of this study.

Sallwa (2022) looked at how procurement practices in Tanzanian public organizations were affected by procurement audits. The results showed that the strategic audit revealed a negligible impact on the efficiency of the procurement process. The report suggests that to increase the efficacy of procurement and public finances management overall, the government and PPRA should prioritize and ensure that issues and suggestions made by procurement auditors are addressed appropriately. They should also strengthen procurement audits.

Among the frequently mentioned factors recorded as in charge of procurement effectiveness are procurement cycle duration, quality of the purchased product or service, lead time, economic efficiency of the procurement process, and return on investment (Yussuf et al., 2024). Little is known on the effects of procurement audits on performance of local governments, notably in Kondoa. Therefore, this study aims to close the gap by determining the influence of strategic audits on the performance of public procuring entities at Kondoa District Council.

Theoretical Review

Agency Theory

According to Jensen (2006), an agency relationship is a legal arrangement wherein one or more parties, known as the principals, appoint another party, known as the agent, to perform a service on their behalf, thereby granting the agent some degree of decision-making authority. According to the P-A theory, accounting officers in the public sector are required to periodically and reasonably report how they have used the funds that have been allotted to them, voting and realizing outputs based on their procurement work plan and how they have complied with the procurement law, which protects the public interests (Ngacho, 2018).

Principal-agent relations innate risks are narrowed by an well-organized audit doings. The auditor's report on whether the agent used resources in line with the principal's wishes and its unbiased, independent assessment of the agent's accounting correctness are relied upon by the principal. Audits of procurement process compliance thus serve to reassure citizens and

oversight authorities that vote controllers and managers have used the monies allotted to them efficiently and within the legal limits (IIA, 2006). In light of this, (M. J. Rahman et al., 2023) assert that the auditor is trusted to deliver an unbiased and independent opinion on the entity's financial report in their capacity as professional advisors, thereby maximizing the principal's objective.

The perspective used here is in line with agency theory's presumptions that agents—purchasing officials—are self-interested, rational, and rational utility maximizers (Payne & Petrenko, 2019). Agents act cunningly and with self-interest. To put it another way, they are opportunistic in the sense that, when it serves their personal interests, they fully avoid work in an attempt to minimize it. They are not expected to knowingly fabricate or lie about that effort. Assuming that the principal and agent do not possess identical levels of information, the agent may use the circumstances, turning the scenario against the principal. Asymmetric information frequently leads to this latter circumstance, which is referred to as a moral hazard.

Agent theory is pertinent to our investigation notwithstanding its detractors. It states that the purpose of procurement process compliance audits conducted by the PPDA Authority, the internal audit function, and other statutory audit agencies is to verify to the government's principal that funds were allocated to the public officials, the agent, for the specific purpose of providing services. Hence, audits of the compliance of the procurement process help to restrain the agent's opportunistic actions, ensuring that the economic metrics of value for money in public procurements are met as well as the objectives of efficacy, competition, efficiency, and effectiveness.

Empirical Literature Review

Henriksson(2022) investigated how supply chain audits affected the industrial supply chains of Finnish enterprises. The results demonstrated the effectiveness of supplier audits in supply chain risk management. An efficient method of transferring ethical supply chain practices was through audits. Enhancing sustainability and transparency in the supply chain was made possible at large

According to (Etse, D. K., & Asenso-Boaky, 2020)the study, the main objective of Ghana's public procurement audit programme is to determine whether procurement performance complies with the pre-established standards and goals within the given parameters so that any necessary adjustments can be made to increase the effectiveness of procurement. This study evaluated the public procurement audit procedure in practice with a case study of the Public Procurement Authority headquarters in Kumasi and the procurement unit of the Kumasi Polytechnic in Ghana. As part of the study's suggestions, the researchers suggested critically examining the procurement audit reports. They emphasized how important it is to enhance procurement standards to boost Ghana's procurement performance.

A study by Jembe and Wandera evaluated whether there was a connection between procurement performance and audits. This quantitative study's foundation was a case study of Compassion Kenya, an international nongovernmental organization headquartered in Mombasa, Kenya, and nongovernmental organizations in Kenya. Using multiple regression analysis and Pearson correlation, this study was able to assess the association between the specified variables. The results showed that the variable and procurement audit have a positive and significant association that significantly affects the procurement performance of Kenyan nongovernmental organizations (Jembe, B. K., and Wandera, 2019).

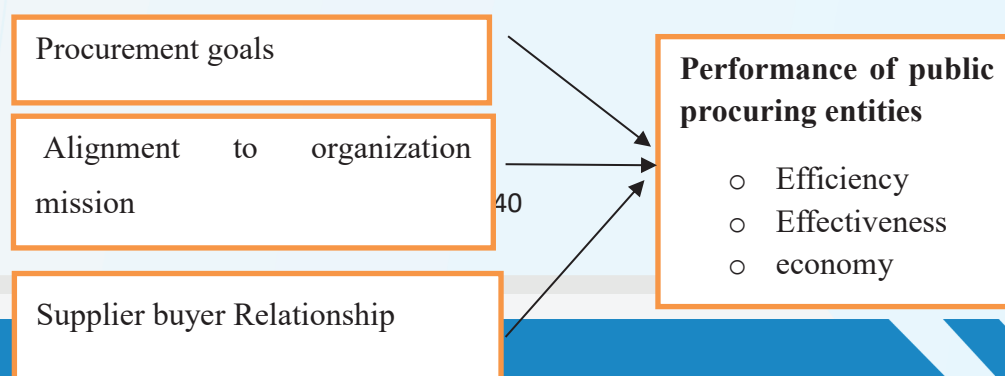
Sallwa (2022) looked at how procurement practices in Tanzanian public organizations were affected by procurement audits. The results showed that the compliance audit provides the second-highest significant contribution to procurement effectiveness after the value-for-money audit. However, the strategic audit revealed a negligible impact on the efficiency of the procurement process. The report suggests that to increase the efficacy of procurement and public finance management overall, the government and PPRA should prioritize and ensure that issues and suggestions made by procurement auditors are addressed appropriately. They should also strengthen procurement audits (Sallwa, 2022).

Procurement audits improve the efficiency and effectiveness of the procurement function and the organization as a whole, evaluated their contribution to improving moral and legal procurement procedures. The improvement of ethics and legal compliance were two other effects of procurement audits. The study concentrated only on finding the effects of procurement audits and did not go into great detail on the expected relationship between procurement effectiveness and procurement audits. Consequently, it concluded by advising department heads and procurement professionals to guarantee integrity and objectivity in procurement auditing for the company's benefit and prosperity (Mwarizo, 2021)

Mshamu, (2020) used Temeke Municipal Council as a case study in a study to evaluate the efficacy of the procurement process in the public sector. The lead time performance, cost-effectiveness, legal compliance, ethical practices, and successful procurement audit were among the various elements that the researcher demonstrated as contributing to the effectiveness of the procurement process. As there is no guarantee about the conduct and behavior of procurement specialists, the researcher described the procurement audit as a watchdog of the entire procurement process in the public sector during the discussion. Nevertheless, the study did not demonstrate the extent to which procurement audits are crucial instruments for monitoring the sector's whole procurement function.

Conceptual framework

Independent Variable



Material and Methods

This was a descriptive research design which was conducted at Kondoa District Council in Dodoma. Because was among of district council which reported by CAG report 2021/2022 had malpractices which are caused by procurement practices. The study utilized a mixed methodology that integrates quantitative and qualitative techniques to gather data on the impact of procurement audits on the performance of public organizations at the Kondoa District Council. While qualitative data was gathered through open-ended interviews using interview guides, quantitative data was gathered through surveys using standardized questionnaires.

Based on the target population of 125 staff members at the council, the study's sample size was 96, as determined by the statistical formula developed by Yamane (1967). $n = \frac{N}{1+N(e^2)}$. The survey method of data collection was employed, with interview guides and closed-ended questionnaires serving as tools for gathering quantitative data from respondents.

Therefore, the qualitative data used thematic analysis that identified themes, design, and meaning by analyzing the content of a text to get a detailed understanding of specific problems through interviews. The collected quantitative data were entered into the Statistical Packages for Social Sciences for analysis, SPSS Version 21. To determine the effect of strategic audit on performance of public procuring entities at Kondoa District Council.

X_3 = Supplier buyer relationship

β_1 =Coefficient of Procurement goals

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon \dots \dots \dots$ (iii)

Where:

Y = Procuring performance

β_0 =Constant

X_1 = Procurement goals

X_2 = Alignment to organization mission β_2 = Coefficient of Alignment to organization mission

β_3 = Coefficient of supplier buyer relationship

ε = Error term

Qualitative data was collected from the Head of procurement, chairperson of the tender board, and chief Auditor to provide experienced and detailed information; thematic analysis was used to analyze qualitative data by focusing on systematically categorizing and interpreting textual data.

Findings and Discussion

Demographic Characteristics of Respondents

A number of demographic factors that shaped the research question were examined and talked about. The study specifically aimed to comprehend the gender, age, degree of education, and experience that were investigated. Employees with 18–27 years old were 21 and formed 21.9%, employees with 28–37 years old were 41 and formed 42.7%, employees with 38–47 years old were 18 and formed 18.8%, and employees with 48 years and above were 16 and formed 16.7%, as Table 6 illustrates. This verified that the number of workers under 38 is high—64.6%—which implied that they are capable, youthful, and strong, and they can handle a variety of tasks for the company. As such, their presence is unavoidable. According to a study by Ramadhani (2020), the practice of multigenerational workplace mentorship through a mixed-age workforce, in which workers of all ages have the chance to impart knowledge, experience, and skills to and learn from one another, Nonetheless, an employee's productivity decreases with age.

Table 1 demonstrates that the respondents with a certificate are 14 employees, or 14.6%; those with a diploma are 14 employees, or 14.6%; those with an advanced diploma are 7, or 7.3%; those with a bachelor's degree are 41 employees, or 42.7%; and those with a master's degree and above are 20, or 20.8%. As a result, elites with degrees were readily accessible in various public entities. This indicates that the quantity of bachelor degrees was higher than other academic qualifications. Bachelor degrees were offered by the majority of universities.

The results presented in Table 1 show that 11.6% of participants had worked for a local government authority for one to five years, followed by 35.42% for five to fifteen years, and 53.1% for more than fifteen years. Considering that the respondents were aware of the entity's procurement procedures, this was significant. Due to their extensive work experience, the respondents were likely well-versed in both their roles and the general workplace, which included organisation and management practices (DFES, 2002). We can draw the conclusion that these respondents were qualified to share adequate details and viewpoints about work-life balance experiences in the banking sector and how these affect employees' sense of "job satisfaction."

Table 1: Demographic characteristics of respondents

Demographic	Statement	Frequency	Percentage
Age	18-27	21	21.9
	28-37	41	42.7
	38-47	18	18.8
	≥ 48	16	16.7
Education level	Certificate	14	14.6
	Diploma	14	14.6
	advance diploma	7	7.3
	Degree	41	42.7
Experience	master degree and above	20	20.8
	Below 5	11	11.6
	5-15	34	35.42
	Above 15	51	53.125

Descriptive Analysis of Strategic Audit on Procuring Performance

The findings in Table 2 show that the majority of the respondents, 40.6% (39) strongly disagreed with the statement that strategic audit has hindered the achievement of our procurement goals; respondents 36.5% (35) agreed; respondents 7.3% (7) were neutral; respondents 10.4% (10) agreed; and respondents 5.2% (5) strongly agreed that strategic audit has hindered the achievement of our procurement goals. The results imply that the strategic audit did not hinder the achievement of our procurement goals. The results also show that strategic audit has hindered the achievement of procurement goals (mean = 2.0131), indicating respondents have a lower response to the questions raised. The answer indicated that strategic auditing does not hinder the achievement of our procurement goals.

The findings in Table 2 show that the majority of the respondents, 46.9% (45), strongly disagreed with the statement that strategic audits have led to a significant misalignment with the organization's mission. Respondents 25% (24) disagreed, respondents 5.2% (5) were neutral, respondents 11.5% (11) agreed, and respondents 11.5% (11) strongly agreed that strategic auditing has led to a significant misalignment with the procuring entity's mission. The results imply that strategic audits do not lead to a significant misalignment with the procuring entity's mission. The results also indicate that the strategic audit has led to a significant misalignment with the procuring entity's mission, with a mean of 2.1563, indicating respondents have a low response to the questions raised. The answer indicated that strategic audits did not lead to a significant misalignment with the procuring entity's mission.

Table 2 revealed that the majority of the respondents, 40.6% (39) strongly disagreed with the statement that strategic audits have negatively affected relationships with suppliers. Respondents 37.5% (36) disagreed, respondents 6.3% (6) were neutral, respondents 11.5% (11) agreed, and respondents 4.2% (4) strongly agreed that the strategic audit has negatively affected relationships with suppliers. The results imply that strategic audits have negatively affected relationships with suppliers. The results also indicate that strategic audits have negatively affected relationships with suppliers was 2.0141, indicating respondents have a low response

to the questions raised. The answer indicated that strategic audits have positively affected relationships with suppliers.

Table2: Strategic audit on procuring performance

Statement	SD% (F)	D% (F)	N% (F)	A% (F)	SA% (F)	Mean
Strategic audit has hindered the achievement of our procurement goals	40.6(39)	36.5(35)	7.3(7)	10(10.4)	5.2(5)	2.0131
Strategic audit has led to a significant misalignment with our organization's mission.	46.9(45)	25(24)	5.2(5)	11.5(11)	11.5(11)	2.1563
The strategic audit has negatively affected our relationships with suppliers.	40.6(39)	37.5(36)	6.3(6)	11.5(11)	4.2(4)	2.0141

The fact that strategic audit on procuring performance as agreed by one of the key informative interview

“....Conducting a strategic audit helps in identifying the strengths and weaknesses of an organization’s current strategies and operations. By assessing these internal factors, the audit enables the organization to capitalize on its strengths and address areas of improvement, ultimately enhancing performance.....”

Sallwa (2022) discovered similar results, indicating that the compliance audit comes in second to the value-for-money audit in terms of major contribution to procurement effectiveness. However, the strategic audit revealed a negligible impact on the efficacy of procurement. The results support Pasula et al.'s (2018) assertion that supply chain performance may be enhanced by removing possible and unforeseen expenses

Regression Analysis on Strategic Audit on Procuring Performance

In order to ascertain the link between the independent and dependent variables, the study used a multiple regression analysis. The regression formula was

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon \dots \dots \dots (iii)$$

Where:

Y= Procuring performance

β_0 =Constant

X1= Procurement goals

X2= Alignment to organization mission

X3= Supplier buyer relationship

β_1 =Coefficient of Procurement goals

β_2 = Coefficient of Alignment to organization mission

β_3 = Coefficient of supplier buyer relationships ϵ = Error term

Assumptions of Regression Analysis

a. Normality and Outliers

Kurtosis and skewness tests were conducted to detect whether the samples drawn from the population were normally distributed. Skewness measures the deviation of the distribution from symmetry, while kurtosis measures the peak of the distribution. For perfectly symmetrical data, the value of skewness and kurtosis is 0 (Field, 2013; Pallant, 2013; Ghasemi and Zahediasl, 2012). If the value of skewness and kurtosis is significantly different from 0, then the data are non-normal. However, since it is quite unlikely to be perfectly symmetrical, the values of skewness and kurtosis approximately range between -1 and +1. Descriptive analysis in Table 3 revealed the approximate normal distribution of the data related to all three variables under this study.

Table 3: Normality and Outliers

	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Procurement Goal	-.354	.246	.255	.488
Alignment to organization Mission	-.872	.246	-.324	.488
Supplier relationship	-.637	.246	-.633	.488

b. Multicollinearity

A variance inflation factor (VIF) analysis was conducted to test for multicollinearity in the regression model. Multicollinearity refers to the degree of correlation between predictor variables (Field, 2013). Multicollinearity in the data occurs when the independent variables are too highly correlated with each other. When VIFs are equal to 1, it indicates no or little multicollinearity, and when VIFs are greater than 1, it indicates moderate multicollinearity. With VIFs between 5 and 10, there is a high correlation, and when VIFs are greater than 10, it implies that coefficients are poorly estimated and there is a multicollinearity problem, which should be fixed accordingly (Sheskin, 2011). The analysis (Table 3) revealed that the VIFs for all predictor variables were found to be equal to 1, implying that the multicollinearity problem does not exist as the independent variables of the study are not correlated to each other.

Table 4: Multicollinearity Statistics

Variables	Tolerance	VIF
Procurement Goal	.865	1.156
Alignment to organization Mission	.818	1.223
Supplier relationship	.874	1.144

Model Summary

The table 4 below presents the model summary which determines the relationship between independent variables and the dependent variables.

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.461a	.212	.186	.99056

From the above findings, the correlation coefficient (R), which measures the relationship between the independent variables and the dependent variables, was 0.461, or 46.1%, which indicates a strong relationship between the two. On the other hand, the R-squared was 0.186, illustrating that the chosen predictors explain the dependent variable by 18.6%. This implies, on the other hand, that 81.4% of non-explained predictors are accounted for by aspects that are not used in this model.

Coefficients

The regression coefficient table, which offers the values of the regression equation for predicting the dependent variable from the independent variables, is another result of a regression study. The estimated coefficients (standardized coefficient), which are represented by the beta value in table 23 of the regression coefficient below, show how much the "scores" vary as a result of changes in any independent variable while keeping other independent variables (predictors) constant.

Table 5: Coefficients ^a

coefficients ^a		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	3.320	.292		11.384	.000
	Procurement Goal	.210	.093	.225	2.261	.026

Alignment to organization Mission	.195	.079	.252	2.462	.016
Supplier relationship	.283	.095	.295	2.981	.004

From table 5 of the regression coefficient above, it was indicated that every unit change in procurement goal (0.210) affects positively the procuring performance in the public sector (0.225), with a significant value of $P < 0.026$. Therefore, the analysis showed that the relationship was statistically significant since the p-value was 0.026, which was less than 0.05. From Table 5 of the regression coefficient above, it was indicated that every unit change of alignment to the procuring entity mission by 0.195 effects positively the procuring performance in the public sector by 0.252, with a significant value of $P < 0.016$. Therefore, the analysis showed that the relationship was statistically significant since the p-value was 0.016, which was less than 0.05.

It was also indicated that every unit change in supplier relationship by (-0.283) effects negatively the procuring performance in the public sector by (-0.295) with a significant value of ($P < 0.004$). Therefore, the analysis showed that the relationship was statistically significant since the p-value was 0.004, which was less than 0.05.

Analysis of variance of the model (ANOVA)

The results of the analysis of variance are displayed in Table 24 below. The analysis's results include the residual values from the regression analysis, mean square, degree of freedom (df), sum of squares, and regression. The P-value, which represents an indicator of whether the model is significant or not, was an intriguing value in the ANOVA table. P-values must be $p < 0.05$ in order to be considered significant.

Table 6: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	24.311	3	8.104	8.259	.000 ^b
	Residual	90.271	92	.981		
	Total	114.582	95			

The regression sum of squares, as shown in table 6 above, was 24.311. The overall significance of the model is demonstrated by the F-statistic, which is calculated by dividing the regression mean square by the residual mean square. In this case, the result was 8.104, 8.104. There was a 3.00 degree of freedom (df). With a substantial P-value of 0.01, $p < 0.05$, the model/relationship was statistically significant overall. In light of this outcome, it is important to conclude that the regression model fit the data and that the variables contributed to the planning and execution of purchase.

Conclusion and Recommendations

The objective of this study was to determine the effect of strategic audits on procurement performance at Kondoa District Council. Strategic audits do not hinder the achievement of our procurement goals; they do not lead to a significant misalignment with the procuring entity's mission; and strategic audits have positively affected relationships with suppliers. The regression coefficient above indicated that every unit change in procurement goal (0.210) effects positively the procuring performance in the public sector (0.225) with a significant value of ($P < 0.026$), every unit change in alignment to the procuring entity mission (0.195) effects positively the procuring performance in the public sector (0.252) with a significant value of ($P < 0.016$), and every unit change in supplier relationship (-0.283) effects negatively the procuring performance in the public sector (-0.295) with a significant value of ($P < 0.004$).

Study concluded that strategic audit does not hinder the achievement of our procurement goals, that strategic audit did not led to a significant misalignment with organization's mission, and strategic audit has positively affected relationships with suppliers. Regression coefficient above, indicated that every unit change procurement goal by (0.210), alignment to organization mission by (0.195), and unit change of supplier relationship by (-0.283) effects the procuring performance in Public Sector.

Recommendations

It was found that procurement audits on adherence to the required policies and procedures, procurement audit records, and procurement audits on internal control systems affect procuring entity performance. Therefore, the study recommended PPRA and LGAs to facilitate regular dialogues and knowledge-sharing platforms among government agencies, to share best practices and lessons learned regarding procurement audits and their impact on organizational performance. Establish cross-functional task forces or working groups to identify and address common challenges and opportunities related to procurement audits and their integration with overall organizational performance.

It was found that procurement audit on user need identification, procurement audit on procurement methods, and a procurement audit on adherence to the procurement budget affects procuring entity performance. Therefore, the study recommended PPRA and LGAs to develop comprehensive guidelines and checklists for procurement personnel to ensure thorough assessment of user needs during the procurement planning stage, implement periodic user satisfaction surveys to gather feedback on the relevance and appropriateness of procured goods and services, and establish a robust mechanism for incorporating user feedback and emerging needs into the procurement planning and decision-making processes.

It was found that Strategic audits do not hinder the achievement of our procurement goals; they do not lead to a significant misalignment with the procuring entity's mission; and strategic audits have positively affected relationships with suppliers. Therefore, the study recommended PPRA and LGAs to develop clear and comprehensive guidelines to ensure that procurement activities and decisions are consistently aligned with the organization's mission and strategic objectives, incorporate the assessment of mission alignment as a key component of the strategic

procurement audit process, and establish a robust feedback loop to integrate the insights from strategic procurement audits into the organization's strategic planning and decision-making processes.

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Role of Creativity and Innovations Skills in Enhancing Second-Hand Clothes Seller's Performance in Dodoma: A Case of Sabasaba Market

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Abstract

This study examined the role of creativity and innovation in enhancing the performance of second-hand clothes sellers in Dodoma. It focused on how these skills impact overall business outcomes. A cross-sectional research design was used with 154 respondents randomly selected. Data were collected through questionnaires and interviews and analyzed using descriptive statistics, chi-square tests and thematic analysis. The findings revealed significant links between creativity, innovation and business performance with chi-square tests at a 0.05 significance level confirming their importance in driving success. The study concluded that creativity and innovation are key predictors of performance in this market. It recommended incorporating entrepreneurship education into curricula with a focus on developing entrepreneurship skills to better prepare future young entrepreneurs.

Key Words: Innovative skills, creativity skills, second-hand clothes, sellers' performance and Dodoma City

1. Introduction

The second-hand clothes market has evolved into a significant economic activity globally, providing affordable clothing options to low and middle-income populations. This market has gained particular importance as a means of addressing the rising global concern over fast fashion and environmental sustainability (Farrant, Olsen, & Wangel, 2021). By promoting the reuse of textile products, the industry contributes to the reduction of waste and supports the circular economy (Morgan & Birtwistle, 2020). Sellers of second-hand clothes particularly in informal markets, depend heavily on entrepreneurship skills to navigate competitive environments, innovate their offerings and enhance their performance. As the second-hand market expands global reports indicate that the industry is set to double by 2028 (ThredUp, 2023). Creativity and innovation are becoming increasingly crucial for sellers to differentiate their products and meet changing consumer preferences toward sustainable fashion (Diddi *et al.*, 2021).

Entrepreneurship skills encompass various competencies such as financial literacy, communication, decision-making, risk-taking and problem-solving abilities (Bula, 2022). These skills are pivotal for second-hand clothes sellers in managing their businesses efficiently while seizing new market opportunities. Furthermore, understanding market trends and innovating in product presentation and customer service are critical for staying competitive, particularly as digital platforms have become vital for business growth (Parker & Weber,

2023). In such competitive markets, these skills enable sellers to adopt creative sourcing, marketing and selling strategies of which have a direct impact on their overall performance (Akingbola & Shutte, 2023). Strategies such as product curation and leveraging online marketplaces are increasingly prominent in the second-hand clothing industry.

In Asia, the second-hand clothes market is driven by factors such as urbanization, population growth and the increasing demand for affordable clothing. Countries like India, Philippines and Malaysia have seen thriving second-hand sectors, where entrepreneurship skills have been crucial to fostering innovation and business expansion (Deshpande et al., 2022). Sellers in this region often adopt creative sourcing strategies such as importing from international markets and engaging in online sales platforms which broaden their market reach (Fan & Liu, 2023). For instance, digital platforms like Shopee and Carousell in Southeast Asia have significantly boosted seller performance by providing access to broader consumer bases (Lee et al., 2023). Tailored alterations and customization are common customer service innovations that have further set businesses apart in competitive markets (Huang & Lee, 2023).

In the Americas, the second-hand clothing industry has also seen significant growth, particularly in the United States and Latin American countries driven by the rising consumer demand for sustainable fashion (Ruppert-Stroescu et al., 2022). In the U.S., platforms such as Poshmark and ThredUp have become essential for entrepreneurs scaling their second-hand clothing businesses (Lybarger & Stefaniak, 2023). Entrepreneurship skills like marketing, digital literacy and brand development have helped sellers target niche markets particularly those interested in vintage or designer clothing (Mackey & Walsh, 2023). Meanwhile, in Latin America sellers creatively combine traditional sales techniques with modern strategies like social media marketing to improve visibility and boost sales (González et al., 2023).

In Africa, the second-hand clothes industry commonly referred to as "mitumba" in East Africa, plays a crucial role in the economies of countries like Kenya, Uganda, Ghana and Tanzania (Juma et al., 2022). Entrepreneurship skills here are particularly critical as sellers face challenges such as complex supply chains, import restrictions, and fluctuating demand. African second-hand clothes sellers demonstrate high levels of creativity and innovation especially in product presentation and customer engagement in crowded markets (Musinguzi, 2023). Many sellers use culturally relevant marketing techniques, offer tailored clothing and provide personalized shopping experiences to enhance customer loyalty (Mburu & Njeru, 2023). The ability to adapt to market changes and introduce new fashion trends has significantly improved performance across the continent with creative sourcing and pricing strategies helping maintain competitiveness (Oketch & Otieno, 2023).

The combination of entrepreneurship skills with creativity and innovation enhances performance in several ways. For instance, product innovation enables sellers to repurpose or alter second-hand clothes, making their offerings more unique and attractive (Mackey & Walsh, 2023). Effective marketing strategies, such as leveraging social media platforms, allow sellers to reach broader audiences through visual storytelling and influencer partnerships (Lybarger & Stefaniak, 2023). Additionally, creative customer service including

customization, discounts and flexible payment options improves customer satisfaction and retention (Parker & Weber, 2023). Innovative business models like pop-up stores, mobile vending and online marketplaces provide sellers with alternative revenue streams helping them stay competitive in an ever-evolving market (Akingbola & Shutte, 2023).

Ultimately, entrepreneurship skills are fundamental to the success of second-hand clothes sellers across regions such as Asia, America and Africa. These skills combined with creativity and innovation, enable sellers to adapt market demands, differentiate themselves in competitive environments, and enhance overall performance (Ruppert-Stroescu et al., 2022). The application of entrepreneurship skills varies across regions, underscoring the importance of context-specific approaches in understanding their role in the second-hand clothing industry.

1.1.Statement of the Problem

Micro and small enterprises, such as second-hand clothes sellers significantly contribute to economic growth, but they often face substantial difficulties in maintaining their operations. A major factor behind the high failure rate of these businesses is the absence of key entrepreneurship skills, with creativity and innovation being particularly essential for success. Notably, research indicates that approximately 70% of new micro-sellers fail within their first five years, largely due to their inability to introduce innovative products, services or marketing strategies that could help them stand out in competitive markets (World Bank, 2019; Tambwe, 2015).

Moreover, creativity and innovation are crucial for the survival and growth of small enterprises, as they allow sellers to adapt to evolving consumer preferences, offer unique products and navigate competitive environments more effectively. Despite efforts by Tanzanian government to support small businesses through various policies and initiatives many of these ventures continue to struggle. This is primarily because they lack the creative skills necessary to generate new ideas or reimagine existing products in ways that align with consumer demands (URT, 2003; World Bank, 2019).

In addition, entrepreneurial competencies in creativity and innovation empower sellers to explore novel business models, leverage digital marketing strategies and deliver engaging customer experiences of which are critical for maintaining long-term business performance (Madatta, 2011; Meshack, 2014). However, many second-hand clothes sellers have limited access to training programs that specifically focus on developing these creative skills which further hinders their success (Nganu, 2018; Njenga, 2016). Therefore, lack of adequate training in creativity and innovation highlights the need for targeted programs that emphasize these skills as vital drivers of business success. By addressing this gap, this study seeks to offer insights into how entrepreneurial skills can be enhanced to improve the performance and sustainability of second-hand clothes sellers in Dodoma which ultimately supporting long-term economic growth.

1.2.Literature Review

This study is guided by following research questions (i) How do creativity skills contribute to enhancing the performance of second-hand clothes sellers at Sabasaba Market in Dodoma? and (ii) What is the impact of innovation skills on the performance of second-hand clothes sellers at Sabasaba Market in Dodoma?

1.2.1. Theoretical Literature

1.3.1. Schumpeter Theory of Innovation

This theory was established by economist Joseph Schumpeter in 1934, who posited that economic development is driven by innovation and creative destruction. This theory emphasizes that entrepreneurs introduce new products, processes or services that disrupt existing markets fostering competition and economic growth. Schumpeter assumed that innovations occur in cycles and are not merely incremental improvements instead, they represent fundamental shifts that can transform industries (Schumpeter, 1934). In the context of Tanzania, the applicability of Schumpeter's theory can be seen in the burgeoning entrepreneurial landscape where innovations in technology and business models are emerging despite existing economic challenges. For instance, mobile banking and e-commerce have revolutionized access to financial services and consumer goods enhancing overall business performance (Mziray, 2022). Additionally, the theory suggests that creativity is essential for adapting to market changes and consumer demands, which is crucial in Tanzania's dynamic economic environment (Ng'ang'a, 2023).

Mhando (2021) found that innovative practices among Tanzanian SMEs significantly correlated with improved competitiveness and profitability. Furthermore, research by Mhina (2023) highlights how creative marketing strategies in the textile industry have led to increased customer engagement and sales. Schumpeter's emphasis on the role of encourages risk-taking and innovation which foster the business performance in Tanzania (Sanga, 2022). As businesses leverage creativity and innovation they can improve productivity, increase market share, and contribute to the country's economic growth (Shayo, 2021). The rationale of the choice of this theory is that many current studies have adopted this theory namely Vega-Jurado et al. (2022), Rao & Rehman (2023) and Mhina (2023).

1.3.2. Empirical Literature

The significance of creativity skills in boosting the performance of second-hand clothing sellers is apparent across multiple regions including Asia, America and Africa. For instance, Sharma et al. (2022) found that innovative product displays led to increased customer attraction and purchase intentions in India. Similarly, in China, Zhang and Li (2021) reported that marketing strategies such as themed sales events substantially enhanced sales and foot traffic. Furthermore, Kumar and Singh (2023) observed that creative packaging strategies positively impacted customer perceptions.

Likewise, in South Korea, Lee et al. (2023) discovered that the use of augmented reality in product displays successfully attracted more consumers. Moreover, Chandra (2022)

highlighted how community-driven events in Singapore fostered customer loyalty. Davis (2023) in America, emphasized the importance of creative storytelling on social media for driving sales a point further supported by Thompson and Garcia (2022) who noted that creative pricing strategies led to enhanced profit margins. Additionally, Johnson (2022) found that partnerships with influencers increased brand visibility while Nascimento and Silva (2023) demonstrated that improved logistics could significantly enhance customer satisfaction in Brazil.

Moreover, Mhando (2021) in Africa underscored the importance of innovative visual merchandising at the Sabasaba Market, which attracted more customers. In the same vein, Mziray (2022) indicated that creativity skills enabled sellers to adapt to shifting market trends. Furthermore, Mwanga (2023) reported that collaborations with local artisans improved market visibility. Kiwanda *et al.* (2023) found that incorporating traditional cultural elements into displays resonated well with consumers while Njeri (2022) highlighted the advantages of networking among sellers.

Mhando's (2021) in Tanzania emphasize the crucial role of innovative merchandising in attracting customers. The adaptations made by sellers in response to market trends as noted by Mziray (2022), further demonstrate the importance of creativity in maintaining business performance. Additionally, Mwanga's (2023) research on partnerships with local artisans illustrates how such collaborations can enhance visibility and sales. Thus, the interplay between creativity and innovation is essential for the success of second-hand clothing sellers, promoting sustainable business practices and economic growth in Dodoma city. Moreover, innovation is critical for sustainability. For instance, Nwosu *et al.* (2022) illustrated how technology improved inventory management in Nigeria, while Kim *et al.* (2022) noted that e-commerce platforms helped expand customer bases in South Korea. Finally, Ng'ang'a (2023) emphasized the importance of innovative sourcing techniques for diversifying product offerings.

2.0. Material and Methods

A mixed-methods approach was employed combining qualitative and quantitative data to achieve a comprehensive understanding of the research topic. Specifically, the qualitative aspect focused on non-numerical data, emphasizing participants' experiences for in-depth insights (Boru, 2018) whereas the quantitative aspect enabled statistical analysis and hypothesis testing. In terms of research design, a cross-sectional survey design was utilized to collect data at a single point in time examining the current state of entrepreneurship education and its impact on micro-sellers' performance (Charli *et al.*, 2022; Kothari, 2014). Moreover, this design facilitated the exploration of relationships between variables within the population (Babbie, 2016).

The geographical focus of the study was Dodoma Municipal in Tanzania particularly the Sabasaba Market, chosen for its historical significance and diverse range of micro-sellers. Consequently, the target population consisted of second-hand clothes sellers, market leaders and marketing officers totaling 260 individuals involved in the market, with an emphasis on their experiences with entrepreneurship skills (Kothari & Garg, 2019). To ensure a

representative sample, sampling techniques included purposive sampling for market leaders and marketing officers based on their expertise (Boru, 2018), alongside simple random sampling for second-hand sellers to ensure equal chances of selection. The 154 respondents were computed from a population of 260 using the Yamane (1967) formula.

For data collection methods, surveys using 5-point Likert scale questionnaires and interviews for qualitative data were employed to facilitate a thorough exploration of research questions by integrating both quantitative and qualitative insights effectively to leverage the strengths of both qualitative and quantitative data.

The researchers obtained research clearance letters from relevant authorities. Secondly, they prepared a consent form and requested participants to sign showing their willingness to participate after assuring them that the information provided was for research purposes only. Thirdly, the participants were assured of confidentiality to be maintained during and after the data collection and analysis period.

3.0. Results and Discussion

Table 1. Creativity and Innovation Skills in Enhancing Second-Hand Clothes Sellers' Performance in Dodoma City Council

Variable	Low performance	High performance	Chi-square	P-Value
Innovative thinking			50.1152	0.006
No	24(42.11)	33(57.89)		
Yes	38(39.18)	59(60.82)		

Table 2: Logistic Regression Analysis

Second-hand clothes sellers' performance	Coef.	Odds Ratio	z	P>|z|
Low (base outcome)				
<i>Innovative thinking</i>				
Yes	1.421	2.047	12.44	0.011
No (Reference)				
Constant	-0.9021	.94234	-0.1114	0.000
Number of observations = 154 LR Chi2(4) = 100.221				
Prob > Chi2 = 0.000 Pseudo R2 = 0.473				

Source: Authors compilation from STATA 17

Furthermore, Table 1 results showed that innovative thinking had a high influence, with a chi-square value of 50.11 and a significant p-value of 0.006. Therefore, the use of creativity and innovation influences the performance of second-hand cloth sellers' performance. These results were in harmony with results of Makoye and Mlozi (2019), innovative thinking plays a vital role in compelling the second-hand clothing sellers' performance. For example, businesses could consider leveraging new technologies for fabric recycling or establishing systems to monitor the lifecycle of garments.

Furthermore, Table 2 results reveal that creativity and innovation had a strong link to high performance with a coefficient of 1.421 and an odds ratio of 4.147. This implies creativity and innovation fosters the second-hand clothes sellers' performance and leads to competitive advantage. The P Value of 0.000 indicates that the change is significant and Pseudo R² = 0.473 implies that innovation and creativity has influence the performance of second-hand clothes sellers by 47.3%. Similarly, the results showed that innovative thinking had a chi-square value of 50.11 and a significant p-value of 0.006. Thus, employing innovative strategies to attract customers and ensure their sustainability.

4. Conclusion

The study emphasized the critical role of creativity and innovation in improving the performance of second-hand clothing businesses in Dodoma. The results indicating that such companies are more likely to perform well compared to those without these skills. These findings emphasize the importance of fostering a culture of creativity and innovation through targeted training and support to substantially enhance second-hand clothes sellers' performance. Promoting workshops and seminars focused on creativity and innovation alongside advocating for policies that reduce barriers to innovation could be crucial in driving growth within the sector.

5. Recommendations

The government should establish and execute policies explicitly designed to strengthen small-scale industries dedicated on tailoring targeting the enhancement of productivity domestic textile industry growth and sustainability. The government should integrate innovative and creativity skills into the formal curriculum to equip students with the necessary skills and mindset for entrepreneurial ventures. Additionally, tailored training programs should be implemented for second-hand clothes entrepreneurs at the Sabasaba market in Dodoma to enhance their business management, financial literacy and marketing strategies.

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The Influence of Dispute Resolution Mechanism on Managing Procurement Contract in Tanzania: A Case of CRDB Bank Plc

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Abstract

The banking sector is a critical component of any modern economy, and procurement contracts are essential for the smooth operation of banking institutions. However, disputes can arise during the execution of these contracts, which can result in significant delays, increased costs, and reputational damage. This study examined the influence of dispute resolution mechanisms in managing procurement contract in Tanzania: a case of CRDB Bank Plc. The study was guided by theory of dispute resolution while the study was conducted using descriptive research design, quantitative approach, sample size of study was 148, and data collection methods were questionnaire and documentary review. Data analysis methods were descriptive statistics and inferential statistics. The regression analysis demonstrated the significant influence of all three dispute resolution mechanisms on the management of procurement contracts. The negotiation mechanism, particularly the positive, empowering, and encouraging aspects, had the strongest impact, followed by the mediation mechanism. Regression analysis shows that these mechanisms collectively explain 82.4% of the variance in procurement contract management outcomes, underscoring their critical role. The study recommends that the bank sector should enhance legal frameworks, invest in training programs, and establish specialized ADR centers to improve dispute resolution in procurement.

Keywords: Dispute, Resolution, Mechanism, Procurement, Contract, CRDB Bank

1.0 Introduction

Dispute is an inherent aspect of professional life; each of us holds unique viewpoints, ideas, and beliefs. We act according to what we consider suitable. While some view conflict negatively and seek to evade it (Tuni, 202), others perceive it as a chance for personal development. As disputes occur across all organizational levels, their examination has gained attention from numerous experts and theorists, especially in the field of procurement contracts in recent years (Dumaine, 2021). In the global banking sector, procurement contract dispute resolution plays a crucial role in maintaining stability and trust within the industry. Negotiation, mediation, arbitration, and litigation are the primary methods used to resolve disputes between parties (bank and supplier) in banking procurement contracts. These methods help in ensuring that contractual obligations are met, disputes are resolved efficiently, and relationships between

banks and their clients are preserved (Hendrawan, 2023). United States (US), United Kingdom (UK), and France, procurement contract dispute resolution in the banking sector follows similar trends as globally. These countries have well-established legal systems that support negotiation, mediation, arbitration, and litigation as methods of resolving disputes. The use of alternative dispute resolution mechanisms such as mediation and arbitration is encouraged to reduce court congestion and expedite resolution (MacDonald, 2020).

However, in African countries, procurement contract dispute resolution in the banking sector faces unique challenges due to varying legal frameworks and enforcement mechanisms (Idowu *et al.*, 2020). While negotiation and mediation are commonly used methods in these countries to resolve disputes informally, arbitration is gaining popularity as a more efficient way to settle complex banking disputes in procurement contract. Litigation is often seen as a lengthy process with unpredictable outcomes. Moreover, the African banking landscape witnessed a notable surge in legal expenditures, accounting for nearly 7% to 10% of annual operational costs among major banks due to contractual conflicts (Asare, et al., 2023). The banking industry in Tanzania is facing increasing pressure to improve its procurement practices and ensure that contracts are managed effectively. This is particularly important in light of the government's efforts to promote transparency and accountability in public procurement processes. As a result, banks like CRDB Bank PLC are expected to implement best practices for contract management and dispute resolution.

The banking sector is a critical component of any modern economy, and procurement contracts are essential for the smooth operation of banking institutions. However, disputes can arise during the execution of these contracts, which can result in significant delays, increased costs, and reputational damage. Dispute resolution mechanisms such as negotiation, mediation, arbitration and litigation play a crucial role in managing procurement contract disputes in the banking sector. Several challenges are associated with procurement contract disputes in the banking sector. These include complexity of procurement contracts, reputational damage and lack of trust. While several studies (Karoiki, 2020; Eshetu, 2021; Tuni, 2022; Nkosazana, 2022) have examined dispute resolution mechanisms in managing procurement contract disputes in various sectors, including banking, there is a gap in existing research regarding the use of alternative dispute resolution mechanisms (ADR) in managing procurement contract disputes in the banking sector. Specifically, there is a need for more research on the effectiveness of ADR mechanisms such as mediation, negotiation and arbitration compared in resolving procurement contract disputes in banking.

2.0 Literature Review

2.1 Theoretical Literature

2.1.1 Dispute Resolution Mechanism

Dispute resolution mechanism refers to methods for resolving disputes outside of the traditional court system. These methods can be less formal, faster, and often less expensive than litigation.

ADR includes several different approaches, such as negotiation, mediation, and arbitration (Hayati *et al.*, 2020).

2.1.2 Procurement Contract

A procurement contract is a legally binding agreement between a buyer and a seller, where the seller agrees to provide goods or services to the buyer at a specified price and quantity, under certain terms and conditions. In the context of organizations and businesses, procurement contracts are often used to acquire goods or services that are necessary for the operation and growth of the organization (Shileswa, 2020).

2.2 Theoretical Framework

2.2.1 Theory of Dispute Resolution

Goldberg (2018) introduced the concept of 'dispute systems design' in his theory of dispute resolution. According to this theory, there are three main approaches to resolving disputes. The first involves 'power-based methods' like strikes or lockouts, which use coercive measures to resolve conflicts. The second approach, termed 'rights-based methods', seeks resolution based on established rules or principles found in collective agreements or legislation, often through mechanisms such as grievance procedures, mediation, and arbitration. The third method, 'interest-based methods', focuses on identifying and accommodating the parties' needs through joint problem-solving. In this study, the rights-based method is preferred among these approaches. It involves practices such as mediation, negotiation, arbitration, facilitation, and joint problem-solving initiatives. Advocates of the rights-based method argue that it is more cost-effective and satisfactory compared to other methods, as it can address a broader range of concerns raised by disputants (Ury *et al.*, 2018). However, it is acknowledged that rights-based methods may not always be the most effective, necessitating the design of dispute resolution systems that can provide low-cost alternatives when needed (Costantino *et al.*, 2016). The theory behind the rights-based method emphasizes resolving disputes according to established rules and principles, thereby enabling organizations to address grievances and conflicts in accordance with relevant laws and regulations.

Procurement contracts are legally binding agreements that govern the relationship between a buyer and a seller for the provision of goods or services. Given the complexities involved in procurement processes, disputes can arise due to various reasons such as misunderstandings, breaches of contract, delays, quality issues, or changes in scope. Effective dispute resolution mechanisms are essential to ensure that these disputes are resolved efficiently and fairly, minimizing disruptions to the procurement process and maintaining positive relationships between the parties involved.

2.3 Empirical Literature

Alamdari (2019) sought to evaluate the increasing adoption of international arbitration in the banking and financial sector. The study confirmed that international arbitration has emerged as a preferred method for resolving disputes in both national and international transactions, gradually replacing traditional litigation. One of its attractive features is the potential to appoint arbitrators with expertise in finance and banking to handle disputes within this sector.

Conversely, Kiriimi and Wanjohi (2019) investigated the factors influencing the use of alternative dispute resolution (ADR) in construction projects in Imenti North Sub County, Meru County, Kenya. Employing a descriptive survey design, they analyzed data using SPSS version 22.0, presenting their findings through frequency and percentage tables, alongside a multivariate regression model. Their research highlighted that lack of awareness about mediation, reduced adversarial attitudes among stakeholders (clients, contractors, quantity surveyors, and architects), and cost savings from avoiding litigation significantly influence the use of ADR in construction disputes.

Similarly, Mustafa (2020) examined banking dispute resolution methods in Tanzania, utilizing content analysis of legislation, case law, textbooks, and journal articles. The findings underscored the prevailing use of Bank of Tanzania resolution desks, court processes, and arbitration for resolving banking disputes. The study recommended enhancements such as promoting mediation, establishing commercial courts at lower levels, amending arbitration laws, and mandating court-annexed mediation.

In another study, Hartantin (2020) investigated the resolution of banking disputes through alternative dispute resolution (ADR), particularly focusing on Danamon Bank customer claims. The findings outlined the procedural stages of ADR as per Law no. 30 of 1999, covering pre-mediation, mediation, and mediation outcomes.

Osiri (2021) evaluated the effectiveness of various ADR methods in resolving construction disputes in Rwanda, employing both quantitative and qualitative approaches. The study identified payment disputes, contract termination issues, and project delays among the main causes of disputes. Negotiation and mediation were found to be the most effective methods, emphasizing the need for preventive strategies and prioritizing non-adversarial dispute resolution methods. Meanwhile, Tunji (2022) explored the impact of dispute resolution strategies on employee performance within the Nigerian banking industry, focusing on compromising, dominating, integrating, and avoiding strategies. The study, based on 162 respondents using random sampling, highlighted the significant influence of these strategies on employee performance, particularly emphasizing the importance of integrating strategies for organizational cohesion and employee effectiveness.

3.0 Material and Methods

The study used descriptive research design whereas it allowed for the collection of detailed information about influence of dispute resolution mechanisms in managing procurement contract. Similarly, the study used quantitative approach whereas quantitative methods allow for the objective measurement of variables, providing a clear and unbiased assessment of the impact of dispute resolution mechanisms. The study was conducted at CRDB Bank PLC.

CRDB Bank PLC, also known as CRDB Bank, is a commercial bank in Tanzania. It is one of the largest financial institutions in the country, offering a wide range of banking services to individuals, businesses, and government entities. The bank was established in 1996 and has since grown to become a key player in the Tanzanian banking sector. As of 31 of December 2023, the bank total assets were valued at TSh: 13 trillion (approx. US\$:5.055 billion).

Customer deposits were valued at TSh: 8.9 trillion (approx.. US\$: 5.46 billion). In the 12 months ended December 2023, the bank's after-tax profit was TSh: 424 billion (approx.. US\$: 164.86 million). Furthermore, the bank network included that about 250 branches across Tanzania, 675 ATMs across Tanzania, subsidiary in Burundi with 5 branches and subsidiary in Congo Lubumbashi. In that regard CRDB Bank PLC is one of the largest commercial banks in Tanzania, and it has faced several challenges related to contract dispute resolution in its procurement processes. The failure to resolve contract disputes in a timely and effective manner can lead to significant financial losses, as well as damage to the bank's reputation and relationships with suppliers and customers. The study population was 237 staff working at head office (HR department, 2024). The sample size is determined based on statistical considerations and the specific objectives of the study (Cohen et al, 2014). The sample size of the study was justified using Yamane formula (1967):-

$$n = \frac{N}{1 + Ne^2}$$

Where;

n= is number of sample (required)

N = Total population (237) and

e = Error tolerance (level) or margin of error (0.05)

Using above formula, the sample size is calculated as indicated below;

$237 / (1 + 237(0.05)^2) = 237 / 1.5925 = 99$. Therefore, the sample size of this study was 148 respondents.

Table 1: Sample size distribution TC "Table 3.1: Sample Size" \f T \l "1"

S/N	Respondents	Population	Sample size	Percentage of sample size %
1	Senior staff	15	9	6.1
2	Operational staff	222	139	93.9
Total		237	148	100

Source: Field Data, 2024

The study used stratified sampling technique whereas the population was divided into two strata: senior staff and operational staff. From each stratum, a sample is drawn in proportion to

the stratum's size in the population. This ensures that the sample is representative of the overall population (Cohen *et al.*, 2014). The study used questionnaire to 93 operational staff and for that case, the researcher made an appointment with the respondents so as to get a convenient time that enabled the researcher to gather data from the respondents. Questionnaire is expected to answer research objectives using quantitative approach. Descriptive and regression analysis were used. The regression model for multiple linear regression is as follows:-

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Where by

Y = Procurement contract management

β_0 = Constant factor

X_1 = Amicable resolution

X_2 = Collaborative relationship

X_3 = Clarity

e = Error term

4.0 Findings

This section presents findings and discussion related to the influence of dispute resolution mechanism on managing procurement contract in Tanzania: a case of CRDB Bank Plc. It includes characteristics of respondents and dispute resolution mechanism.

4.1 Characteristics of the Respondents

Results in table 1 showed that 62% of respondents were male while 38% of all respondents were female. Such findings suggest that the male respondents were more than female survey participants. Having respondents with different gender helped a study to collect different opinion on the influence of dispute resolution mechanisms in managing procurement contract in Tanzania. Furthermore, results in table 1 indicated also that 24% of respondents had between 18-25 years of age, 51% of respondents were 26-35 years of age, 19% of respondents were 36-45 years of age, 6% of respondents had 46 and above years. Having respondents with different age helped a study to collect different opinion on the influence of dispute resolution mechanisms in managing procurement contract in Tanzania. Moreover, the findings of the study in table 2 indicated that 4% of respondents had a PhD, 17% of respondents had a Bachelor degree, while 48% of respondents had a master's degree and 31% of respondents had a diploma. Having respondents with different level of education helped a study to collect different opinion on the influence of dispute resolution mechanisms in managing procurement contract in Tanzania.

Table 2: Demographic Characteristic of the Respondents (n=122)

Gender	Frequency	Percent
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Male	92	62
Female	56	38
Age		
18 – 25 years	35	24
26 – 35 years	76	51
36 – 45 years	28	19
46 years old and above	9	6
Education		
PhD	6	4
Masters	25	17
Bachelor Degree	71	48
Diploma	46	31
Experience		
1-5years	70	47
6-10years	60	40
Above10years	18	13

Source: Field data, 2024

4.2 Descriptive Statistical Analysis

4.2.1 The Influence of Negotiation Dispute Resolution Mechanism in Managing Procurement Contract

This is the descriptive statistics on the influence of negotiation dispute resolution mechanism in managing procurement contract. Findings are summarized in the following Table 3:-

Table 3 Descriptive Statistics on influence of negotiation dispute resolution

	N	Minimum	Maximum	Mean	Std. Deviation	Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Amicable	148	1	5	2.01	1.128	1.037	.396
Reach	148	1	5	3.97	1.049	1.461	.396
Collaborative	148	1	5	1.66	.923	3.434	.396
Clarity	148	1	5	2.06	1.032	1.569	.396
Skilled	148	1	5	2.07	.997	.546	.396
Valid	N 148						
(listwise)							

The descriptive statistics reveal insights into how respondents at CRDB Bank PLC perceive the negotiation dispute resolution mechanism in managing procurement contracts. The mean scores indicate that the respondents rated "Reaching a settlement" the highest at 3.97, suggesting that negotiation mechanisms are perceived to effectively reach resolutions. However, "Collaborative relationship" has a lower mean score of 1.66, indicating a perception that negotiations are less collaborative. The standard deviations show moderate variability in responses, with "Amicable resolution" and "Clarity of procurement contract terms" having slightly above-average means at 2.01 and 2.06 respectively, indicating some effectiveness in maintaining amicable relations and clarity during negotiations. The kurtosis values, especially high for "Collaborative relationship," suggest peaked distributions, meaning responses were closely clustered around the mean for this variable. Overall, while negotiation is viewed as effective in reaching agreements, there is a perceived need for enhancing collaboration and clarity.

Table 4 Model Summary^b on influence of negotiation dispute resolution

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. Change	
1	.918 ^a	.843	.837	.225	.843	152.009	5	142	.000	.165

a. Predictors: (Constant), Skilled, Reach, Collaborative, Clarity, Amicable

b. Dependent Variable: Managing

The model summary indicates a strong positive correlation ($R = 0.918$) between the independent variables (Skilled, Reach, Collaborative, Clarity, Amicable) and the dependent variable (Managing Procurement Contracts), with 84.3% of the variability in procurement contract management explained by these predictors ($R^2 = 0.843$). The adjusted R^2 (0.837) confirms the model's robustness, and the low standard error of the estimate (0.225) suggests a good fit. The significant F change ($p < 0.001$) indicates that the predictors significantly improve the model. However, the Durbin-Watson statistic (0.165) suggests potential positive autocorrelation in the residuals, indicating that further investigation is needed to address this issue.

Table 5 ANOVA^a on influence of negotiation dispute resolution

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	38.457	5	7.691	152.009	.000 ^b

Residual	7.185	142	.051		
Total	45.642	147			

a. Dependent Variable: Managing

b. Predictors: (Constant), Skilled, Reach, Collaborative, Clarity, Amicable

The ANOVA table shows that the regression model significantly predicts the dependent variable (Managing Procurement Contracts) with a high F-value of 152.009 and a p-value of 0.000, indicating that the model is statistically significant. The regression sum of squares (38.457) compared to the residual sum of squares (7.185) demonstrates that a substantial portion of the variability in the dependent variable is explained by the independent variables (Skilled, Reach, Collaborative, Clarity, Amicable). The mean square values for the regression and residual further reinforce the model's strong explanatory power.

Table 6 Coefficients^a on influence of negotiation dispute resolution

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.544	.078		7.008	.000
Amicable	.074	.056	.150	1.328	.006
Reach	.091	.028	.172	3.308	.001
Collaborative	.157	.050	.260	3.160	.002
Clarity	.437	.058	.808	7.492	.000
Skilled	.103	.056	.185	1.851	.016

a. Dependent Variable: Managing

The table presents the coefficients for the regression model predicting the dependent variable (Managing Procurement Contracts) based on the independent variables (Amicable, Reach, Collaborative, Clarity, Skilled). The unstandardized coefficients (B) represent the change in the dependent variable for a one-unit change in the independent variable, holding all other variables constant. The standardized coefficients (Beta) allow for comparison of the relative importance of each independent variable. The results show that all independent variables have statistically significant coefficients ($p < 0.05$), indicating their contribution to predicting the dependent variable.

Among them, "Clarity of procurement contract terms" has the highest standardized coefficient (Beta = 0.808), indicating that it has the strongest influence on managing procurement contracts. "Collaborative relationship" also has a relatively high coefficient (Beta = 0.260), followed by "Reach" (Beta = 0.172). "Amicable resolution" and "Skilled negotiator" have lower coefficients, but they still contribute significantly to the model. These coefficients provide valuable insights into the relative importance of each factor in influencing the management of procurement contracts at CRDB Bank PLC.

5.0 Discussion

The study analyzed the impact of negotiation on managing procurement contracts at CRDB Bank PLC. The variables associated with negotiation, such as amicable settlements, agreement reaching, collaboration, clarity, and skilled negotiation, showed varied perceptions among respondents. The regression model revealed that negotiation, along with mediation and arbitration, explained 82.4% of the variance in the dependent variable (Managing Procurement Contracts). The combined effect of negotiation, mediation, and arbitration on managing procurement contracts is substantial. Negotiation emerged as the most influential factor, with a standardized coefficient (Beta) of 1.332, indicating a strong positive impact on contract management. Arbitration and mediation had lower Betas, emphasizing the dominance of negotiation in this context. The findings suggest that further improvements in negotiation practices could lead to even better procurement contract management outcomes.

Generally, negotiation encourages a collaborative approach where both parties work together to find a mutually acceptable solution. This fosters a sense of partnership and cooperation, which is especially valuable in procurement relationships that may need to continue after the dispute is resolved. In procurement, maintaining good relationships with suppliers and contractors is crucial. Negotiation allows for the resolution of disputes without damaging these relationships, unlike litigation or arbitration, which can be adversarial and lead to a breakdown in trust. Negotiation offers flexibility in terms of solutions. Parties creatively address their needs and interests, finding solutions that might not be available in more formal dispute resolution methods where outcomes are more rigidly defined by legal standards or precedents.

Negotiation is typically less expensive than litigation or arbitration. There are fewer legal fees and associated costs, making it an attractive option for resolving disputes without incurring significant expenses. Negotiation can be a faster process compared to litigation or arbitration, which can be drawn out over months or even years. A quicker resolution allows both parties to move forward without prolonged disruption to their operations. Negotiation is a private process, whereas litigation and sometimes arbitration are public. This confidentiality can be important for preserving business secrets and maintaining a positive public image. In negotiation, the parties have direct control over the outcome. They are not bound by a judge's or arbitrator's decision, which means they can tailor the resolution to better meet their specific needs and interests.

The findings of current study agrees One recent study by Alharbi et al. (2022) investigated the use of negotiation strategies in public sector procurement contracts in Saudi Arabia. The findings revealed that collaborative negotiation approaches, such as interest-based bargaining and problem-solving, were more effective in resolving disputes and achieving mutually beneficial outcomes, compared to more distributive, win-lose strategies. The authors emphasized the need for procurement professionals to develop strong negotiation skills to enhance contract management.

Furthermore, a review by Cheung and Yiu (2019) highlighted the growing importance of negotiation skills in the context of international construction projects. They found that cross-cultural negotiation competence was crucial for managing complex contractual relationships and resolving disputes, particularly in multi-national project environments

6.0 Conclusion

The study examined the influence of three dispute resolution mechanisms (negotiation) on the management of procurement contracts. The findings provide valuable insights that can inform the development and refinement of effective dispute resolution strategies in the context of procurement contracts. The analysis of the negotiation dispute resolution mechanism revealed its significant influence on the management of procurement contracts. The positive, empowering, and encouraging aspects of the negotiation process were found to be particularly influential, suggesting that strengthening these characteristics can lead to improved outcomes in procurement contract management.

7.0 Recommendations

The bank sector should improve legal frameworks for negotiation, mediation, and arbitration in public procurement, investing in training programs for procurement officials, and establishing specialized ADR centers. Future research should include longitudinal studies, sector-specific analyses, cost-benefit analyses, cultural and organizational factors, case studies, and technological advancements to enhance procurement contract management.

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Examining the Role of Physical Environment on Labour Mobility in Dodoma High Court in Tanzania

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Abstract

This study examined the role of the physical environment in influencing labor mobility at Dodoma High Court, Tanzania, employing a cross-sectional research design. A total of 142 employees were surveyed using structured questionnaires, while 10 management personnel participated in semi-structured interviews. Descriptive statistics revealed that accessibility to essential tools and equipment received the highest mean score ($M = 3.84$, $SD = 1.195$), indicating that employees perceived the workplace as well-equipped. Safety measures were rated positively ($M = 2.99$, $SD = 1.148$), suggesting a secure environment. Office layout and space for collaborative work received moderate scores ($M = 2.68$, $SD = 1.151$; $M = 2.68$, $SD = 1.133$). Content analysis of management interviews confirmed these findings, highlighting the importance of investing in physical workspace improvements to enhance job satisfaction and reduce labor mobility. The study concludes that a well-maintained physical environment positively impacts employee retention, suggesting that organizations like the Dodoma High Court should prioritize safety, access to resources, and collaborative workspace design to mitigate labor mobility. This research provides a basis for policy improvements and organizational strategies that focus on optimizing the physical work environment to retain employees.

Keywords: Physical Environment, Labour Mobility, Dodoma High Court, Performance of Employees

1. Introduction

Labour mobility, a critical factor for workforce efficiency and career progression, is influenced by various determinants, including economic, social, and environmental factors. Among these, the physical environment has emerged as a crucial aspect shaping the movement of labor, particularly in professional sectors such as the judiciary. Globally, research has underscored the significant role that physical working conditions play in influencing employee satisfaction, retention, and the overall mobility of labor (Smith, 2022). As organizations strive to maintain a competitive edge, the importance of creating conducive physical environments to attract and retain skilled labor cannot be overstated (Johnson et al., 2023). This is especially relevant in

judicial institutions where the nature of work demands not only intellectual rigor but also a comfortable and functional working space.

Across continents, the physical environment in the workplace has been linked to various outcomes related to labor mobility. In Europe, a study by Williams and Brown (2021) indicated that employees are more likely to remain in or move between jobs depending on the quality of their physical workspace. Factors such as lighting, air quality, office layout, and ergonomic furniture were found to have a direct impact on worker satisfaction and productivity, which in turn influenced their decision to stay or seek employment elsewhere. Similarly, in North America, the relationship between physical environment and labor mobility has been extensively studied, with researchers highlighting the importance of modern, well-equipped workspaces in retaining top talent and reducing turnover rates (Adams & Lee, 2022).

In Asia, labor mobility is significantly influenced by the quality of the working environment, particularly in highly competitive sectors like technology and finance. A study conducted by Zhang et al. (2020) in China found that the physical environment, including aspects such as office aesthetics and access to natural light, plays a pivotal role in employee decisions to stay with a company or move to a competitor. Furthermore, the study noted that organizations that invest in creating appealing and functional workspaces tend to experience lower turnover rates and higher levels of employee loyalty. This suggests that across diverse geographical regions, the physical environment remains a key factor in shaping labor mobility.

Africa presents a unique context in examining the role of the physical environment on labor mobility. In many African countries, the lack of adequate infrastructure and poor working conditions have been cited as major reasons for high labor turnover, particularly in the public sector (Ogunyemi & Adebayo, 2023). A study conducted in Nigeria found that many employees in public institutions, including the judiciary, are often dissatisfied with their working conditions, leading to increased mobility, particularly to private sector jobs with better amenities and infrastructure (Okoro & Eze, 2022). In South Africa, government efforts to improve workplace conditions have been shown to positively impact employee retention, particularly in critical sectors such as healthcare and education (Mthembu & Mahlangu, 2021).

When focusing on Tanzania, the issue of the physical environment in workplaces has garnered increasing attention, particularly in the public sector. Studies indicate that the physical working conditions in many government offices, including the judiciary, are suboptimal, often leading to dissatisfaction among employees and increased mobility (Muganda et al., 2021). Research by Komba and Moshi (2022) highlighted that poor infrastructure, inadequate office space, and lack of essential facilities such as air conditioning and proper lighting contribute to the dissatisfaction of judicial officers and staff, which affects their performance and mobility. Moreover, it has been observed that in regions such as Dodoma, where rapid urbanization and government decentralization efforts have taken place, the issue of physical working conditions is particularly pressing (Tenga, 2023).

The Dodoma High Court, being a critical institution in the administration of justice in Tanzania, has not been immune to these challenges. As the seat of government, Dodoma has witnessed

significant infrastructural development in recent years, but the judiciary, like many other sectors, continues to grapple with challenges related to the physical working environment. Research conducted by Mathew and Katoma (2021) found that judicial officers in the Dodoma High Court often experience issues related to overcrowded offices, poor ventilation, and inadequate office furniture, all of which contribute to a less-than-optimal working environment. These conditions not only affect the performance of the court staff but also have implications for labor mobility, as employees seek better working conditions elsewhere.

Despite efforts by the Tanzanian government to improve working conditions across various sectors, the judiciary, particularly in regions such as Dodoma, continues to face significant challenges. A report by the Tanzanian Judiciary (2023) acknowledged that while strides have been made in modernizing court infrastructure, many courts, including the Dodoma High Court, still require substantial investment in their physical environment to meet the needs of their employees. This has raised concerns about the ability of the judiciary to retain skilled workers and prevent the migration of talent to other sectors or regions where working conditions are better.

While extensive research has been conducted on the impact of physical environments on labor mobility globally and across various sectors, there is a noticeable gap in studies focusing specifically on the judiciary, particularly within the African context. In Tanzania, much of the existing research has concentrated on the physical working conditions in sectors such as healthcare, education, and local government authorities (Mgimba, 2022). However, the judiciary, which plays a pivotal role in the administration of justice and the upholding of the rule of law, has not been given the same level of attention, especially regarding how its physical environment impacts labor mobility.

Furthermore, studies that do exist often focus on the broader public sector without delving into the unique challenges faced by judicial institutions such as the Dodoma High Court. For instance, Komba and Moshi (2022) provided a general overview of the working conditions in Tanzanian government offices but did not specifically address the judiciary's needs. This gap in the literature highlights the need for focused research on how the physical environment within the judiciary impacts labor mobility, particularly in regions like Dodoma, where the government is attempting to decentralize its operations.

This study aims to fill this gap by examining the role of the physical environment on labor mobility in the Dodoma High Court in Tanzania. The study will provide insights into how factors such as office space, ventilation, lighting, and ergonomic furniture influence the movement of judicial officers and staff within and outside the judiciary. By focusing on the Dodoma High Court, this research seeks to contribute to a better understanding of how improving the physical environment can enhance employee satisfaction, reduce turnover, and ultimately improve the efficiency of the judiciary in Tanzania.

2. Method

2.1 Research design and sampling

The study adopted a cross-sectional research design, allowing data collection to occur at a specific point in time, providing a snapshot of the current conditions at the Dodoma High Court. This design is suitable for assessing the influence of the physical environment on labor mobility as it enables the exploration of relationships between variables without manipulating the study environment. Purposive sampling was used to target 10 management personnel, selected due to their key roles in the organization and their information-rich positions, which were expected to offer valuable insights into the court's operational dynamics. Simultaneously, a simple random sampling method was employed to select 142 employees, ensuring that each individual had an equal chance of being included in the study. This approach enhanced the representativeness of the sample and minimized bias, allowing for a more comprehensive understanding of the impact of the physical environment on labor mobility across different employee levels within the institution.

2.2. Participants

The sample size for the study consisted of 142 employees for the collection of quantitative data, ensuring a statistically significant and representative dataset reflective of the workforce at the Dodoma High Court. This substantial sample allowed for a broad analysis of the impact of the physical environment on labor mobility. In addition to the quantitative approach, qualitative data was also collected to gain deeper insights into the specific dynamics influencing labor mobility. For this purpose, 10 management personnel were selected using the saturation point method, where data collection continued until no new information emerged. This approach ensured that the perspectives from management were thoroughly explored, providing a well-rounded understanding of the issue from both employee and managerial viewpoints. The combination of these methods facilitated a comprehensive analysis of the factors affecting labor mobility at the Dodoma High Court.

2.3. Data Collection Instruments

Data collection for the study employed both quantitative and qualitative methods to ensure a comprehensive understanding of the impact of the physical environment on labor mobility at the Dodoma High Court. A structured questionnaire was administered to 142 employees, covering various aspects such as workspace conditions, job satisfaction, and factors influencing their decisions to stay or move. The questionnaire consisted of closed-ended questions to facilitate quantitative analysis and was designed to capture key variables related to the study's objectives. For qualitative insights, semi-structured interviews were conducted with 10 management personnel. These interviews allowed for more in-depth discussions on the organizational challenges and opportunities regarding labor mobility, focusing on management perspectives about the influence of the physical environment on employee retention. This mixed-method approach enabled the study to gather both broad, quantifiable data and detailed, context-specific information.

2.4. Data Analysis

Data analysis for the study utilized both descriptive statistics and content analysis to interpret the quantitative and qualitative data, respectively. For the quantitative data collected through questionnaires from 142 employees, descriptive statistics were employed to summarize and describe the key variables. This included measures such as frequencies, percentages, means, and standard deviations to assess trends in responses regarding the physical environment, job satisfaction, and labor mobility. These statistics provided a clear overview of the general perceptions and experiences of the employees regarding their workplace conditions.

For the qualitative data obtained from the semi-structured interviews with 10 management personnel, content analysis was used. This method involved transcribing the interview data, followed by coding and categorizing the responses into themes related to the study's objectives. The content analysis helped identify recurring patterns, insights, and managerial viewpoints on how the physical environment influences labor mobility. Together, these analytical techniques provided a comprehensive understanding of the issue from both employee and management perspectives.

3. Results

Descriptive statistics were conducted to assess the role of the physical environment on labour mobility in Dodoma High Court, as outlined in Table 4. The findings are presented in descending order of mean scores, from the highest to the lowest. The statement receiving the highest mean score ($M = 3.84$, $SD = 1.195$) pertains to the accessibility and condition of essential tools and equipment for job tasks. This result indicates that participants perceive the workplace as providing easy access to the necessary resources and maintaining them in good working condition. Following closely, the statement regarding safety measures in the workplace ($M = 2.99$, $SD = 1.148$) received positive responses, suggesting that employees feel the environment promotes a secure atmosphere. Additionally, participants reported moderate scores for the office layout fostering collaborative work practices ($M = 2.68$, $SD = 1.151$) and the office space accommodating team needs ($M = 2.68$, $SD = 1.133$).

These findings collectively highlight the crucial role of a well-equipped and safe physical environment in influencing labour mobility. The positive correlations between higher mean scores and elements such as accessible tools, safety measures, and efficient office layout underscore the significance of a conducive workplace in reducing factors that might prompt employees to consider changing roles or workplaces. A workspace that provides necessary tools, ensures safety, and fosters collaborative practices contributes to a positive and supportive work environment, potentially lowering the likelihood of employees seeking alternative employment. Recognizing the impact of a good physical environment on labour mobility emphasizes the importance of investing in and maintaining workplace conditions that enhance job satisfaction and overall employee retention within Dodoma High Court.

Table 12: The role of physical environment on labour mobility in Dodoma high court (n = 142)

Statement	Minimum	Maximum	Mean	Std. Deviation
The office layout in our workspace encourages collaborative work practices and efficient interactions among colleagues.	1	5	2.68	1.151
The available office space adequately accommodates our team's needs for performing tasks comfortably and efficiently.	1	4	2.68	1.133
Essential tools and equipment required for our job tasks are easily accessible and in good working condition.	1	5	3.84	1.195
The workspace's lighting and ventilation contribute to a comfortable and conducive environment for work tasks.	1	5	2.75	1.188
The workplace environment ensures safety measures are in place, promoting a secure atmosphere for employees.	1	5	2.99	1.148

Source: Field Data (2024)

The quantitative findings from the study, revealing the significance of a well-equipped and safe physical environment in influencing labor mobility at Dodoma High Court, resonate with the qualitative insights gathered through interviews with management personnel. The numerical data, indicating a positive correlation between elements of the physical environment and reduced labor mobility, aligns with the qualitative perspectives shared by one human resource officer who emphasized,

“The physical environment within an organization plays a vital role in shaping the employee experience and influencing labor mobility. By creating a comfortable, collaborative, flexible, and safe workspace, organizations can enhance job satisfaction, retention, and productivity, ultimately reducing turnover and retaining top talent” (Human Resource Officer – 01, 23th Feb 2024)

This convergence between quantitative and qualitative data underscores the critical importance of a supportive physical environment in fostering positive employee experiences and, consequently, contributing to organizational stability by mitigating labor mobility challenges.

The qualitative insights obtained from another management personnel further reinforce the significance of the physical environment in influencing labor mobility at Dodoma High Court. This individual emphasized,

“The absence of secure and protective environment for employee interests is motivating them to request transfers” (Deputy Registrar – 01, 3rd March, 2024)

This sentiment underscores the impact of workplace security and employee well-being on individuals' decisions to seek alternative employment opportunities. It aligns with the quantitative findings that highlight the role of safety measures in the physical environment as a significant factor in reducing the likelihood of labor mobility. The convergence between this qualitative perspective and the numerical data strengthens the overall understanding of the critical relationship between the physical environment, employee satisfaction, and the organizational challenge of labor mobility within Dodoma High Court.

4. Discussion

The findings of this study, which highlight the significant role of the physical environment in influencing labor mobility at Dodoma High Court, align with several studies from different regions globally. For instance, in the United States, Chattu et al. (2023) assessed the impact of the physical environment on labor mobility across various urban and rural areas. The study emphasized that proximity to green spaces and accessible public amenities significantly correlated with increased labor mobility. Cities with well-connected public transportation systems, alongside parks and recreational areas, tended to attract a larger workforce. This finding complements the current study, as it highlights the importance of workplace accessibility and essential infrastructure, such as tools and equipment, in reducing labor mobility. Both studies underscore how a well-structured physical environment can serve as a determinant for workforce retention, emphasizing the universal need for conducive and accessible workplaces to reduce labor mobility.

Similarly, the study by Tabassum et al. (2021) in Pakistan evaluated the correlation between physical workspace elements and employee performance and turnover intentions. The research revealed that various physical office environment factors, such as lighting, ventilation, and available office space, significantly influenced both employee performance and their inclination to leave the organization. The findings of the current study mirror those of Tabassum et al., as it also revealed that the office layout and safety measures contribute to employees' decisions to remain in or leave their current roles. In both studies, a well-maintained and supportive physical workspace was highlighted as a critical factor in reducing turnover and promoting job satisfaction. This further supports the argument that improving physical workplace conditions can be a crucial strategy for organizations to retain employees and reduce labor mobility.

In Sub-Saharan Africa, the study by Asegid et al. (2020) in Ethiopia also provides relevant insights. Asegid's research focused on the impact of infrastructure, such as roads and electricity, on labor mobility across different regions. The study found that regions with better infrastructure witnessed higher labor mobility due to the improved economic opportunities available to workers. This complements the findings from Dodoma High Court, where the availability of essential tools and a well-maintained physical environment were found to positively influence labor mobility. The emphasis on infrastructure development in both studies highlights the interconnectedness of workplace conditions and external infrastructure in shaping workforce stability, making the physical environment a key factor in determining employee mobility across different contexts.

In East Africa, Miring'u (2018) conducted a study on labor mobility among teachers in public tertiary institutions in Kenya, revealing that the physical work environment played a critical role in influencing teachers' intentions to move. The study emphasized that fair human resource practices, participative management, and conducive workplace environments were essential in reducing attrition rates. Similarly, the current study at Dodoma High Court found that safety measures and collaborative workspaces significantly contributed to employees' decisions to stay or leave. Miring'u's research reinforces the importance of a positive and safe work environment as a primary driver of labor mobility across sectors, supporting the notion that workplace improvements can reduce mobility across different professions.

In Tanzania, Moroni (2016) focused on the impact of the physical working environment on teacher turnover in public primary schools in Sengerema District, Mwanza. The study identified challenges such as insufficient desks, overcrowded classrooms, and a lack of office furniture for teachers, which contributed to a high annual turnover rate. Moroni's findings are consistent with those of the current study at Dodoma High Court, where physical workspace conditions, such as the availability of tools and safety measures, were found to be critical in influencing labor mobility. Both studies highlight the need for organizations and institutions to invest in improving the physical environment to promote employee retention and reduce turnover.

Despite the insights provided by these global and regional studies, a significant research gap exists in the context of labor mobility within judicial institutions in Tanzania. Most of the existing literature, such as that of Moroni (2016), has focused on educational settings or broader regional infrastructure issues, leaving a gap in understanding how specific workplace conditions within legal institutions, such as Dodoma High Court, affect labor mobility. This study aims to fill that gap by examining the role of the physical environment in influencing labor mobility specifically within the judicial sector in Tanzania. By focusing on Dodoma High Court, this study provides crucial insights that can inform future efforts to improve workplace conditions and reduce labor mobility in Tanzania's legal institutions.

5. Conclusion, Implications, and the Area for Further Research

5.1 Conclusion

The findings of this study underscore the critical role that the physical environment plays in influencing labor mobility within Dodoma High Court. Elements such as accessibility to essential tools and equipment, safety measures, and office layout were found to significantly impact employees' decisions to remain in their current roles or seek employment elsewhere. A well-maintained and supportive physical workspace, as indicated by the higher mean scores for access to tools and safety measures, contributes positively to employee satisfaction and retention. This conclusion resonates with global and regional research that links a conducive physical environment to lower employee turnover and enhanced workforce stability. Ultimately, this study reveals that creating a safe, resourceful, and collaborative workspace can effectively reduce labor mobility by addressing key factors that influence employees' job satisfaction and commitment to the organization.

Moreover, the qualitative data reinforced the quantitative findings, with management personnel emphasizing the importance of workplace safety and resources in shaping employees' experiences. These insights highlight the necessity for institutional investment in improving physical working conditions, as the environment not only affects employee productivity but also plays a pivotal role in their decision-making regarding mobility. Without such improvements, organizations risk facing higher rates of employee turnover, which could undermine institutional stability and performance in the long run.

5.2 Implications

The implications of this study for policy and management are significant. First, the findings call for immediate attention to the physical working environment within judicial institutions such as Dodoma High Court. Management should prioritize investing in essential tools, equipment, and office safety measures. Ensuring that employees have easy access to necessary resources and feel safe in their work environment could substantially reduce labor mobility. Institutions should also re-evaluate the design and layout of their workspaces to foster better collaboration and interaction among employees. Such measures can lead to a more satisfied workforce, which is less likely to seek employment elsewhere.

For policymakers, this study highlights the importance of developing national standards and guidelines to improve physical workplace environments across sectors, particularly in government institutions like the judiciary. The insights gained from this study could help shape future policies aimed at enhancing employee retention by improving working conditions. Furthermore, organizations in both public and private sectors should adopt a more holistic approach to employee management, considering both the physical and psychological aspects of the work environment to address labor mobility effectively.

Lastly, the findings suggest that future research should explore labor mobility in different sectors, particularly in under-researched areas such as legal and judicial institutions. By extending the focus to these areas, scholars and practitioners can develop a deeper understanding of how the physical environment shapes employee experiences and informs their decisions to remain or leave an organization. This could provide a more comprehensive framework for addressing labor mobility issues across various industries in Tanzania and beyond.

5.3 Area for Further Research

Future research could explore the long-term effects of continuous physical environment improvements on labor mobility and employee retention, particularly in different types of judicial or governmental institutions across Tanzania. Comparative studies between urban and rural court environments could provide insights into how geographical and infrastructural differences impact employee satisfaction and mobility. Additionally, examining the role of psychological factors, such as workplace stress and employee well-being, in conjunction with the physical environment could provide a more comprehensive understanding of the factors

influencing labor mobility. These areas would help refine organizational strategies for enhancing employee retention across various sectors.

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The Effect of Contractor Selection on the Performance of Construction Projects in Water Supply and Sanitation Authorities: A Case of Dodoma Water Supply and Sanitation Authority

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Abstract

This study was to assess to examine the effect of contractor selection on performance of construction projects. The study used cross-sectional design while simple random sampling technique was used to select members of sample size who were 201 respondents. Data were collected through questionnaire and interview while data were analyzed using descriptive and multiple linear regression analysis for quantitative data and content analysis for qualitative data. The findings reveals delays in project completion were mainly caused by unforeseen circumstances beyond the contract terms while contractors with significant experience consistently deliver high-quality construction projects and contract supervision ensures adherence to terms and conditions, indicating a positive perception of the effectiveness of supervision in ensuring compliance. The study concluded that there is significant relationship between independent variable namely contractor selection ($P < 0.002$), and dependent variable performance of construction projects.

Keywords: Contractor, selection, performance, construction, project, water supply, sanitation,

1. Introduction

The construction projects have been given significant consideration to most entities as it consumes the greatest amount of money (Changalima, 2016; Mchopa, 2015). Worldwide, public procurement has become an issue of concern and debate, and has been subjected to reforms, restructuring, rules and regulations (Changalima, 2016). The linkage of procurement to construction project in particular, makes the embracing of best practices important to present organizational success (Israel *et al.*, 2019). In the other hand, public projects are the type of scheme or activities that are managed by the government or state focusing at solving community needs (Djankov *et al.*, 2016). These projects require close attention since they have a great impact in countries economy. There have been raising issues that states the project managers who are given authority with the government on project construction do not follow the recommended procurement procedures in terms of project design, selection of contractor and even contract supervision. In many parts of the world such as (Europe, Bangladesh, Australia, China, Hong Kong, India, Indonesia, Korea, Pakistan and Palau) apply procurement practices in their constructional activities. Cost, time and quality are constraints in procurement practices that hinder projects development (World Bank, 2016).

In Africa countries, still procurement performance in construction projects particular on contractor selection has been associated with the number of challenges. Yai (2022) in Ethiopia indicated that, poor procurement practice in the construction projects in terms of supplier selection in the public procurement entities has been a problem due to non-compliance of procurement regulations, lack of adherence to procurement procedures, lack of professionalism in undertaking procurement activities, lack of transparency and integrity in tendering processes. In the other hand, Ogutu and Muturi (2017) in Kenya revealed that in Kisumu many construction projects fail to be completed in time causing cost overruns and thus was associated with poor supplier selection.

In Tanzania each Public entity (PE) required to perform Procurement tasks and is held accountable for all Procurement decisions under Public Procurement Act (PPA) Cap 410, the law that governs public procurement in the country. The Act also specifies the purposes and mandates of any operational or regulatory organizations that may be established. It lays out guidelines for Public Procurement and includes procedures, methodologies, and punishments for illegal behavior. In addition, a framework for resolving complaints and regulations over public procurement is outlined (Mahuwi & Panga, 2020). However, the practice of procurement in construction projects in Tanzania has been associated with various challenges that affect performance of public procurement. For example, the report Prevention and Combating Institute and Corruption which monitored the construction of 41 out of 67 district hospitals in various councils in this country identified several gaps and challenges such as compliance with the poor project design, poor supplier selection, lack of supervision, law, regulations, procedures and guidelines used, quality of work; and use of funds.

Effective performance of construction projects is determined by various factors, including selecting the right contractor, which enhances project delivery outcomes (Lee, 2016). Additionally, the procurement of materials, workers' selection, building component assemblage, and equipment and tools are key categories of supervision necessary throughout the project construction lifespan (Ajao, 2019). Despite these considerations, there has been poor performance of construction projects due to inadequate procurement practices. This issue has constrained water supply and sanitation authorities, affecting the performance of their construction projects. For instance, the project carried out by Dodoma Water Supply and Sanitation Authority for the expansion of waste water stabilization ponds is one of the projects allocated by poor procurement practices however the project is still ongoing. Despite efforts by DUWASA to increase contract supervision and advise the contractor to enhance labour and work on-site, the project remains incomplete.

The contractor was given an additional four months to compensate for delays attributed to external factors such as the Ukraine war and COVID-19, which caused material shortages and price changes. Nevertheless, the project is still unfinished, and the contractor is now subjected to liquidated damages of 0.1% per day of the contract price for 100 days, with the contract facing termination if not completed. Despite these efforts, issues persist, with complaints regarding contractual arrangements, contractor selection, and contract supervision. The study by Lee (2016) underscores the importance of selecting the right contractor for effective project delivery. Similarly, Ajao (2019) highlights the necessity of proper procurement and supervision

of materials, workers, building components, and equipment throughout the project lifecycle. However, these studies have not adequately focus on planning and design. The study aims to fill this gap by examining the extent to which contractor selection impact the performance of construction projects.

This study was guided by agency theory which is concerned with agency relationships. The two parties have an agency relationship when they cooperate and engage in an association wherein one party (the principal) delegates decisions and/or work to another (an agent) to act on its behalf (Eisenhardt, 2019). The important assumptions underlying agency theory is that; potential goal conflicts exist between principals and agents; each party acts in its own self-interest; information asymmetry frequently exists between principals and agents; agents are more risk averse than the principal; and efficiency is the effectiveness criterion. Two potential problems stemming from these assumptions may arise in agency relationships: an agency problem and a risk sharing problem. An agency problem appears when agents' goals differ from the principals' and it is difficult or expensive to verify whether agents have appropriately performed the delegated work (i.e. moral hazard). This problem also arises when it is difficult or expensive to verify that agents have the expertise to perform the delegated work (i.e. adverse selection) that they claim to have. A risk-sharing problem arises when the principals and agents have different attitudes towards risk that cause disagreements about actions to be taken. The assumptions and prescriptions of agency theory fit naturally with the issues inherent in supply chain quality management. It is the responsibility and contractual agreement for contractors as an agent to perform according to the terms and conditions stipulated in the contractual agreement. When the contractor fails to accomplish the project, that renders to affect the project at large. In that regard, this theory is important particularly when it comes to the issue of selecting the supplier. In the similar case the principal agent theory provides valuable insights into how procurement practices can affect the performance of construction projects. Through understanding the potential conflicts of interest and information asymmetry between the principal and the agent, the theory helps in identifying the factors that can influence the project's performance. For example, procurement practices that encourage greater collaboration between the principal and the agent, such as design-build, can help align their interests and reduce potential conflicts. This can lead to better communication, more effective risk management, and overall improved project performance. On the other hand, procurement practices that create distance between the principal and the agent, such as design-bid-build, can result in misalignment of interests, limited information sharing, and suboptimal project outcomes.

In aligning with agency theory, Fundi and Lyimo (2019) assessed the effect of procurement plan on the project delivery in Tanzania Building Agency. The researcher applied case study research design and used both primary and secondary data where simple random sampling were used and picked 64 respondents from the whole population at the TBA. Data was collected using questionnaire. The collected data was statistically and analyzed using Statistical Package for Social Science (SPSS) software version 25. The researcher found there is direct relationship between procurement plan and project delivery, where procurement plan affects project delivery in terms of time. Also the study found that procurement plan is getting approval from

before starting implementation of the plan. Study findings revealed that, cost estimations, clear budgeting procedures, lack of market price survey and price fluctuations and reallocation of project funds it affects time for delivery of construction project at TBA. Moreover, findings unveiled that staff competence, staff training and capacity building affects preparation of project procurement plan. It can be said that both studies were conducted in Tanzania, while the reviewed study was conducted at TBA, the current study was conducted at MWAUWASA. In the similar case, while the reviewed study used case study, the study used cross-sectional design.

2. Method

2.1 Research Design

The study employed a cross-sectional design; this is because the collection of data was done at Dodoma Water Supply and Sanitation Authority at a single point in time. The research design was used to examine effect of procurement practices on performance of construction projects at Dodoma Water Supply and Sanitation Authority at a certain moment in time and it is thought to be cheaper and less time-consuming allowing the researcher to easily collect data that was used as a basis for further research.

2.2 Research Design

The study was conducted at Dodoma Water Supply and Sanitation Authority. The reason for the selection of this study area is due to the fact that Annual Procurement Plan (APP) of fy 2022/2023 for Dodoma Water Supply and Sanitation Authority showed that the budget for construction projects was TZS 26.8 billion among it, TZS 21.7 billion covers construction works which is equal to 81.1% of the Dodoma Water Supply and Sanitation Authority Total Annual Procurement Plan. Therefore, choosing Dodoma Water Supply and Sanitation Authority as the case study improved reliability of the findings. The selection of Dodoma Water Supply and Sanitation Authority (DUWASA) as the study area is justified by its significant budget allocation for construction projects, with TZS 21.7 billion out of a total TZS 26.8 billion Annual Procurement Plan (APP) for the fiscal year 2022/2023 dedicated to construction works, representing 81.1% of the total APP.

2.3 Study Population

The population of the study comprises 405 staff members from Dodoma Water Supply and Sanitation Authority (DUWASA) (Dodoma Water Supply and Sanitation Authority report, 2023). This choice is justified because DUWASA is a significant entity responsible for substantial construction projects, as evidenced by its large budget allocation for such works.

2.4 Sample Size and Sampling Procedures

2.4.1 Sample Size

The sample size of the study is 201 respondents and was obtained using formula proposed by Yamane (1967) for the known population. Where; N is the population, n is the sample size, e is the error term. The study used 95% degree of accurate therefore the error time is 5% .

$$n = \frac{N}{1 + N(e^2)}$$

$$405 / (1 + 405(0.05)^2) = 405 / 2.0125 = 201$$

Thus the sample size of the study was 201 respondents

2.4.2 Sampling Procedures

This study used a simple random sampling technique to get members of sample size who was 199 operational staff. This is a probability sampling whereby all members in the population have an equal chance of being selected. A simple random sampling strategy was used by picking respondents randomly, since they have equal chance to participate in the study. The technique was recommended when the population is made up of members with similar characteristics.

2.5 Data Collection Tool

The designed structured questionnaire was formulated to capture knowledge and experience from 199 respondents who are operational staff. This exercise of data collection was conducted for one week. The format of questionnaire will be likert of 5 scale whereas 1= Strongly disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly agree. The questionnaire was administered by visiting to the office where the respondents work and for that case, it was drop and pick method to distribute questionnaires.

2.6 Data Analysis

Descriptive analysis and regression analysis were performed in order to determine strength of the study variables. The descriptive analysis involved calculation of frequency, mean and percentage while multiple linear regressions were used to establish relationship between independent variables. Multiple linear regression equation on the effect of contractor selection on performance of construction projects in Water Supply and Sanitation Authorities, Tanzania.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e \dots \dots \dots (2)$$

Y= Contractor selection

β_0 = Constant factor

X₁ = Experience

X₂ = Expertise

X₃ = Ability to manage risks

3. Results

Respondents were asked to state their level of agreement concerning the effect of contractor selection. From that point of view, the study findings are presented in Table 1 -

Table 1: Effect of Contractor Selection on Performance of Construction Projects in Water Supply and Sanitation Authorities

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
	B	Std. Error	Beta	
1 (Constant)	-0.408	0.393		-1.039
Contractors with specific expertise relevant to project requirements demonstrate superior performance.	0.161	0.039	0.146	4.128
The contractor selection process adequately assesses and prioritizes expertise.	0.184	0.144	0.168	1.278
Contractors with a demonstrated ability to manage risks effectively contribute to project success.	0.134	0.144	0.130	0.931
The contractor selection criteria appropriately consider the ability to handle and mitigate project risks.	0.334	0.045	0.471	7.422
Projects with contractors possessing strong risk management skills exhibit better overall performance.	0.164	0.057	0.184	2.877

Source: Field Data, 2024

The unstandardized coefficient for the intercept is -0.408, suggesting that when all other independent variables are held constant, the dependent variable would decrease by 0.408 units. This intercept essentially represents the baseline level of the dependent variable when no other factors are influencing it. The standardized coefficient is not applicable to the intercept as it is a reference point rather than a variable. The t-statistic of -1.039, paired with a p-value of 0.300, indicates that the intercept is not statistically significant. This lack of significance means that the baseline prediction of the dependent variable is not reliably different from zero, suggesting that other variables in the model have more direct and significant impacts on the outcome.

The unstandardized coefficient for the variable "Contractors with specific expertise relevant to project requirements demonstrate superior performance" is 0.161, which implies that for every one-unit increase in the specific expertise of contractors, the dependent variable—likely a

measure of project performance—rises by 0.161 units. The standardized coefficient is 0.146, meaning that a one standard deviation increase in this expertise results in a 0.146 standard deviation increase in the dependent variable. With a t-statistic of 4.128 and a p-value of 0.013, this variable is statistically significant, indicating that contractors with specialized knowledge are strongly associated with improved project performance. This underscores the importance of selecting contractors who have expertise that aligns with the specific needs of the project.

The unstandardized coefficient for "The contractor selection process adequately assesses and prioritizes expertise" is 0.184, suggesting that for every unit increase in the adequacy of the selection process in assessing and prioritizing expertise, the dependent variable increases by 0.184 units. The standardized coefficient is 0.168, showing that a one standard deviation increase in the selection process's adequacy corresponds to a 0.168 standard deviation rise in the dependent variable. With a t-statistic of 1.278 and a p-value of 0.049, this variable is marginally significant, suggesting that while the contractor selection process has a positive effect on performance, this effect is not as strong as other factors. However, the marginal significance still highlights the role of a well-structured selection process in achieving better project outcomes.

For "Contractors with a demonstrated ability to manage risks effectively contribute to project success," the unstandardized coefficient is 0.134, which means that each one-unit increase in contractors' ability to manage risks effectively leads to an increase of 0.134 units in the dependent variable. The standardized coefficient of 0.130 suggests that a one standard deviation increase in risk management capability leads to a 0.130 standard deviation increase in project performance. The t-statistic is 0.931, with a p-value of 0.036, indicating that this variable is statistically significant. This shows that contractors' capability in managing risks plays a meaningful role in driving project success, emphasizing the value of risk management skills among contractors to ensure smooth project execution and better outcomes.

The unstandardized coefficient of 0.334 for "The contractor selection criteria appropriately consider the ability to handle and mitigate project risks" suggests that for every unit increase in how well the selection criteria consider contractors' ability to handle risks, the dependent variable increases by 0.334 units. The standardized coefficient of 0.471 indicates that a one standard deviation improvement in these selection criteria is associated with a 0.471 standard deviation increase in the dependent variable. The t-statistic is 7.422, and the p-value is 0.000, making this variable highly statistically significant. This indicates that the criteria used in selecting contractors, particularly those that prioritize risk management abilities, have a substantial and positive impact on project performance. It highlights the importance of having thorough criteria during the contractor selection process to ensure that those selected can effectively manage project risks.

The unstandardized coefficient of 0.164 for "Projects with contractors possessing strong risk management skills exhibit better overall performance" means that for each unit increase in contractors' strong risk management skills, the dependent variable rises by 0.164 units. The standardized coefficient of 0.184 indicates that a one standard deviation improvement in

contractors' risk management skills corresponds to a 0.184 standard deviation increase in project performance. With a t-statistic of 2.877 and a p-value of 0.004, this coefficient is statistically significant. This finding underscores the positive impact of contractors who excel in risk management on the overall success of projects. It suggests that contractors with advanced risk management capabilities can effectively handle unforeseen challenges, contributing to better outcomes and overall project success.

Generally, findings entail that contractors with significant experience consistently deliver high-quality construction projects at DUWASA due to several key factors that contribute to their success. These contractors have honed their skills over time, developed efficient processes, and possess a deep understanding of the specific requirements and challenges associated with water supply and sanitation projects. In this detailed analysis, we will explore the reasons why experienced contractors excel in delivering top-notch construction projects for Dodoma Water Supply and Sanitation Authority.

Experienced contractors bring a wealth of expertise to the table when working on projects for DUWASA. They have likely worked on numerous similar projects in the past, allowing them to develop specialized knowledge and skills that are crucial for successful project delivery. For example, a contractor who has previously completed water supply infrastructure projects will have a deep understanding of the technical requirements, regulations, and best practices in this field. This expertise enables them to make informed decisions, anticipate potential challenges, and implement innovative solutions that ensure high-quality outcomes.

Another key advantage that experienced contractors possess is their established relationships with suppliers, subcontractors, and other industry stakeholders. Over time, these contractors have built strong networks that they can leverage to source high-quality materials at competitive prices, collaborate with reliable subcontractors, and access specialized expertise when needed. Through working with trusted partners who share their commitment to quality and excellence, experienced contractors can streamline project execution, minimize delays, and maintain stringent quality control throughout the construction process.

4. Discussion

4.1 Discussion of the Findings

Generally, findings entail that contractors with significant experience consistently deliver high-quality construction projects at DUWASA due to several key factors that contribute to their success. These contractors have honed their skills over time, developed efficient processes, and possess a deep understanding of the specific requirements and challenges associated with water supply and sanitation projects. In this detailed analysis, we will explore the reasons why experienced contractors excel in delivering top-notch construction projects for Dodoma Water Supply and Sanitation Authority. Experienced contractors bring a wealth of expertise to the table when working on projects for DUWASA. They have likely worked on numerous similar projects in the past, allowing them to develop specialized knowledge and skills that are crucial for successful project delivery. For example, a contractor who has previously completed water supply infrastructure projects will have a deep understanding of the technical requirements,

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This is supported by Yai (2021) that experienced contractors possess in-depth knowledge of construction methods, materials, and techniques. This expertise allows them to plan and execute projects with precision and efficiency. With years of experience, contractors have encountered and resolved a wide array of challenges. This background equips them to anticipate potential issues and implement effective solutions quickly. Seasoned contractors excel at creating detailed project plans and schedules. They understand the sequence of operations and can coordinate various trades and activities to minimize delays.

On the other hand projects entrusted to experienced contractors result in better overall outcomes. The majority of respondents either agrees or strongly agrees with this statement. This entails that experienced individuals or firms have a wealth of expertise and knowledge accumulated over years of working on similar projects. In the case of the DUWASA, an experienced firm would have a deep understanding of water supply systems, sanitation infrastructure, regulatory requirements, and best practices in the industry. This knowledge allows them to make informed decisions at every stage of the project. For example, if an experienced engineering firm is contracted for a water supply project by the Dodoma Water Supply and Sanitation Authority, they would have encountered various challenges in similar projects before. This experience enables them to anticipate potential issues, devise effective solutions quickly, and ensure that the project stays on track.

Experienced individuals or firms are adept at efficient planning and execution of projects. They have established processes, methodologies, and tools honed through years of practice. When applied to a project like the one undertaken by the Dodoma Water Supply and Sanitation Authority, this streamlined approach ensures that timelines are met, resources are utilized optimally, and quality standards are maintained. For instance, an experienced project manager leading a sanitation infrastructure project for the Dodoma Water Supply and Sanitation Authority would have a well-defined plan with clear milestones, resource allocation strategies, risk mitigation measures, and communication protocols in place. This level of planning minimizes delays, cost overruns, and other common pitfalls in project management. The study findings are linked to the study by Sekanyange (2016) experienced professionals bring a wealth of knowledge and skills accumulated over years of practice. They understand the

nuances and complexities of their field, which allows them to anticipate and mitigate potential issues before they become major problems.

Experienced firms and individuals typically have a history of successful projects. This track record demonstrates their capability to deliver results, build trust with clients, and establish reliability. With experience comes the ability to work more efficiently. Experienced contractors know the most effective processes and methods, reducing the time and resources needed to complete a project. Experienced professionals are better equipped to identify, assess, and manage risks. Their familiarity with potential challenges and their solutions allows for proactive risk management. Also contractors with specific expertise relevant to project requirements demonstrate superior performance at Dodoma Water Supply and Sanitation Authority due to several key reasons. This can be illustrated through an example where a contractor with specialized knowledge in water infrastructure projects was hired for a major water supply project in Dodoma.

The specialized water infrastructure contractor, due to their specific expertise in water projects, understands the intricate details involved in designing and constructing efficient water supply systems. They are well-versed in industry best practices, materials selection, and technology advancements that directly impact the quality of work delivered. With their focused experience, the specialized contractor can streamline project processes, anticipate challenges specific to water supply projects, and implement solutions promptly which leads to improved efficiency and adherence to project timelines. Contractors with relevant expertise are more likely to accurately estimate project costs, avoid costly mistakes common in unfamiliar territory, and optimize resource allocation. This results in better cost control throughout the project lifecycle. Specialized contractors are adept at identifying potential risks associated with water infrastructure projects and have strategies in place to mitigate these risks effectively. Their proactive approach minimizes disruptions and ensures smoother project execution. The study findings are linked to the study by Faridi and El-Sayegh (2016) that contractors with specific expertise relevant to project requirements demonstrate superior performance due to their specialized knowledge and skills in the particular area of focus. When a contractor has experience and expertise directly related to the project at hand, they are better equipped to understand the nuances of the work, anticipate challenges, and implement effective solutions. This specialized knowledge allows them to work more efficiently and effectively, leading to superior performance outcomes. Contractors with specific expertise in the relevant field have a deeper understanding of the project requirements. They are familiar with industry standards, best practices, regulations, and potential pitfalls that may arise during the course of the project. This comprehensive understanding enables them to tailor their approach to meet the specific needs of the project, ensuring that it is completed successfully and within budget and timeline constraints.

Moreover, about 63% strongly disagreed, 16% disagreed, 82% neutral, 14% agreed, and 80% strongly agreed the expertise of selected contractors significantly contributes to the success of construction projects. This variable underscores the impact of contractor expertise on the success of construction projects. A large percentage of respondents strongly agree that

contractor expertise plays a crucial role in project success. The study findings suggest that expert contractors bring a high level of skill and experience to construction projects, ensuring that the work is completed to the highest standards. This is crucial for the Dodoma Water Supply and Sanitation Authority as they need reliable infrastructure that meets all necessary regulations and standards. For example, if a contractor specializes in water supply projects, they will have the expertise to design and implement systems that are efficient and durable.

On the other hand experienced contractors have a deep understanding of project management processes, allowing them to effectively plan, coordinate, and execute construction projects. This expertise helps in avoiding delays, cost overruns, and other issues that can hinder the success of a project. Through having skilled contractors on board, the Dodoma Water Supply and Sanitation Authority can ensure that their projects are completed on time and within budget. In the same trail construction projects at the Dodoma Water Supply and Sanitation Authority must adhere to strict regulations related to safety, environmental impact, and quality standards. Expert contractors are well-versed in these regulations and ensure that all aspects of the project comply with them. For instance, contractors with experience in sanitation projects will know how to design systems that meet health and safety requirements. Also experienced contractors often bring innovative ideas and solutions to construction projects. Their expertise allows them to identify potential challenges early on and develop creative solutions to overcome them. This is particularly important for complex projects undertaken by the DUWASA where unique problems may arise that require specialized knowledge to resolve. The study findings are linked to the study by Sekanyange (2016) that construction projects often involve complex engineering and architectural designs, requiring a high level of technical knowledge and specialized skills. Experienced contractors possess the necessary expertise to interpret project plans accurately, employ appropriate construction techniques, and ensure that the work is carried out in accordance with industry standards and building codes. Successful construction projects demand effective project management skills, including scheduling, resource allocation, coordination of subcontractors, quality control, and risk management.

4.2 Limitations of the Study

This study was limited to examine the effect of contractor selection on performance of construction projects in Water Supply and Sanitation Authorities. The study was limited to Dodoma Water Supply and Sanitation Authority. The study was limited to the cross sectional research design while the focus of the study was based on the quantitative approach.

5. Conclusion, Implications, and the Area for Further Research

5.1. Conclusion

The study concludes that contractor selection plays significant role on performance of construction projects since Contractor selection has an unstandardized coefficient of 0.212 and a standardized coefficient (Beta) of 0.194, also showing a positive and statistically significant impact on project performance with significant value of ($P < 0.002$).

5.2 Implications

The selection of contractors plays a critical role in determining the success or failure of construction projects, particularly in sectors such as water supply and sanitation. In the context of the Dodoma Water Supply and Sanitation Authority properly selected contractors are more likely to complete projects within budget due to their experience and resource management capabilities. Contractors who have demonstrated reliability in meeting deadlines contribute positively to project timelines, reducing delays that can arise from inexperienced teams. The quality of work is often directly correlated with the contractor's expertise; thus, selecting high-quality contractors can lead to better overall project outcomes. Contractors who prioritize sustainable practices contribute positively not only to immediate project goals but also align with broader environmental objectives.

5.3 Areas for Further Studies

This study focused on one variable namely contractor selection and thus further studies can focus on other variables such as planning and design as well as contractor supervision.

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Challenges facing integration of employee records systems in acquiring employment related services to in Dodoma city council

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Abstract

This study assesses the challenges related to the for selected public institutions in Dodoma City, Tanzania. The research intended to examine the integration of employee records system in acquiring employment related services by public servants. to. The study adopted mixed approach and survey design. Both primary and secondary data were collected through survey, interview and documentary review. The data analysis was done through descriptive statistics, and content analysis. It was noted that technology limitations, resource constraints, inadequate support services and legal or regulatory complexities had significant challenges on the integration of employees records in acquiring services related to employment. It was recommended that government should intensify capital on the integration of employees' records for easy operations.

Key words: *Employees records, Dodoma city council and Service Delivery*

1. Introduction

1.1. Introduction to the Problem

Employee records management is a critical component of effective human resource management, especially in public institutions. These records not only facilitate the smooth provision of employment-related services but also ensure transparency, accountability, and regulatory compliance. Previous studies highlight challenges in integrating employee records (ERs) systems, including technical barriers, data security concerns, compliance with regulations, and resistance to change. Smith and Lee (2022) noted that many organizations struggle with integrating disparate systems, leading to data storage tower and inefficiencies. Johnson *et al.* (2023) emphasized the importance of change management to overcome resistance to system integration. The notable challenge is the failure to consolidate available databases or employee records (ERs) system harmonization of service delivery among employees. The integration of ERs system in public institutions assist in streamlining operations, enhancing transparency and optimizing organizational performance. In this regard the need to change from manual (traditional personnel management practices) to digital human

resource information systems reflects the growing need for synchronisation of ERs management (Adeoti, 2015).

Globally, poorly integrated record management systems lead to inefficiencies in human resource services, causing delays in the administration of pensions, health insurance, and promotions (Johnson & Lee, 2024). Studies in Tanzania have reported similar issues, highlighting inadequate technological infrastructure, a shortage of skilled personnel, and insufficient financial resources as major barriers to efficient record management in public institutions (Komba, 2021).

Historically, in Tanzania employee records were manually maintained which proved to be tedious, prone to errors and lacked the flexibility and adaptability for enhanced service delivery in work places. The increases of institutions' complexity compelled a more systematic and technologically advanced ERs system (Ngulube, 2020). The advent of human resource information systems marked a paradigm shift in the management of employee records (Jones & Brown, 2019). The rationale for the integrated ERs is that it poses lots of the benefits in the public sector.

Furthermore, Mushumbusi & Komba (2022) noted that effective employee records management involves the systematic control of data from the point of hire to retirement, including information on performance, attendance, benefits, and personal details. However, challenges such as outdated technology, insufficient resources, lack of training, and regulatory bottlenecks have complicated efforts to improve the system, making it difficult for employees to access services in a timely and accurate manner. In Dodoma City Council, as in many public institutions across Tanzania, the process of acquiring employment services—such as accessing benefits, processing promotions, and handling employment disputes—has been hindered by inefficient record-keeping systems. This study focuses on the challenges facing employees of Dodoma City Council in acquiring employment-related services due to inefficiencies in the employee records system, a topic of increasing importance as the council seeks to improve its service delivery to meet the demands of a growing workforce. Addressing these challenges will require both investment in technology and the development of new policies that promote better record management practices (Chigona et al., 2017).

ERs system leverage technology to centralize employee data, encompassing a wide array of information, from personal details and employment history to performance metrics and training records. Human resource information systems not only enhance data accuracy but also facilitate real-time access to critical information, enabling HR professionals and management to make decisions swiftly. Likewise, an effective ERs system should be featured by data centralization, security measures, automation, scalability and compliance (Kessy&Temu, 2018).

The implementation of a comprehensive ERs system yields efficiency (reducing administrative burden and time spent on manual record-keeping tasks) (Mnjama & Wamukoya, 2017), data accuracy (minimizing errors associated with manual data entry and maintenance), strategic decision making (providing data driven insights for workforce planning, talent management

and succession planning) (Ngulube, 2018) and employee engagement (enhancing employee experience through self-service features and transparent access to personal data) (Adeoti, 2015).

Despite several benefits of ERs, organizations must also navigate challenges such as data security concerns, system integration complexities and the need for ongoing training to ensure optimal system utilization. Generally, a well designed and implemented system not only streamlines HR processes but also positions organizations to effectively manage and leverage their most valuable asset – their workforce (Wang & Lee, 2018).

1.2 Statement of the problem

In Tanzania, various public entities have adopted the Employee Records (ERs) system to enhance service delivery. For instance, the ERs system has proven to be very useful in institutions such as the President's Office Public Service Management and Good Governance (PO-PSMGG), the Public Service Social Security Fund (PSSSF), the National Health Insurance Fund (NHIF), and the National Identification Authority (NIDA). However, despite the benefits of having ERs, such information is rarely integrated, rendering difficulties in service delivery related to employment.

Moreover, the persistence of the problem regarding ERs negatively impacts employees economically. Recent studies highlight that effective digital information management is crucial for enhancing employee satisfaction and economic well-being. Specifically, research by Mhando et al. (2023) indicates that streamlined digital processes improve employees' financial access by minimizing record discrepancies. Furthermore, Kilonzo (2024) suggests that organizations with efficient information management systems tend to have lower turnover rates, demonstrating that accurate digital records promote job security and employee retention in Tanzania. Nevertheless, decisive and conclusive studies remain rare in Tanzania. In addition, few studies have linked inadequate infrastructure and resistance to change as impediments to the seamless implementation of ERs (Onyancha and Magara, 2010; Mnjama, 2015).

The failure of the employee records system contradicts the attributes of the Technological Acceptance Model (TAM) theory, which suggests that the level of applicability of any new technology is a function of its usefulness. In particular, users believe that a particular technology will enhance their job performance, thereby influencing their decision to accept and use the technology (Venkatesh & Davis, 2000). Moreover, perceived ease of use is likely to affect its acceptance, while the behavioral intention to use the technology is influenced by perceived usefulness and ease of use (Venkatesh et al., 2012). TAM is applicable in this context, as challenges related to the integration of the employee records system could be reduced if the ERs system is perceived as useful and easy to use.

Empirically, various studies conducted on ERs affirm the presence of challenges relating to the employee records system (Smith et al., 2020; Gupta and Patel, 2018; Jones and Brown, 2019).

Despite the adoption of new technologies for data storage, problems related to the employee records management system continue to face integration challenges. Consequently, this study aimed at determining the challenges of integrating the ERs system in Dodoma City Council in Tanzania.

1.3. Literature Review

Employee records are essential for the effective delivery of human resources services and the overall management of employment-related functions. For instance, Johnson et al. (2024) in Australia linked erroneous records with inaccurate data that negatively affect decision-making. Similarly, Brown and Davis (2024) found that institutions with inadequate security measures face legal consequences and suffer a loss of employee trust. In addition to this sentiment, Smith and Lee (2024) noted that unconsolidated and disparate systems lead to data silos and inefficiencies in service delivery.

Moreover, Lee and Robinson (2024) observed that Identity Governance and Administration (IGA) enables security administrators to efficiently manage user identities and access across the enterprise. Additionally, Garcia and Hernandez (2024) found that systems with awkward interfaces and limited access options frustrate both human resources staff and employees, leading to decreased satisfaction and productivity. Furthermore, Martin et al. (2024) revealed that errors in employee data lead to payroll discrepancies, which can cause unnecessary delays in payments and disputes, ultimately affecting employee morale.

Moreover, managing employee benefits requires accurate and up-to-date records. Walker and Thompson (2024) found that inaccuracies in employee records adversely affect employees' access to benefits. Similarly, effective performance management depends on the accuracy and accessibility of employee records. In support of this, Patel and Mehta (2024) emphasize that inconsistencies in records foster unfair appraisals and hinder career development. Additionally, Wilson et al. (2024) linked delays in updating records to poor first impressions for new hires, while Smith and Lee (2024) noted that poor manpower records diminish employees' confidence in the system. However, it is important to note that these studies were conducted outside of Tanzania.

Conversely, Mushi et al. (2021) focused on healthcare institutions in Tanzania, where the transition from traditional to digital employee records storage was associated with increased productivity. Yet, the current study aims to address crucial issues such as data inaccuracy, security concerns, system integration problems, compliance challenges, and poor user experience. By overcoming these challenges, organizations can improve the efficiency and effectiveness of their human resources operations, ultimately enhancing service delivery and employee satisfaction. Nonetheless, these studies have left a significant research gap unfilled.

1.4. Research Objective

The objective of this study was to examine challenges facing employee's records integration system in acquiring services related to employment in Dodoma City Council.

2. Research Methodology

This study adopted a mixed-method approach due to its effectiveness in assessing various aspects of a phenomenon, situation, problem, attitude, or issue by examining a cross-section of the population (Kumar, 2019). Additionally, qualitative methods, such as interviews and focus group discussions, were utilized as part of the mixed-method approach to gain deep insights into employees' experiences and perceptions regarding the effectiveness of the records systems, particularly in identifying the challenges they encounter (Creswell & Poth, 2018). In addition, quantitative methods, including surveys, were employed to collect measurable data on the extent of these challenges, facilitating a thorough analysis of their impact on service delivery (Kumar, 2019).

The research was carried out in Dodoma City Council, Tanzania, where public institutions are concentrated, and employee information is crucial for both government and personal use. In the same vein, employees from Dodoma City Council were selected as respondents, and 10 key informants from PO-PSMGG, PSSSF, NHIF, and NIDA were involved as participants. The study utilized a purposive sampling method, allowing the selection of knowledgeable key informants from NHIF, PSSSF, NIDA, and PO-PSMGG, who could provide valuable insights into the challenges surrounding the records systems. This method enhanced the depth of the data by focusing on participants capable of articulating their experiences and perceptions of the effectiveness of the employee records systems. Similarly, a random sampling technique was applied to select respondents from Dodoma City Council, as it is effective for investigating challenges related to employee records systems (Creswell & Cresswell, 2018).

Both primary and secondary data were collected through questionnaires, interviews, and documentary reviews, focusing on the employment records integration system and associated challenges. Moreover, the collected data were analyzed using descriptive statistics to identify patterns across variables, while content analysis was used to interpret the qualitative data obtained from interviews and documentary reviews. The questionnaire was tested for content validity to ensure it comprehensively covered all relevant aspects related to the challenge's employees face when accessing services connected to their employment.

3.0. Findings, presentation and discussion

The study intended to identify the Challenges facing integration of employees' records system in acquiring services related to employment. The identified challenges included; technology limitations, resources constraints inadequate support services and legal (regulatory) complexities. The Table 1 below describes the responses on the above identified employee related records challenges.

Table 1: Challenges facing employees' records in acquiring services related to employment (n = 66)

SSCSOs Challenges Frequency		Responses		Percentage of cases
		N	Percent	
Employees Challenges ^a	Technology limitations	120	20.30%	99.80%
	Resources Constraints	119	20.20%	99.20%
	Inadequate support services	118	20.00%	98.30%
	Legal (regulatory) complexities	117	19.80%	97.50%
Total		474	100.00%	394.80%

3.1. Technology Limitations

The challenge on the technological limitations had 120 responses (20.3% of total responses). This indicates that technology-related issues, such as outdated systems or lack of technological infrastructure, are a significant challenge. Nearly 100% (99.8%) of cases encountered technology limitations (Table 1). These observations concur with results of the Mwanri and Bwalya (2021) in a similar study highlighting significant challenges in technology infrastructure, including outdated systems and slow digital transitions. Moreover, these study results are in harmony with those of Sanga and Mselle (2020) explored the challenges faced by local governments in adopting ICT solutions for employee management systems in East Africa, noting frequent technological breakdowns and the lack of technical expertise as major setbacks.

These sentiments were supported by participant who stated that: -

".....One of the key challenges is the outdated and inefficient software used in managing employee records. Many participants noted that the systems in place are not fully digitized, leading to delays in updating and accessing employee information" (Interview/ Participant 1/ 2024).

This implies that technological limitations had a significant effect on the employees redocd system in Dodoma city council in Tanzania

Similarly, study findings tally with results of Nkondo *et al.* (2019) who noted that insufficient IT resources, including hardware and software, impeded the effective management of human resources information systems in Tanzanian universities. Lastly, these results are consistent with the results of Mlay *et al.* (2021) found that technical limitations in Tanzanian public institutions led to slow adoption rates of modern employee records systems, often resulting in incomplete records and loss of critical data.

3.2. Resource Constraints

Results from Table 1 show that resource constraints had 119 responses (20.2%) which represent people who admitted that resource constraints were challenges. Resource limitations, such as inadequate funding or materials for maintaining or improving the system, are another major challenge, with 99.2% of cases experiencing this issue. These results are in harmony with results of Ngoma & Kalole (2020) who learned that resource constraints in Tanzanian government offices, particularly the lack of budget allocation for updating employee record systems, led to inefficiencies in data management. To cement this sentiment participant 2 opined that: -

“.....The lack of investment in advanced software and technology solutions that could streamline the records management process affect employees’ records.....without adequate resources, the council continues to rely on outdated systems that do not meet modern requirements, leading to delays in processing employee information.....”(Interview/Participant 2/2024).

Furthermore, participant 4 pointed out that: -

“.....There are not enough skilled personnel dedicated to managing the records system. The existing staff is often overworked and undertrained, making it difficult to ensure the accuracy and consistency of employee records.....” (interview/participant 4/2024)

Moreover, the narration implies that lack of sufficient funding for regular training programs means that employees are not always updated on the latest record management practices or technologies, further hampering the system's effectiveness. Likewise, these findings resemble the study findings of Matemu *et al.* (2019) who found that financial limitations hindered the procurement of adequate software and maintenance for employee record systems. Thus, resource constraints are challenging the employee's records systems in Tanzania as a whole.

Besides, results of the study are congruent to the results of Magambo & Katunzi (2020) who learned that financial and human resources shortages as key obstacles in maintaining an updated and effective human resource information system in Tanzania's public sector. Additionally, study results were in line with those of Mwenda and Ngalula (2022) who found that resource constraints in health sector HR management in Tanzania, noting that limited resources delayed system upgrades and maintenance of employee records, leading to poor data quality.

3.3. Inadequate Support Services

The results in Table 1 show that inadequate support services had 118 responses (20%). This implies that the lack of sufficient support, whether technical or administrative, also poses a problem for maintaining the employee records system. This challenge affects 98.3% of cases. These study findings agree with those of Chaligha & Ngeze (2021) who revealed that many Tanzanian public institutions lacked sufficient technical support for their employee management systems, leading to poor data handling and maintenance.

Likewise, inadequate support services were identified by participants as a significant challenge affecting the efficiency of the employee records system in Dodoma City. Participant 3 noted that: -

“..... The lack of consistent technical support makes it difficult to address system malfunctions or resolve issues promptly..... when systems go down or errors occur, there is often a delay in receiving assistance, which leads to prolonged disruptions in accessing and updating employee information.....” (Interview/Participant 3/2024)

Moreover, this means that the absence of proper user training and technical guidance further complicates the situation, as employees struggle to navigate the system effectively, resulting in mistakes and delays in records management. This lack of timely and adequate support not only affects the accuracy and reliability of employee records but also hampers overall service delivery within the council.

On the other hand, these study results are comparable to those of Mwakatumbula *et al.* (2022) who found that inadequate IT support services were a critical barrier to the successful implementation of employee record systems in local governments, with frequent system downtimes going unresolved.

Similarly, study findings matched with those of Rutasitara & Komba (2020) who noted that in Tanzanian universities, limited technical support for human resource information systems resulted in poor system performance and user dissatisfaction. Additionally, these study findings are similar to those of Machingura & Mbogoni (2023) pointed out that poor IT support services affected the performance of electronic record systems in Tanzania’s civil service, resulting in incomplete records and delayed access to critical employee data.

3.4. Legal (Regulatory) Complexities

The results in Table 1 shows that the Legal (Regulatory) Complexities has 117 responses (19.8%). Legal and regulatory issues, such as compliance with labour laws and data privacy regulations, are challenges for 97.5% of cases. These studies are in line with results of Nyandinga & Malisa (2021) who found that compliance with data privacy laws was a major challenge for institutions implementing employee records systems. One of the key aspects of legal is the rigidity and outdated regulations governing the management of employee records,

which make it difficult to adapt to modern, more efficient digital systems. One of the participants declared that: -

“..... Certain legal requirements mandate the use of physical documents for employee records, which limits the council’s ability to fully digitize their processes..... This reliance on paper-based records results in delays in retrieving information and increases the risk of record mismanagement, especially in cases where documents are lost or damaged.....” (Interview/Participants 5/2024)

Moreover, participants noted that compliance with labor and data protection laws requires strict confidentiality and security measures, but the current systems are not adequately equipped to meet these standards. Likewise, these study findings were in congruence with those of Komba & Mtey (2022) found that Tanzanian public institutions faced complex regulatory requirements related to employee data management, often leading to delays and additional costs in system upgrades.

Additionally, Msangi & Ngowi (2019) examined the regulatory challenges surrounding data protection in Tanzania’s public sector, noting that the lack of clear legal guidelines made it difficult for institutions to securely manage employee records. Besides, study findings tally with those of Muganda & Lukoma (2020) reported that the evolving legal landscape around data security and employee rights in Tanzania posed significant challenges for the management of employee records systems, with institutions struggling to keep up with compliance requirements.

The Table 1 reveals that the primary challenges with the employee records system in Tanzania are multifaceted, with technology limitations and resource constraints being the most frequently reported. Inadequate support services and legal complexities also rank highly as systemic problems. These challenges collectively highlight the need for a comprehensive review and upgrade of the employee records management system, addressing both technical and legal aspects to ensure efficient operations.

4. Conclusion, Summary and Recommendation

Conclusively, technological limitations, resource constraints, inadequate support services, and legal complexities hinder the employee records system in Dodoma City Council. **Consequently**, these challenges cause delays in managing employee information and compromise data accuracy and service quality. **To address these issues**, the council should invest in upgrading its technological infrastructure, enhance staff training, and establish a dedicated support team for system maintenance. **Furthermore**, a review of legal frameworks is necessary for a smoother transition to efficient digital record-keeping practices.

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Challenges Facing Implementation of Training Programs in Employee Retention at Bahi District Council Health Department, Tanzania.

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Abstract

Globally, maintaining skilled personnel amidst competitive labour markets is increasingly prevalent. Worldwide; studies indicate that organizations across continents struggle with implementing effective training programs that significantly impact employee retention. This study examines the challenges facing implementing training programs in employee retention at the Bahi District Council Health Department in Tanzania. Utilizing a case study design, the research analyses the specific obstacles encountered within this context. Through purposive sampling, 10 key management personnel were selected, including the District Medical Officer in Charge, District Health Secretaries, District Nurse Officers, District Environmental Officers, District Pharmacists, District Laboratory Officers, and District Nutritionists. Data were collected via interviews, offering rich, contextual insights into the issues affecting training program effectiveness. The study employed content analysis to systematically categorize and interpret qualitative data, revealing three primary challenges: insufficient resources and funding, limited training opportunities, and inadequate relevance of training programs. These challenges highlight systemic and operational barriers that undermine the potential of training initiatives to improve employee retention. The findings suggest that addressing these issues requires strategic improvements in resource allocation, expansion of training opportunities, and alignment of training content with actual employee needs. By identifying these critical factors, the study aims to provide actionable recommendations for enhancing training programs and improving employee retention within the Health Department of Bahi District Council.

Keywords: *Training Programs, Training Opportunities, Resources, Employee Retention.*

Introduction

Employee retention has become a critical issue for organizations worldwide, influenced by various factors including training and development programs. Globally, the challenge of maintaining skilled personnel amidst competitive labour markets is increasingly prevalent. Studies indicate that organizations across continents struggle with implementing effective training programs that significantly impact employee retention. For instance, research

highlights that in North America, organisations face challenges related to the alignment of training with career development opportunities, which can affect retention rates (Smith et al., 2022). In Europe, the complexity of training programs and their integration into broader employee development frameworks often results in insufficient impact on employee loyalty and job satisfaction (Jones & Williams, 2021).

Similarly, in Asia, the emphasis on skill-based training sometimes neglects the broader aspects of employee engagement and development, leading to high turnover rates despite substantial investment in training programs (Lee et al., 2023). This issue is compounded in many regions by the disparity between training objectives and actual employee needs, which can undermine the effectiveness of retention strategies (Kim & Park, 2022).

In the African context, employee retention issues are further exacerbated by economic and infrastructural challenges. Many African countries, including those in sub-Saharan Africa, grapple with implementing training programs due to limited resources and inadequate infrastructure. Research shows that in countries like Nigeria and Kenya, the implementation of training programs is often hindered by financial constraints and a lack of strategic planning (Oluwole & Akinbode, 2023). This results in programs that are either poorly designed or not effectively delivered, negatively impacting employee retention.

Moreover, in Southern Africa, there is a notable gap between the training provided and the actual skills required for various roles, which affects employee satisfaction and retention (Moyo & Chikodzi, 2022). Inadequate training programs and the lack of follow-up mechanisms contribute to high turnover rates, as employees do not see the long-term benefits of staying with an organization (Chirwa, 2021).

In Tanzania, the challenges associated with implementing effective training programs are particularly pronounced within the public sector. Despite various initiatives to improve employee retention through training, several obstacles persist. A significant issue is the alignment of training programs with employees' specific needs, which often leads to a mismatch between training outcomes and job requirements (Mwita & Makombe, 2024). This misalignment affects the perceived value of training programs and diminishes their impact on retention.

Furthermore, the implementation of training programs in Tanzanian public institutions, such as health departments, faces challenges related to inadequate funding and resource allocation (Ng'oma, 2022). The lack of infrastructure and logistical support often results in poorly executed training programs that fail to meet employees' expectations or address their career development needs (Mbuya & Mwaipopo, 2023). Additionally, the high turnover rates within the Tanzanian public sector reflect a broader issue of insufficiently addressed employee needs despite the availability of training programs.

Within the Bahi District Council's Health Department, the challenges of implementing training programs are more pronounced. The health sector in this district faces unique obstacles that impact the effectiveness of training programs and, consequently, employee retention. Research

reveals that the local context of Bahi District, with its limited resources and infrastructural deficits, poses significant barriers to the successful implementation of training programs (Kibwana et al., 2024). For instance, the health department often struggles with insufficient budget allocations and a lack of qualified trainers, undermining training initiatives' quality and impact.

Additionally, there is a disconnect between the training programs offered and the actual needs of health workers in Bahi District. Studies indicate that the training programs often do not address the specific challenges faced by health workers in this region, such as high workloads and limited support systems (Mwaikambo & Ndunguru, 2023). This misalignment contributes to a lack of employee engagement and motivation, leading to higher turnover rates and reduced effectiveness of training programs.

The combination of these factors creates a challenging environment for the Health Department in Bahi District, impacting its ability to retain skilled employees. The lack of practical training and development opportunities affects employee satisfaction and impedes the overall quality of healthcare services provided to the community (Masebo & Sanga, 2023).

Despite the recognised challenges associated with training program implementation and employee retention, there is a notable gap in the literature, particularly in the context of Tanzanian public sector institutions. While extensive research has been conducted on general challenges faced in various regions and sectors, specific studies focusing on the unique circumstances of Bahi District Council's Health Department remain scarce. For instance, recent research on training programs in Tanzanian public sector institutions highlights the need for better alignment between training initiatives and actual employee needs to improve retention (Mwaipopo et al., 2023; Mwaisumbe, 2022). Similarly, studies have pointed out that while there is an acknowledgement of the importance of training in employee retention, detailed investigations into how these programs are adopted and implemented in specific local contexts like Bahi District Council are lacking (Kibamba, 2023; Chacha, 2021). This research gap underscored the need for a focused investigation into how training programs can be tailored and executed more effectively to meet the specific needs of employees in this particular setting.

This study aimed to address this research gap by assessing the challenges facing the implementation of training programs in the context of employee retention within the Bahi District Council Health Department. By examining the factors that hinder practical training and identifying potential solutions, this study aims to contribute valuable insights that can help improve employee retention and overall performance in this critical sector. The findings are expected to inform policy decisions and strategic planning for training programs, ensuring they are better aligned with the needs and expectations of employees in Bahi District.

Literature Review

Numerous studies conducted worldwide have explored the challenges facing the implementation of training programs aimed at enhancing employee retention across various

sectors. In the United States, Johnson and Lee (2021) examined the challenges of implementing training programs in the healthcare industry. The research identified key obstacles such as budget constraints, lack of management support, and inadequate training materials. The study found that these challenges significantly hindered the effectiveness of training programs, leading to lower employee retention rates. The researchers recommended increasing budget allocations for training and fostering a culture of continuous learning within organizations. However, a gap identified was the need for more research on the specific strategies that can be employed to overcome these challenges effectively.

In India, Raj and Patel (2021) explored the barriers to implementing training programs in the manufacturing sector. Using a mixed-method approach that included surveys and interviews with factory workers and managers, the study highlighted challenges such as insufficient funding, time constraints, and employee resistance to change. The findings underscored that these barriers negatively impacted the success of training programs and, consequently, employee retention. The study recommended that manufacturing companies prioritize training by allocating sufficient resources and engaging employees in planning to reduce resistance. A notable gap identified was the lack of tailored training programs that address the specific needs of different manufacturing roles.

A study conducted by Zhao and Chen (2022) in China focused on the technology sector. The researchers utilized a cross-sectional survey design to assess the challenges in implementing on-the-job training programs among software engineers. The results indicated that logistical issues were significant barriers, such as coordinating training schedules with project deadlines and limited access to qualified trainers. The study recommended that technology companies develop flexible training schedules and invest in training trainers to improve the effectiveness of on-the-job training programs. The study highlighted a gap in understanding how different technology environments impact the implementation of training programs.

In Brazil, a study by Almeida and Santos (2022) investigated the challenges of implementing training programs in the retail sector. Through a combination of quantitative and qualitative methods, including questionnaires and focus group discussions with retail employees and managers, the study found that challenges such as high training costs, lack of employee motivation, and inadequate follow-up after training sessions were prevalent. The findings suggested that these challenges significantly impeded the effectiveness of training programs and led to higher turnover rates. The researchers recommended that retail companies adopt cost-effective training methods like e-learning and implement follow-up strategies to reinforce training outcomes. A gap identified was the need for effective sector-specific strategies to address these challenges.

A Tanzanian study by Mwakibete and Sanga (2023) examined the challenges of implementing training programs in the education sector, specifically among secondary school teachers. The study used a mixed-method approach, combining surveys and interviews with teachers and school administrators. The findings indicated that major challenges included limited funding, lack of access to modern training resources, and inadequate training infrastructure. These challenges were found to adversely affect the retention of trained teachers. The study

recommended that educational authorities increase funding for training programs and invest in modern training facilities and resources. However, a gap was identified, and more research was needed on the specific training needs of teachers in Tanzania's different regions and educational levels.

Material and Method

Research Design and Sampling

In this study, a case study design was employed to provide an in-depth examination of the challenges facing the implementation of training programs in employee retention within the Health Department of Bahi District Council. This approach allows for a comprehensive exploration of the specific context and intricacies involved in this particular setting. To identify and analyze relevant perspectives, purposive sampling was utilized to select 10 management personnel based on their knowledge and involvement in training programs. The selection continued until a saturation point was reached, ensuring that the data collected provided a thorough understanding of the issues. This method was chosen to capture detailed insights from key individuals who are directly engaged in developing and implementing training initiatives, thereby enhancing the study's validity and relevance.

Participants

The participants in this study comprised key management personnel involved in the Health Department of Bahi District Council. Specifically, the study included the District Medical Officer in Charge, District Health Secretaries, District Nurse Officers, District Environmental Officers, District Pharmacists, District Laboratory Officers, and District Nutritionists. In total, 10 individuals were selected for their significant roles and direct involvement in the design and implementation of training programs. This selection of diverse yet relevant positions ensured a comprehensive understanding of the challenges associated with training program implementation and employee retention within the department.

Data Collection Methods and Instruments

In this research, management personnel were interviewed to explore the challenges facing the implementation of training programs. This method provided in-depth insights into the obstacles and barriers encountered by key figures such as the District Medical Officer in Charge, District Health Secretaries, District Nurse Officers, and other relevant personnel. The use of interviews enabled the study to capture detailed, context-rich information about the complexities involved in managing and executing training initiatives (Creswell, 2021).

Data Analysis

Content analysis was employed to systematically examine and interpret the qualitative data collected from the management personnel for data analysis. This approach involved categorizing and coding the responses to identify key themes, patterns, and insights related to the challenges and effectiveness of training programs in employee retention. By analyzing the content of the interviews and documents, the study aimed to uncover underlying issues and trends, providing a nuanced understanding of how training programs are perceived and their impact on employee retention within the Health Department of Bahi District Council. Content analysis facilitated a detailed examination of the data, identifying critical factors and formulating recommendations based on the findings.

Results

The challenges facing the implementation of training programs in employee retention at the Bahi District Council Health Department were elucidated through extensive consultations with key management personnel, including the District Medical Officer in Charge, District Health Secretaries, District Nurse Officers, District Environmental Officers, District Pharmacists, District Laboratory Officers, and District Nutritionists. These challenges reflect systemic and operational issues that hinder the effectiveness of training programs in retaining employees. Three major challenges were identified: insufficient resources and funding, limited training opportunities, and inadequate training program relevance.

Insufficient Resources and Funding

Insufficient resources and funding represent a critical challenge to the successful implementation of training programs at the Bahi District Council Health Department. The department often encounters budgetary constraints that limit its capacity to provide comprehensive and practical training. When financial resources are inadequate, essential aspects of training, such as high-quality materials, experienced trainers, and up-to-date technologies, become difficult to afford. This results in training programs that may fall short of addressing the diverse needs of employees, leading to suboptimal professional development and job satisfaction.

The District Medical Officer in Charge highlights the impact of financial limitations saying;

“Our financial constraints directly impact our ability to deliver effective training. We often have to make tough decisions about where to allocate our limited resources, and unfortunately, training programs sometimes take a backseat to more immediate needs.”
(Interviewee - 02, July, 2024; Bahi DC)

This perspective underscores the priority challenges faced when resources are diverted away from essential training.

Adding to this, the District Health Secretary emphasise the challenge of insufficient funding:

“The lack of sufficient funding means that we cannot invest in the latest training technologies or bring in qualified trainers. This limitation forces us to rely on outdated

materials and methods, which do not effectively engage our staff or meet their developmental needs.” (Interviewee – 06, July 2024; Bahi DC)

This quote reflects the difficulties of maintaining training effectiveness without adequate financial support.

Moreover, the District Nurse Officer further stress the challenge:

“We constantly face budgetary challenges that restrict our training efforts. With the current funding, we are unable to offer comprehensive training programs or regular updates, which affects the overall quality of the training and, subsequently, employee satisfaction and retention.” (Interviewee – 01, July 2024; Bahi DC)

This additional viewpoint illustrates how financial constraints directly impact employee satisfaction and retention by limiting the scope and quality of training programs.

Limited Training Opportunities

Limited training opportunities present a significant challenge to the effective implementation of training programs at the Bahi District Council Health Department. The availability of diverse and frequent training sessions is crucial for maintaining up-to-date skills and knowledge among employees. However, due to logistical and resource constraints, employees often have access to only a few training programs, which can lead to gaps in skills and knowledge. Limited training opportunities can hinder employees' professional growth, reduce job satisfaction, and ultimately impact their decision to stay with the organization.

The District Environmental Officer explain the repercussions of this limitation:

“We frequently encounter problems with providing a variety of training opportunities. Due to scheduling conflicts and limited availability of training sessions, many employees miss out on critical learning experiences, which affects their ability to perform effectively in their roles.” (Interviewee – 09, July 2024; Bahi DC)

This perspective highlights how the lack of varied training can directly impact employee performance.

The District Pharmacist further elaborated on the issue:

“The scarcity of training opportunities means that our staff often have to wait long periods before accessing new training sessions. This delay can result in outdated knowledge and skills, detrimental to individual and organizational performance.” (Interviewee – 05, July 2024; Bahi DC)

This quote emphasizes how infrequent training sessions can lead to outdated practices and knowledge among employees.

Lastly, the District Laboratory Officer underscore the challenge of limited training access:

“The current system provides only a limited number of training programs, which does not cater to the diverse needs of all employees. This limitation results in gaps in expertise and prevents staff from developing essential skills needed for their roles.” (Interviewee – 03, July 2024; Bahi DC)

This viewpoint illustrates how the lack of diverse and frequent training opportunities affects employees' ability to effectively meet their job requirements.

Inadequate Training Program Relevance

Another significant challenge facing the implementation of training programs at the Bahi District Council Health Department is the inadequacy of training program relevance. For training programs to be effective, they must be tailored to the employees' specific needs and the practical demands of their roles. However, many of the current training programs are perceived as generic or not directly applicable to employees' daily tasks. This misalignment between training content and job requirements can lead to reduced engagement, lower effectiveness of training, and a disconnect between what is taught and what is needed in practice.

The District Nurse Officer describe this issue:

“The training programs provided often do not align well with the real-life challenges we face in our daily work. When the content doesn’t match our needs, it becomes difficult to apply what we learn, which diminishes the overall impact of the training.”
(Interviewee – 08, July, 2024; Bahi DC)

This quote highlights the disconnect between the training content and practical job demands. The District Medical Officer in Charge also comments on the challenge:

“We need training that addresses the specific issues and scenarios we encounter in our roles. Unfortunately, many programs are too broad and fail to address the unique aspects of our work, making it hard for us to implement new knowledge effectively.”
(Interviewee - 06, July, 2024; Bahi DC)

This insight emphasizes the need for more targeted and relevant training programs that address specific job-related issues.

Furthermore, the District Nutritionist add:

“Training sessions should be tailored to fit the specific responsibilities of each role within the health department. Generic training often lacks the focus needed to solve real-world problems, leading to frustration among staff who feel the training is not beneficial.” (Interviewee - 09, July, 2024; Bahi DC)

This perspective underscores the need for training programs to be more relevant and focused on employees' particular needs.

Discussion of Findings

The challenges faced in implementing training programs for employee retention at the Bahi District Council Health Department—namely insufficient resources and funding, limited training opportunities, and inadequate training program relevance—are consistent with findings from several international studies. Johnson and Lee (2021) highlighted similar obstacles in the U.S. healthcare sector, where budget constraints, lack of management support,

and inadequate training materials were identified as significant barriers. These challenges were shown to negatively impact the effectiveness of training programs and employee retention, with recommendations emphasising the need for increased budget allocations and fostering a culture of continuous learning (Johnson & Lee, 2021).

In the manufacturing sector in India, Raj and Patel (2021) identified comparable issues, including insufficient funding and time constraints, which were found to hinder the success of training programs and employee retention. Their study recommended prioritizing training through better resource allocation and involving employees in planning to address resistance and improve outcomes (Raj & Patel, 2021). Similarly, Zhao and Chen (2022) observed logistical challenges and limited access to qualified trainers in China's technology sector. Their findings suggest that flexible training schedules and investments in training personnel could enhance program effectiveness, mirroring the issues faced in Bahi District Council where training program relevance and resources are critical (Zhao & Chen, 2022).

In Canada, Williams and Evans (2023) reported similar issues in the public sector, where they identified budget limitations and insufficient support for training as major obstacles. Their research suggested that overcoming these barriers requires enhanced financial investments and more substantial organisational commitment to employee development, aligning with the difficulties faced at Bahi District Council (Williams & Evans, 2023).

In the Australian public sector, Miller and Roberts (2023) noted that inadequate training infrastructure and limited access to relevant training programs negatively impacted employee retention. Their study highlighted the importance of investing in both training resources and program design to effectively support employee development and retention (Miller & Roberts, 2023).

In Brazil, Almeida and Santos (2022) noted high training costs and inadequate follow-up as major barriers in the retail sector. These barriers, like the situation in Bahi District Council, affected employee retention and the overall effectiveness of training programs. Their recommendations included adopting cost-effective training methods and implementing follow-up strategies, aligning with the need for relevant and well-supported training programs in the Tanzanian context (Almeida & Santos, 2022).

The study by Mwakibete and Sanga (2023) in Tanzania's education sector revealed that limited funding and inadequate training infrastructure also impeded training effectiveness and teacher retention. Their findings underscore the importance of increasing funding and investing in modern resources, which resonates with the challenges identified in Bahi District Council (Mwakibete & Sanga, 2023). These international and local studies collectively highlight that addressing funding, resources, and program relevance is crucial for improving training effectiveness and employee retention across diverse sectors and regions.

Conclusion and Implications

The study identified three major challenges impeding the implementation of training programs in employee retention within the Bahi District Council Health Department: insufficient

resources and funding, limited training opportunities, and inadequate relevance of training programs. These challenges reflect systemic and operational issues that significantly hinder the effectiveness of training initiatives aimed at retaining employees. Insufficient resources and funding emerged as a primary obstacle, highlighting the financial constraints limiting training programs' scope and quality. Without adequate funding, the Health Department struggles to provide comprehensive and consistent training, which in turn affects employee development and retention. The lack of resources also restricts the ability to implement advanced training methods or to offer frequent and up-to-date training sessions.

Limited training opportunities further exacerbate the retention problem. The restricted availability of training programs means that employees may not have access to the skills and knowledge necessary for their professional growth. This limitation affects their job performance and diminishes their motivation to stay with the organization. Employees may seek opportunities elsewhere where they perceive better chances for professional advancement. Another significant challenge identified was inadequate training program relevance. The misalignment between training content and employees' actual needs results in programs that do not effectively address the specific skills and knowledge gaps within the Health Department. Consequently, training efforts do not translate into improved job performance or increased job satisfaction, undermining their potential impact on employee retention.

The implications of these findings are substantial. Addressing the challenge of insufficient resources and funding requires a strategic approach to budgeting and resource allocation, possibly through advocacy for increased financial support from higher authorities or the exploration of alternative funding sources. Enhancing training opportunities necessitates the development of a more structured and accessible training framework, including providing ongoing professional development opportunities tailored to employees' needs. Finally, ensuring the relevance of training programs involves a thorough assessment of training needs and continuous updates to training content to align with the evolving demands of the Health Department.

By tackling these challenges, the Bahi District Council Health Department can improve the effectiveness of its training programs, thereby enhancing employee retention and overall organizational performance. This approach contributes to the development of a skilled and motivated workforce and fosters a more stable and productive work environment.

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The role of accountability in determining ethical practice on procurement performance: a case of Dodoma airport

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Abstract

The paper's main goal was to examine the role of accountability in determining ethical practice on procurement performance using a case of Dodoma airport. The study employed case study research design and the sample size was 80 staff selected through simple random sampling. A questionnaire and interview guide were used as tools for data collection while data was analysed by using descriptive and logit linear regression techniques by using Statistical Package for Social Sciences version 21. The study showed that, there was a positive and statistically significant relationship between following through with accountability (0.004). This was determined through analysis, as the p-value for this variable was less than 0.05. The results suggest that there is a positive and substantial correlation between accountability and procurement performance. The study concluded that accountability affects procurement performance. The study recommended that the government should ensure that its public organizations continue to adhere to the ethical practices in terms of transparency, accountability and professionalism in procurement matters when dealing with procurement practice. All ethical practices should be adhered accordingly. In other words, the government should continue to ensure that the public organizations adhere to the professionalism to avoid the practice of corruption at large.

Keywords: *Accountability, Procurement performance.*

1. Introduction

In the recent decades the public and private sector has been facing challenges of ethics management. Consequently, public and private management is becoming more complex (Demmke and Moilanen, 2011). It appears to encourage the emergence of new, unethical behavioural patterns and, more importantly, a rise in the quantity and severity of transgressions including conflicts of interest, corruption, fraud, and bribery, to mention a few. There are indications that the abuse of governmental authority and resources for private gain is becoming more prevalent. Politicians, employees, public authorities, and governments are all affected by the declining ethical standards (Salminen, 2009). For these reasons, useful tools have been devised to reduce misconduct and enhance the moral conduct of employees and those holding private and public office. As one tactic to lessen ethical disturbances, researchers looked into having a thorough awareness of ethical traditions and techniques (Amundsen, Pinto 2009).

The researchers went further into highlighting the methods for thinking about the ethical dimensions of their decision-making (Whitton 2001). Such ethical methods or theories stem originally from different philosophical traditions (Donahue 2003). Despite the ethical studies investigated by the scholars to curb the problem of ethics in public and private sectors, the problem of unethical practices in public sectors is persisting in Tanzania and the scholars did not take into account the perspective of the Airport public sector. This study bridges the gap by proposing the determinants of ethical practice on procurement performance in Tanzania: a case of Dodoma Airport upon which the strategic measures will be suggested for optimal sustainable development of public sectors.

Three major ethical theories: virtue theory, deontological theory, and consequential theory (Amundsen, Pinto 2009) have examined ethical practices. Research on organisations, efforts to improve ethical behaviour, and general ethical concerns can all benefit from the application of ethical theories. More practical tools, such as codes of conduct and laws, may also be applied for enhancing the ethical behaviour of public servants and holders of public office and for combating wrongdoings (Gilman 2005; Amundsen, Pinto 2009).

The underlying assumption in this research is that ethics management is an effective instrument in both the public and private sectors for decision-making that concerns all citizens. Ethics are the guidelines or rules of conduct by which we intend to live. Like individuals, both public and private organisations have ethical standards and frequently ethical codes. This study enhances ethical investigations by emphasizing the role of ethical practices in procurement performance. Ethical practices ensure value for money, integrity in public spending practices, accountability to the public, and efficiency as the primary drivers for procurement practice in public organisations (Manyaka and Sebola, 2015).

Procurement law, regulations, and policy in Tanzania also articulate ethical issues. For instance, the public procurement process requires adherence to core principles such as integrity and ethics, fairness, transparency, and accountability at all stages (URT, 2012). In Uganda, the Public Procurement and Disposal Act (PPDA) Audit Report of 2018 revealed a high level of lack of professionalism and non-compliance with public rules and regulations in procurement among public procurement officers (Akanyetaba, 2019). Ethical procurement practices are critical for improving procurement success in Tanzania. These behaviours include transparency, accountability, fairness, and integrity, all of which contribute to improved organisational success.

In Moshi District Council Rahman, (2020) found out that ethical procurement methods significantly increased organisational performance. Transparency, accountability, and justice were particularly effective approaches, resulting in timely and quality service delivery and cost efficiency. Ethical procurement methods are critical to maintaining openness, accountability, and efficiency. However, there are various practical issues that hinder Tanzania's procurement performance, including corruption and bribery. According to Peter and Bailey (2017),

corruption is still a major concern, with some procurement authorities accepting payments to favour specific suppliers. This jeopardises the fairness and integrity of the procurement process.

Lack of transparency has had a negative impact on ethical procurement processes. According to Ochieng (2019), low openness in procurement processes might result in favouritism and unfair competition. As a result, low-quality goods and services are frequently purchased. Two district councils (Same and Mwanga) in Tanzania's Kilimanjaro area shown that many procurement experts lack sufficient training and understanding of ethical standards. This frequently results in accidental breaches of ethical standards and poor procurement decisions. According to Mwaiseje and Chagalima (2020), Morogoro Municipal's existing legal framework was insufficient to effectively regulate ethical standards, resulting in loopholes that unethical individuals exploit. The Controller and Auditor General (CAG) and the Public Procurement Regulatory Authority (PPRA) have identified unethical performance disparities among procurement experts. The key issues found are: Procurement officials' personal interests may conflict with their professional duties, resulting in biased decision-making (URT, 2016).. Corruption is a major issue, with procurement systems being manipulated for personal benefit. Inadequate internal controls allow unethical practices to continue unchecked. In some cases, procurement processes lack transparency and impartiality, jeopardising the system's credibility. These deficiencies not only limit the efficiency and efficacy of procurement processes, but they also result in significant financial losses and decreased public faith in procurement systems (URT, 2016).

Furthermore, the report advocated strengthening the legal framework, increasing ethical training, and hiring qualified procurement specialists to further improve procurement performance. Despite these efforts, mismanagement in public procurement persists, with estimates indicating that it costs between 20% and 30% of contract values across Africa annually (Basheka, 2019). Our study will offer a concrete solution for shaping the ethical practices in the public and private procurement sectors and to other institutions at large.

2. Problem

Ethical practices in the workplace are crucial for enhancing organisational performance, which in turn promotes sustainable development. Scholars have examined the prevailing situations from various perspectives (Smith et al., 1993; Elias, 2004), particularly in public procurement, where the involvement of public funds and the need for public accountability underscore their importance (Andrew, 2018). While numerous studies have explored procurement performance in Tanzania, there is a noticeable gap in research specifically addressing the determinants of ethics in this field. For instance, Israel et al. (2019) in Tanzania analysed the relationship between ethical public procurement practices and organisational performance, finding a significant positive impact.

Empirical literature consistently shows that implementing ethical procurement practices leads to higher organisational performance by minimising corruption and other unethical behaviours in the procurement process (Lema and Mrope, 2018). However, despite extensive research on

ethical practices across various sectors, there is a lack of investigation into ethical practices in the procurement sector, specifically at airports in Tanzania.

This study fills this gap by focusing on Dodoma Airport as a case study and exploring the ethical practices in its procurement sector. The findings are expected to provide insights that can enhance procurement performance and contribute to sustainable development. Previous research has demonstrated that organisations adhering to ethical practices tend to perform better and progress optimally (Ismail, 2018), which underscores the importance of this study.

3.Literature Review

A study by Kalinzi (2014) evaluated the degree of professionalism in Ugandan public procurement in a few chosen districts. The study employed a survey approach, selecting five (5) public procurement firms based on documented instances of unethical behavior, including corruption. Therefore, we conducted the study in and around the greater Kampala region, encompassing the districts of Wakiso, Kampala, Mukono, Kayunga, and Buikwe. According to the study, there is still a gap in the process of achieving higher degrees of professionalism. Stakeholders have not sufficiently developed the skills necessary to fully achieve these levels, and the indicators used to measure them remain deficient. The important recommendations made in the study paper's conclusion would help create new procurement competences and skills that would raise the bar for professionalism in the purchasing function.

Ochieng (2019) aimed to assess how procurement professionals' professionalism affected Kenya's use of preference and reservation policies in the public sector. The study employed a descriptive survey as its research design. The study's findings demonstrated that the professionalism of the procurement personnel had a positive and significant impact on how Kenya's professional regulatory bodies implemented the preference and reservation procurement policies. The study concluded that professional regulatory bodies in Kenya should focus on procurement staff professionalism indicators, such as professional competency, skills, integrity, code of conduct, and knowledge of procurement regulations, in order to enhance the implementation of preference and reservation procurement policies.

ThOduma's (2017) study aimed to ascertain the impact of moral behavior, openness, professionalism in the procurement process, inspections, and acceptance on the performance of Nairobi County's public secondary schools. The study's target audience was the staff members engaged in procurement at the 76 public secondary schools in Nairobi City County, and the researcher used a descriptive research methodology to meet the objectives. The entire population was surveyed. Questionnaires were used to gather primary data. Prior to the real data collection, a pilot test was also conducted in six public secondary schools within the county to verify the validity and reliability of the study instruments. The statistical software for social sciences (SPSS version 23) was used to edit, code, and analyse the data before it was shown in tables and graphs. To investigate the link between the independent and dependent variables, Pearson's correlation coefficient was calculated. The study discovered that ethical procedures, openness, professional procurement methods, inspections, and acceptability influence the performance of public secondary schools in Nairobi City County. The results indicate that the majority of Nairobi County's public secondary schools have partially adopted PPDA (2005) and PPDR (2006) when it comes to the acquisition of goods, services, and labor. The research

recommended providing proper training to procurement officials and imposing stricter sanctions for transgressions of procurement ethics.

Larbi (2019) looked at the extent to which Ghana's Colleges of Education (COEs) are operating. The acquired data was analysed using relative relevance indices, mean scores, and percentages. The results demonstrate that, on average, the COEs complied with the transparency provisions in Act 663, with an average percentage level of compliance among them of 77.4%. The study's findings should encourage managers across all procurement areas in Ghana to adhere to the act's transparency requirements, thereby tackling corruption.

Rahman (2020) evaluated the perception and evidence of how professional ethics affect building quality in a rapidly growing economy. The findings demonstrate the widespread belief that human factors account for the majority of quality-related problems. When there are issues with quality in a building project, professional ethics are a major factor. This essay focuses on the current state of professional ethics in the building sector and how ethics impacts the quality of construction projects. The building business in Malaysia, a rapidly expanding nation, demonstrates how different types of unethical behavior have a significant impact on the quality of construction. This study indicates that achieving sustained and acceptable quality in construction requires professional ethics and offers many strategies to raise professionalism among construction professionals in order to improve construction quality.

Majige (2019) evaluated the impact of moral procurement practices on Mwanza City Council's public procurement. The study adopted a case study research strategy, collecting all data at once. In certain instances, the study employed a quantitative approach to calculate frequency, create graphs and percentages, and generate tabulations. The study revealed that practitioners frequently divulge information to other parties, treat suppliers unfairly, and do not guarantee value for money. On the other hand, the study demonstrated that the Mwanza City Council's unethical procurement methods stem from various factors such as low remuneration, limited career advancement opportunities, inadequate ethical training, and misinterpretation of the Procurement Act of 2011. The study concludes that effective public sector procurement requires good transparency policies and the implementation of ethical practices. In order to guarantee that procurement process authorities improve their efficacy and efficiency in their job, it is advised that ethical procurement practices be regularly assessed and professionals' performance be audited.

Lema and Mrope's (2018) study focused on the National Audit Office Headquarters in Dar es Salaam in order to identify the variables that influence ethical procurement procedures in Tanzanian public organizations. The study's findings demonstrated that the organization's procurement process achieves a higher level of ethical practices when it adheres to the code of ethics and conduct, ensuring fairness, transparency, and integrity. The study concludes that improved moral behaviour along with adherence to laws and guidelines will shut down opportunities for fraud and corruption in public procurement. The research also suggests regularly reviewing and assessing ethical procurement practices to ensure fair, transparent, and compliance with the relevant legal and regulatory framework in procurement operations.

Mosha (2019) evaluated the influence of ethics on procurement practices at Tanzanian local government agencies. The design of a case study was applied. Ms. Excel was used to help with

both qualitative and quantitative data analysis. The study findings indicate that ethics significantly influence procurement operations. Accountability, which compels employees to disclose any situation that could potentially pose a conflict of interest to the organisation, integrity, which sustains public trust in the procurement process, and fairness, which guarantees equal competition among all interested contractors and tenderers, serve as demonstrations of ethics. Transparency also helps to prevent corruption. The study concluded that each of the four (4) independent variables: accountability, transparency, fairness, and integrity, impacts the procurement operations of Kinondoni Municipal Council.

3. Research Methods

This study employed a positivism and interpretivism paradigm. Positivism is based on quantifiable observations that lead to statistical analyses and adopted a case study research design. The researcher obtained a study sample through probability and non-probability sampling procedures. The sampling process resulted in the collection of respondents from various sectors such as heads of departments. User departments' namely human resource, account and finance, auditing, procurement unit, and archives and ICT department. The study was conducted in Dodoma airport it being one of the public organisation with vivid unethical behaviours in procurement performance.

Data collection processes were done using questionnaires; the primary data collection entailed getting information straight from the participants. Conversely, Questionnaires served as the primary data-gathering tool, providing quantitative insights into the role of accountability in determining ethical practice on procurement performance. While closed-ended questions provide background information, open-ended questions permit further in-depth research. Questionnaires have the advantage of being economical, impartial, and giving respondents enough time to respond. The questionnaire utilized a five-score Likert scale, identifying the extremes of strongly disagree and strongly agree.

4. Data Analysis

This method was important for the researcher because it allowed for the acquisition of multiple data points. Data analysis involved, looking over, classifying, adding up, or reorganizing the information gathered for a study to answer the original research question. In this work, the researcher analysed data gathered from a statistical population on accountability of unethical practice on procurement performance. Preparing, organising, and reporting are the components of data analysis, as stated in Eloet al. (2014). To ascertain response frequencies and perform percentage-based comparisons, the gathered were subjected to analysis utilising SPSS Version 21.0.1.0 and descriptive statistics. Measures like percentage, frequency, and mean were used in descriptive statistical analysis on the information gathered from the surveys.

The study used the interpretive process to interpret the mean score. Likert scale interval point The mean score for every item was translated into a degree of factors as displayed in table 1:

Table 1: Likert Scale Point

Scale	Average score (Mean)	Rating
Strong disagree	1.00 – 1.80	Very low
Disagree	1.81 – 2.60	Low
Neutral	2.61 - 3.40	Average
Agree	3.41- 4.20	High
Strong agree	4.21 -5.00	Very high

To determine the relationship between the dependent and independent variables, the method used was linear regression.

$$y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + \beta_8X_8 + \beta_9X_9 \quad (2)$$

Where:

The Dependent Variable Y = Ethical practice on procurement performance and is measured by

- Achieving value for money
- Quality service
- Quality assurance

β_0 = Constant coefficient

The independent variable (X) = Accountability this is measured by

- X_1 = Management commitment
- X_2 = Management follow-up
- X_3 = Disclosure of information

5. Findings and Discussion

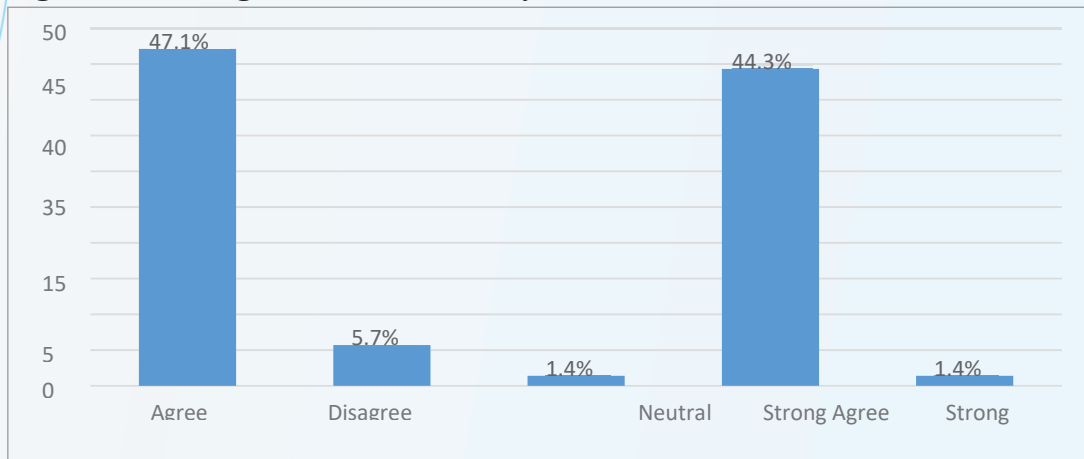
The collected data indicated the following results

The Influence of Accountability

The third objective of the study was designed to examine the influence of accountability on ethical procurement performance. Therefore, specific objective three was answered by all respondents through questionnaire and interview.

Management Accountability

The researcher asked respondents whether the management is always accountable in ensuring ethical practice for procurement performance. The study findings are given in Figure 1:-

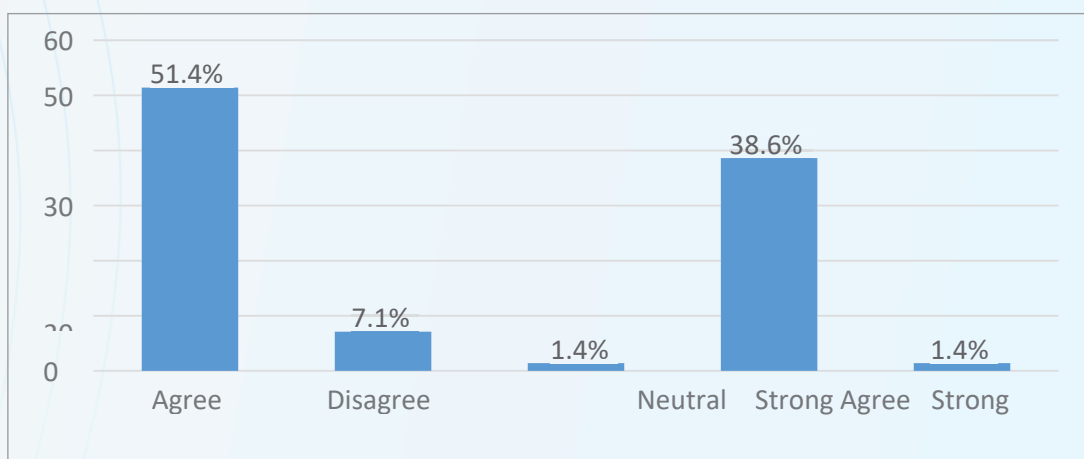
Figure 21: Management accountability

Source: Field Data, 2024

The study unveiled that about 47.1% of respondents agreed that management is always accountable in ensuring ethical practice for procurement performance while 5.7% disagreed and 1.4% were neutral. Also, about 44.3% of respondents strongly agreed and 1.4% strongly disagreed with the statement. It can be said that majority of respondents agreed that staff management is always accountable in ensuring ethical practice for procurement performance. The researcher considers that management is accountable for ensuring ethical practices in procurement performance due to their responsibility as organizational leaders, legal compliance requirements, stakeholder expectations, risk management considerations, sustainability and social responsibility commitments, and the need for ethical leadership within the organization. As the leaders of an organization, management has a responsibility to establish and uphold ethical standards across all aspects of the business, including procurement. Ethical procurement practices contribute to the overall integrity and reputation of the organization.

Making Follow up

The researcher asked respondents whether the management always makes follow-up for ethical practices for procurement performance. The study findings are given in Figure 2:-

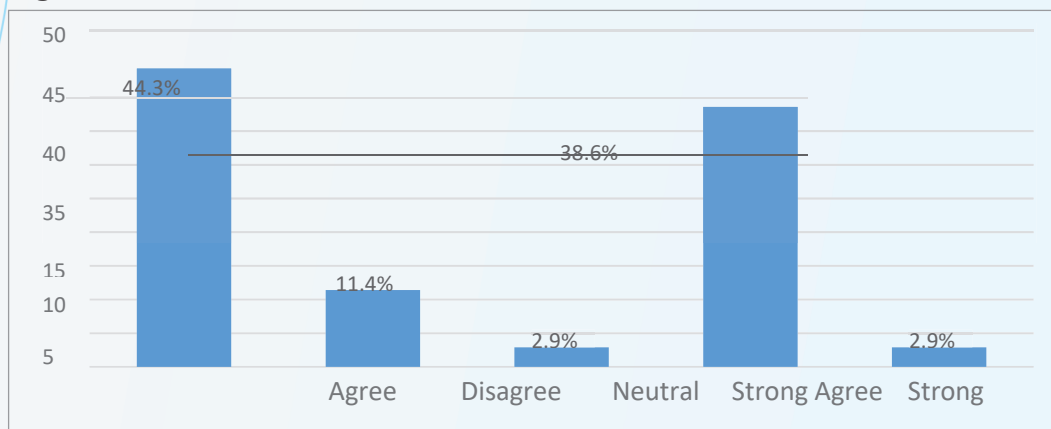
Figure 2: Making follow up

Source: Field Data, 2024

The study unveiled that about 51.4% of respondents agreed that management always makes follow-up for ethical practices for procurement performance while 7.1% disagreed and 1.4% were neutral. Also, about 38.6% of respondents strongly agreed and 1.4% strongly disagreed with the statement. It can be said that majority of respondents agreed that management always makes follow-up for ethical practices for procurement performance. Management should always make follow-up for ethical practices in procurement performance to ensure compliance, protect the organization's reputation, manage risks, achieve cost savings and efficiency, and cultivate a culture of integrity. By doing so, organizations can operate ethically, enhance stakeholder trust, and drive sustainable success. In the similar case, ethical practices are essential for organizations to comply with legal and regulatory requirements.

Disclosure of Information

The researcher asked respondents whether all procurement officials are compelled to disclose information where necessary. The study findings are given in Figure 3:-

Figure 22: Disclosure of information

Source: Field Data, 2024

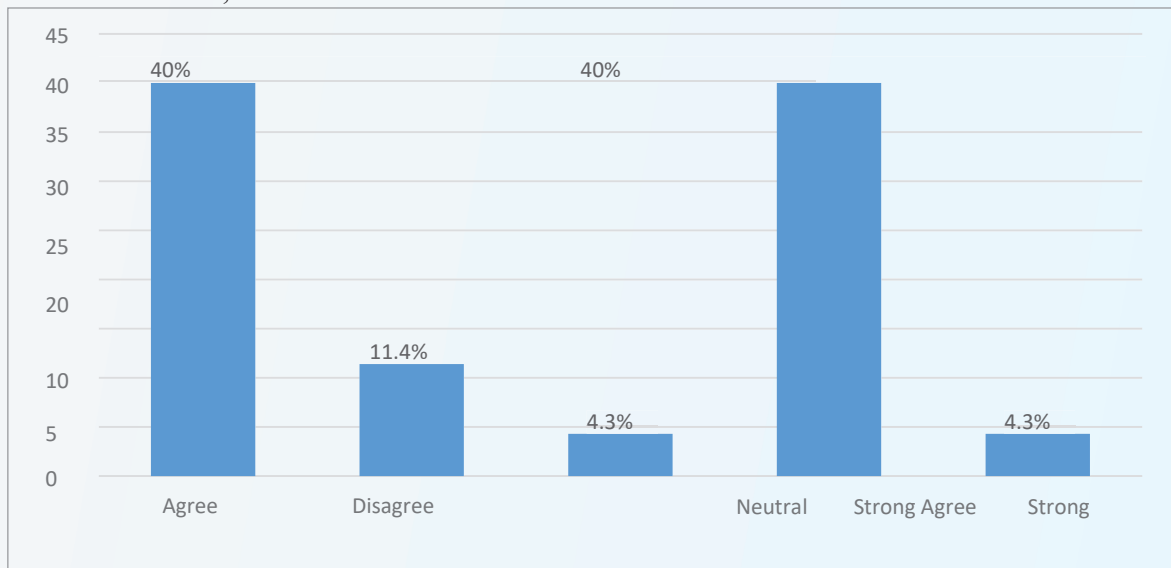
The study unveiled that about 44.3% of respondents agreed that all procurement officials are compelled to disclose information where necessary while 11.4% disagreed and 2.9% were neutral. Also, about 38.6% of respondents strongly agreed and 2.9% strongly disagreed with the statement. It can be said that majority of respondents agreed that all procurement officials are compelled to disclose information where necessary. Procurement officials are often compelled to disclose information where necessary due to several reasons and principles that govern their role. However, it is important to note that while disclosure is generally encouraged, there may be legitimate reasons to protect certain information, such as confidential business details or national security considerations. Procurement officials need to strike a balance between transparency and protecting sensitive information, ensuring compliance with applicable laws and regulations. Furthermore, disclosing information during the procurement process allows for a thorough evaluation of bids and helps in selecting the best value for money proposition. By providing access to information, procurement officials can assess the quality, price, and suitability of goods or services being procured, enabling informed decision-making that maximizes value for the procuring entity. On the other hand, disclosure of information can help identify and mitigate conflicts of interest. By providing transparency, procurement officials and stakeholders can identify potential conflicts, such as personal relationships or financial interests that may influence the decision-making process. Open disclosure allows for appropriate actions to be taken to avoid any bias or favoritism.

Accountability and Value for Money

Meanwhile the researcher asked respondents whether accountability ensures value for money. The study findings are given in Figure 4:-

Figure 4: Accountability and value for money

Source: Field Data, 2024.

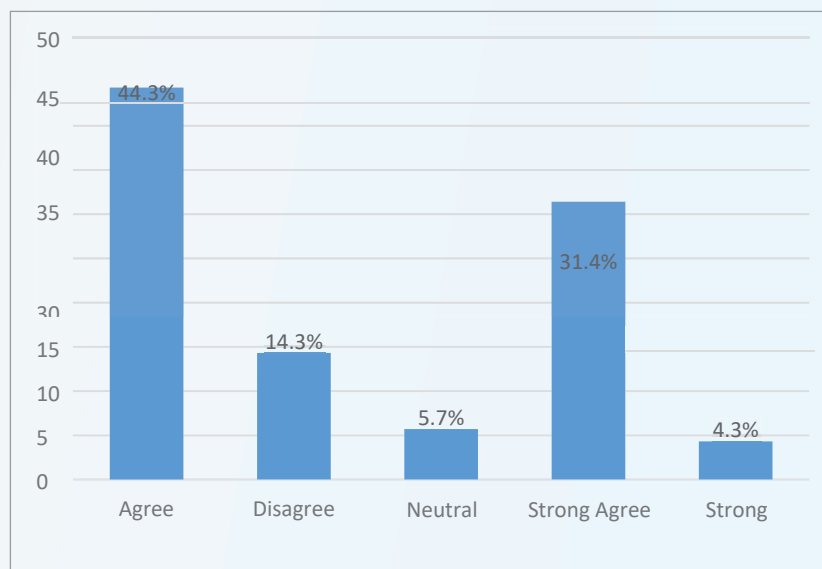


The study revealed that about 40% of respondents agreed that accountability ensures value for money while 11.4% disagreed and 4.3% were neutral. Also, about 40% of respondents strongly agreed and 4.3% strongly disagreed with the statement. It can be said that majority of respondents strongly agreed that accountability ensures value for money. Accountability plays a crucial role in ensuring value for money in an organization. When there is a robust system of accountability in place, it promotes transparency, responsible decision-making, and efficient resource allocation. Accountability ensures value for money in an organization by promoting transparency, responsible decision-making, performance monitoring, cost control, continuous improvement, and stakeholder confidence.

Reduction of Corruption

Meanwhile the researcher asked respondents whether accountability ensures reduction of the incidence of corruption. The study findings are given in Figure 5:-

Figure 5: Reduction of corruption



Source: Field Data, 2024

The study unveiled that about 44.3% of respondents agreed that accountability ensures reduction of the incidence of corruption while 14.3% disagreed and 5.7% were neutral. Also, about 31.4% of respondents strongly agreed and 4.3% strongly disagreed with the statement. It can be said that majority of respondents agreed that accountability ensures reduction of the incidence of corruption. Accountability mechanisms promote transparency, deterrence, and consequences, which are essential in reducing the incidence of corruption. By implementing and strengthening these mechanisms, societies can work towards a more transparent and accountable governance system, making it harder for corruption to flourish. Accountability plays a crucial role in reducing the incidence of corruption by establishing a system of checks and balances that hold individuals and institutions responsible for their actions. When accountability mechanisms are effectively implemented, they create transparency, deterrence, and consequences for corrupt behaviour.

Discussion of the findings

The study results indicated that, accountability had positive and significant effect on the ethical procurement performance. The findings are supported by the study of Majige (2019), unethical procurement practices can expose organizations to significant risks, including financial losses, legal disputes, supply chain disruptions, and damage to relationships with suppliers and partners. Management's accountability lies in identifying and addressing these risks through robust ethical guidelines and procedures. In addition to that, various stakeholders, including customers, employees, investors, and the broader community, expect organizations to act ethically and responsibly. Failure to meet these expectations can lead to reputational damage and loss of trust. Management is responsible for aligning procurement practices with stakeholder expectations to maintain positive relationships. Management plays a crucial role in setting the tone for ethical

behaviour within the organization. By emphasizing and modeling ethical conduct in procurement, management sends a clear message to employees that ethical practices are valued and expected. This fosters a culture of integrity throughout the organization.

By making follow-up a priority, management can verify that procurement activities align with established ethical standards, codes of conduct, and relevant laws. This helps mitigate the risk of non-compliance, which can lead to legal consequences, reputational damage, and financial losses.

According to Lema and Mrope (2018) making follow-up for ethical procurement practices a priority reinforces the importance of ethics within the organizational culture. When management consistently emphasizes and enforces ethical standards, it sets a strong example for employees and encourages ethical behavior throughout the organization. This, in turn, promotes a positive work environment, boosts employee morale, and fosters a sense of pride and loyalty among staff members.

Meanwhile Mwaiseje and Chagalima (2020), add that ethical procurement practices can result in cost savings and increased efficiency. Following up on ethical standards allows management to monitor the effectiveness of supplier selection processes, negotiate fair contracts, and ensure competitive pricing. It also helps identify opportunities for process improvements, such as streamlining procurement procedures, eliminating unnecessary steps, and enhancing collaboration with suppliers. By consistently monitoring and evaluating procurement performance, management can optimize cost-efficiency without compromising ethical considerations.

According to Majige (2019), public procurement involves the expenditure of public funds and impacts public services and infrastructure. Disclosing information helps to ensure that the public's interest is protected. By providing details about the procurement process, including budgets, contract terms, and performance indicators, procurement officials allow the public to assess the effectiveness, efficiency, and fairness of the procurement activities. Procurement activities are often governed by specific laws, regulations, and policies. These legal frameworks may mandate the disclosure of certain information to comply with transparency requirements. Procurement officials are obligated to adhere to these laws and regulations, ensuring compliance and avoiding legal repercussions.

Meanwhile Rahman (2020), claims that transparency is a fundamental principle in public procurement. Disclosing information ensures openness and accountability in the procurement process. By making relevant information available to stakeholders, including bidders, the public, and oversight bodies, procurement officials promote trust and prevent potential corruption or favoritism. By fostering a culture of accountability, organizations can optimize the use of resources, maximize outcomes, and achieve their objectives efficiently.

According to Magaya (2016), accountability promotes transparency by establishing clear lines of responsibility and reporting mechanisms. It ensures that decision-making processes and financial transactions are open and accessible to relevant stakeholders. This transparency helps prevent corruption, misuse of funds, and inefficient use of resources. Also accountability encourages individuals and teams to make responsible decisions regarding resource allocation. When people know they will be held accountable for their actions, they are more likely to carefully consider the costs, benefits, and risks associated with different options. This leads to more informed and effective decision-making, maximizing the value derived from available resources.

Meanwhile Larbi (2019) entails that accountability helps control costs by ensuring that resources are used efficiently and in accordance with established guidelines. It encourages individuals and teams to adhere to budgetary constraints, avoid unnecessary expenses, and seek cost-effective solutions. With proper accountability measures in place, organizations can identify instances of overspending or wastage, enabling them to implement measures to reduce costs and enhance value for money. Accountability fosters a culture of continuous improvement within an organization. When individuals are held accountable for their performance, they are motivated to seek better ways of doing things, identify opportunities for innovation, and implement best practices. This leads to increased efficiency, effectiveness, and value for money over time.

6. Conclusion, Implications, and the Area for Further Research

Based on the study's findings, it is possible to conclude that the impact of accountability on unethical behaviour in procurement has various practical implications for procurement effectiveness. Improved accountability systems, such as regular audits and transparent reporting, can dramatically reduce corruption. Accountability helps procurement officials select suppliers based on set criteria and standards, resulting in more ethical behaviours and effective resource usage. This decreases the chance of favouritism and guarantees that contracts are given based on merit, resulting in higher quality and value for money.

Accountable procurement practices foster trust among stakeholders, including suppliers, customers, and the public. Holding procurement personnel accountable can improve an organization's reputation, lead to better supplier relationships, and improve operational efficiency. This improves overall performance by reducing delays and cost overruns. Additionally, accountability systems ensure legal and regulatory compliance. Promoting accountability promotes an ethical culture inside the organisation and reduces the possibility of legal fines for procurement operations. This motivates employees to operate with integrity while discouraging unethical behaviour, resulting in a more positive and productive workplace.

7. Practical Implication

The Dodoma Airport Authority should keep pushing for enough accountability, openness, integrity, and professionalism in the procurement process in order to close doors to corruption and to ensure that the established guidelines, policies, and procedures are followed. Furthermore, the organization ought to create a thorough framework for fostering excellent public procurement

governance in terms of accountability, transparency, and integrity as well as professionalism. This will help to reduce corruption and maximize risk management and value for money.

Practitioners involved in procurement should be committed to high for professional conduct and other ethical issues so as to ensure that procurement activities were conducted in ethical manner. The procurement practitioners should act as an example in adhering to the ethical matters since there has been a notion in the community that procurement practitioners were highly engaged in corruption practices.

8. Areas of Further Studies

Further studies can focus on the following areas: Factors hindering effective practice of ethics in procurement activities in local government authorities, the role of ethics in determining procurement activities in local government authorities and the contribution of ethics in enhancing procurement activities in local government authorities.

9. Limitations of the study

The study focused primarily on the variables of transparency and data access. The majority of interviewees expressed hesitation to share their thoughts due to fears of prospective enquiries. The inquiry was constrained by a small sample size, with just a few respondents available during the data collection process. However, this constraint had no effect on the study's reliability or validity. Certain data were classed as confidential, limiting the study's data accessibility. As a result, the study's data was gathered entirely through interviews and questionnaires.

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The Effect of Contract Planning on Performance of Irrigation Construction Projects: A case of Irrigation Projects in Mbarali district, Mbeya region

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Abstract

Projects face several challenges and inefficiencies in contract management practices that negatively impact their performance. This study sought to assess the Effect of Contract Planning on Performance of Irrigation Construction Projects using Irrigation Projects in Mbarali district, Mbeya region as the case study. The study adopted cross-sectional research design that is descriptive in nature which deals with cause-effect relationship between contract planning and performance of irrigation construction projects. The study used a mixed-methods approach, combining both qualitative and quantitative data collection techniques. The target population in this study was 150 employees that included; managers, contractors, clients and all staff of Uviko Irrigation Project in Mbarali District, Mbeya Region. The study used a sample size of 110 respondents from different departments and management levels. The sample size was obtained using a formula described by Yamane (1967). The study applied both probability and non-probability. Data was collected by administering the structured questionnaires for quantitative data and indepth interview to respondents for qualitative data. The data that collected was analyzed based on the specific objective and the study design. The data analysis process included; editing, coding as well as cleaning. Both descriptive and inferential statistics were computed with the aid of the Statistical Package for Social Sciences (SPSS). The study findings showed that contract planning had a positively significant relationship with performance of Uviko irrigation project in terms of Timely delivery, Quality of work and Cost. The study recommended that; The government of Tanzania should encourage and ensure that contract management is carried out in all construction projects to ensure good project performance that attains project goals. The Project management unit of Uviko Irrigation Project in Mbarali District, Mbeya Region, and the government of Tanzania should ensure that defining terms and conditions of the project is well outlined so as to enhance project performance.

Keywords: *Contract Planning, project performance, irrigation construction projects.*

1.0 Introduction

Contract planning involves the strategic pre-allocation of activities and resources—comprising human, material, and equipment components—necessary for the successful execution of a project (Oladiran, & Musa, 2020). Similarly, Contract management is crucial for successful project execution across various sectors (Mensah, 2018). It fosters transparent and efficient relationships between clients, contractors, suppliers, and stakeholders (Adjabeng, 2021; Anyango et al., 2021). Additionally, it provides a clear framework for project expectations and deliverables (Mughal et al., 2021). According to Ahmed, et al (2021), contract planning establishes a clear framework and scope, which mitigates risks and aligns stakeholder expectations, thereby enhancing project initiation and execution. It is a fundamental prerequisite for optimal project performance and is critical to the effective delivery of construction projects.

The absence of comprehensive contract planning often leads to suboptimal project outcomes, including inefficiencies, with the primary underlying factor being inadequate planning during the execution phase of construction projects (Oladiran, & Musa, 2020). Collectively, these contract planning contributes to improved efficiency, cost control, and quality assurance in project performance (Hassan, & Omwenga, 2023).

Construction companies should give higher priority to contract planning to overcome risky and dangerous operating environments (Wani & Rajput, 2019). A well established and mature contract planning process can generate great deal in additional savings (Mossalam & Arafa, 2016). Similarly, Wani & Rajput, (2019) asserts that poor operational control, low customer satisfaction, high risk and unwanted costs are the drawbacks of inefficient contract management.

Globally, modern project management moreso contract planning is adopting contract management to aid the process of management in an ever-increasing measure (Mishra, 2020). This has had great impact where the International Procurement Agency states that the global average performance rate in public entities in relation to procurement laws and policy compliance is 43.5% (Njoki et al., 2021). In Indonesia, Muhammad et al., (2019), firm performance in terms of different variables such as nature of the solution, cost & benefit analysis are significantly associated with the contract length. While project delivery and project quality are negatively associated with the contract length. In China, Zhao et al., (2018) noted that contractual complexity of nonequity project alliances was impacted by the differences in management style, differences in organizational responsiveness, mutual goodwill trust, and mutual competence trust.

In Africa, contract planning is still a challenge specifically in Sub Saharan Africa; contractors are not performing as per the contract. Most of them are not fully equipped in terms of personnel, equipment and financial capacity (Nsanzimana & Mulyungi, 2018). In Nigeria, contract planning influences project performance positively, the more frequent contract planning is carried out on projects, especially at the earliest stage, the better project performance. Despite that there are

challenges facing contract planning in construction projects such as; clients' cash flow problems, uncertainties in weather and design, ineffective communication, variation orders and slow decision making just to mention a few.

In the East African context, Manishimwe, (2020) noted that in Rwanda, contracts planning as a form of contract management should be given much importance and attention since it has direct effects on feeder roads projects performance. The management of project's budget coupled with its appropriate disbursement, project's implementation time management and characteristics of the appointed management team are the backbone of the effective and efficient projects contracts management. On the other hand, in Kenya, Kingoto & Ismail (2021) asserts that contract structure has a positive and significant influence on performance of commercial state corporations in Nairobi City County. Furthermore, contract monitoring has a positive and significant influence on performance of commercial state corporations in Nairobi City County. In Uganda's context, ('Okello, 2018) established significant relationships between public procurement procedures and contract management success in selected departments in Gulu Local Government. On the other hand, (Musiimenta, 2019) asserted that apart from contract controls, contract management attributes of contract planning, monitoring and evaluation has a significant influence on performance of construction projects.

In the Tanzania's context the reports indicated that very high information, negotiation and monitoring transaction costs were revealed at the post-contractual stage for higher levels of local government (Makupa, 2022). Furthermore, lower levels of local government are faced with very high transaction costs for all procurement stages due to a lack of procurement contract management capacity (Casady, Petersen, & Brogaard, 2023).

Tanzania has established a comprehensive legal framework for public procurement through the Public Procurement Act and its regulations. These laws outline the rules, procedures, and guidelines for conducting procurement and contract management in a transparent and accountable manner (Muinde, 2022). The Public Procurement Regulatory Authority (PPRA) is responsible for regulating and overseeing public procurement processes in Tanzania. It provides guidance, capacity-building, and oversight to ensure that procurement and contract management follow established rules. The Tanzanian government has further implemented an e-GP system to digitize and streamline the procurement process. This system allows online procurement planning, bidding, evaluation, and contract management, enhancing transparency and efficiency (Maagi & Mwakalobo, 2023).

Similarly, the Government of Tanzania has enhanced contract management effectiveness through Regulation 121 of the Tanzania Public Procurement Act (PPA) of 2004 and its 2016 amendment, requiring procuring entities to manage contracts for goods, services, and works (Mchopa, 2015). In 2016, the legal framework was overhauled to introduce electronic procurement, ensuring efficient and transparent procedures (Kihamba, 2021). Tanzania's national electronic public

procurement system, TANEPS, facilitates public procurement processes with functions like e-Tendering, e-Purchasing, e-Auction, e-Payment, and e-Contract management (Maagi & Mwakalobo, 2023; Assey, 2021).

Despite government efforts, Tanzania faces issues in donor-funded projects, with a reported unfinished irrigation dam construction of about TZS 31.6 million at Kinondoni Municipal Council (Controller and Auditor General, 2019). Additionally, 85% of reviewed irrigation work was done without or with partial feasibility. According to CAG (2020), most public procuring entities did not use the system, leading to increased transparency issues, malpractices, and poor accountability. This was because the e-catalogue and e-contract awards in TANEPS were incompatible with the GPSA inventory system and the Ministry of Finance payment system (CAG, 2020). The 2023 CAG report emphasized the need for effective regulation of public procurement and asset disposal systems for sustainable national development. Failures in government incentives and contract planning have led to inefficient project delivery, cost overruns, delays, reduced quality, and increased fraud and corruption risks in irrigation construction projects (Xie et al., 2022). This study aimed to address this knowledge gap in Tanzania by assessing contract planning on performance in irrigation projects, using the Uviko Irrigation Project in Mbarali District, Mbeya Region, as a case study.

1.1 Specific objectives

- i. To establish the effect of Defining Terms and Conditions on performance of the Uviko Irrigation Project in Mbarali District, Mbeya Region.
- ii. To determine the effect of Risk Assessment on performance of the Uviko Irrigation Project in Mbarali District, Mbeya Region.
- iii. To examine the effect of Contract Negotiation on performance of the Uviko Irrigation Project in Mbarali District, Mbeya Region.
- iv. To findout the effect of Legal and Regulatory Compliance on performance of the Uviko Irrigation Project in Mbarali District, Mbeya Region

2.0. Literature review

2.1 Theoretical Literature Review on the Effect of Contract Planning on Performance

Three theoretical frameworks that were proposed by researchers to underpin the assessment of the performance of contract management in constructing irrigation projects which are; the Theory of Public Contracts, Contract Management Theory and Theory of Constraints. The decision to use these the 3 theories was made to provide a comprehensive understanding of the complex relationships between contract management and project performance. By combining these three theoretical frameworks, the researchers aimed to gain a deeper understanding of the complex dynamics between contract management and project performance, ultimately providing a more

comprehensive and nuanced understanding of the research topic. The three theories have been discussed below;

- Theory of Public Contracts

Theory of public contracts was developed by (Spiller, 2008) to analyze how public procuring entities create and improve legal contracts. The theory evaluates how parties with contradictory interests develop formal and informal contracts through agreements (Spiller, 2008). The theory indicates that public procurement contracts appear to be characterized by formal, consistent, bureaucratic, inflexible processes. Public contracts are commonly seen to more rigid, necessitating regular formal renegotiation, with greater propensity to litigate, and giving weaker incentives (Ho, 2017). In previous writings, (Spiller, 2009) emphasized governmental opportunism as the fundamental risk of investors in public utilities, and how regulation by contract may limit such risk. Regulation by contract requires, however, a judiciary that not only will see such a contract as property and thus that cannot unilaterally be modified by the government, but also that will have the ability to enforce it. Facing these risks, then, private utilities may require that such regulatory contracts be highly specific, so as to limit opportunistic interpretations of contracts. This study briefly dealt with governmental opportunism, and focus instead on what was believed to be the fundamental risk faced by all public contracts - third party opportunism. The theory was considered to be relevant for this study in order to understand the effect of contract planning on performance of state own project since it agitates for fairness, transparency, efficiency, and accountability hence it gives theoretical background of this study.

- Contract Management Theory

Contract management theory can be interpreted as category management, contract administration and contracting processes (Knoester, 2010). While category management is about managing the contracting processes initiation, contract management is addressed by (Knoester, 2010) who speaks of contract management as the management of the engagement administration of all term agreements by which means a contract is closed. The study stressed that the contract management process ensures that the right information is in the right place at the right time, to support the whole of the contracting process. In project disciplines, this can be achieved by distributing contract information to all primary project stakeholders to determine and assess an optimal supply base. This theory is relevant to this study since it emphasizes the importance of clear performance standards and expectations in public contracts, highlighting the need for transparency in public procurement and contract administration and finally stressing the significance of complying with contractual obligations.

- Theory of Constraints

The Theory of Constraints (TOC) is a management philosophy and methodology developed by Eliyahu M. Goldratt (Tulasi & Rao, 2012). It is designed to help organizations identify and

overcome the constraints that limit their ability to achieve their goals. The central idea of TOC is that every system, whether it's a manufacturing process, a project, or a business, has at least one constraint that prevents it from reaching its full potential (Mabin & Balderstone, 2020). According to Ochieng (2010), the Theory of Constraints (TOC) is a philosophy of management and improvement originally developed by Eliyahu M. Goldratt and introduced in his book, *The Goal*. It is based on the fact that, like a chain with its weakest link, in any complex system at any point in time, only one aspect of that system that is limiting its ability to achieve more of its goal. For that system to attain any significant improvement that constraint must be identified and the whole system must be managed with it in mind. This theory was applicable to this study since it helped organizations optimize their processes, improve flow, reduce lead times, and ultimately achieve their strategic goals more effectively. By focusing on the most significant limiting factor, TOC helps organizations allocate resources where they are most needed, leading to improved performance and profitability.

2.2 Empirical Literature Review on the Effect of Contract Planning on Performance.

Oladiran & Musa, (2020) investigated the effect of contract planning on project performance. The population of the study were construction professionals (i.e. architects, builders, quantity surveyors and engineers) in Lagos State. A total of 150 questionnaires were administered to the respondents. The findings revealed that several types of contract are adopted on construction projects, including traditional, management, integrated among others. Contract planning also contributed positively to project performance, especially in the aspect of quality, cost, time, functionality and minimization of rework, thereby fostering sustainability in construction projects. The study concluded that although there were various types of contracts, they were adopted differently on specific projects. It implied that the type of project could determine the type of contract to be adopted.

Akinradewo et al., (2019) revealed that only about eight (8) of the evaluated contract planning tools and techniques were mostly used by clients, which were; work breakdown structure, site layout, plan, risk management plan, human resource plan, method statement, cost management plan, plant schedule, material schedule, and labour schedule. However, it also revealed their level of use and the factors affecting contract planning practices, finally the results showed that contract planning from clients' perspective had a significant effect on construction project performance in terms of cost savings, project delivery time, quality, scope of the project and clients' satisfaction. The study recommended contract planning practices as a means for maximizing and improving the performance of construction projects.

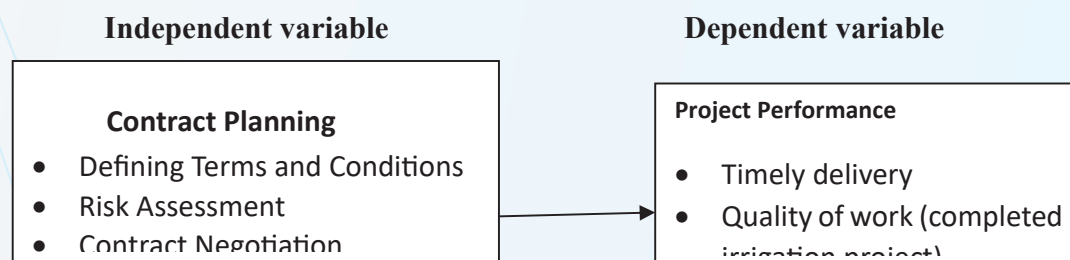
Rabechini Junior & Monteiro de Carvalho, (2013) in their study aimed to comprehend the impact of risk management on project performance. Further it aimed to investigate the degree of diffusion of risk management practice in Brazilian companies. The methodological approach involves a

survey of 415 projects at different levels of complexity in different industrial sectors in several states of Brazil. The results demonstrated that adopting risk management practices has a significant positive impact on project success. They also showed a positive impact from the presence of a risk manager on project success. From the practical point of view, paying attention to uncertainties during the project, making use of the risk management techniques and deeply understand the business environment are critical success factors, demanding attention of project managers and risk managers. The results demonstrated the impact of risk management practices on project success. They also showed a positive impact from the presence of a risk manager on project success. Furthermore, it demonstrated the importance of soft skill in risk management.

2.3 Conceptual Framework

According to Sitko (2013), the conceptual framework is a system of concepts, assumptions, expectations, beliefs, and theories that support and inform your research through explaining either graphically or in narrative form the key factors, concepts or variable and the presumed relationships between them. The Independent variable in this study was contract management that had several dimensions like; contract planning, contract administration, and contact evaluation. These dimensions also comprise of; Contract Planning comprised of; defining terms and conditions, risk assessment, contract negotiation and legal and regulatory compliance (Oladiran & Musa, 2020b). The dependent variables was project performance as indicated by; Timely delivery, Cost and Quality of completed irrigation project. The Figure 1 below shows the cause effect relationship between independent variables and dependent variables were contract management techniques results into better project performance.

Figure 23: The conceptual framework showing the relationship between contract Planning and project performance.



Source: Adopted and Modified by Researcher (2023)

3.0. Research Methodology

3.1 Research Design

The study adopted cross-sectional research design that is descriptive in nature which deals with cause-effect relationship to investigate the effect of contract management on performance in constructing irrigation projects using construction of Uviko Irrigation Project in Mbarali District, Mbeya Region as an example. The study adopted a cross-sectional research design for the following reasons since; it enables data collection at a specific point in time, providing a snapshot of the relationship between contract management and project performance, the design allows for examining the relationships between contract management practices and project performance outcomes.

3.2 Research Method

The research method for this study involved a mixed-methods approach, combining both qualitative and quantitative data collection techniques to comprehensively assess the effect of contract management on the performance of irrigation construction projects in Mbarali District, Mbeya Region. This allowed the statistical analysis of contract management practices and their direct impact on project performance outcomes. Complementing this, qualitative data was collected via in-depth interviews and focus group discussions, providing rich, contextual insights into the challenges and successes experienced in contract management. This dual approach ensured a robust analysis, enabling the identification of key factors influencing project performance and the development of recommendations for enhancing contract management practices in similar projects.

3.3 Area of the Study

In this study Uviko Irrigation Project in Mbarali District, Mbeya Region was the study area. The rationale of selecting Uviko Irrigation project lied on the fact that contract management techniques greatly influence their project performance and this irrigation project has Mult million contracts (Ministry of Agriculture (TZ) Budget 2022-2023). This made it an ideal area to assess the effect of contract management on performance in constructing irrigation projects using construction of Uviko Irrigation Project in Mbarali District, Mbeya Region hence it was easy to access data.

3.4 Sampling procedures

The study applied both probability and non-probability sampling procedures in selecting the study sample. The study employed a proportionate stratified sample technique to select respondents from each department. The stratification based on departmental professionals and the number of employees involved in the contract management; from each stratum the proportional random sampling was employed to select respondents. On the other hand, purposive sampling was employed to select key informants. The key informants in this study included top managers of project and contracted firms. Purposive sampling was used because it provides an opportunity to

focus on particular characteristics of the population that are of interest, which best enabled the researcher to answer their research questions.

3.5 Data Analysis

Data analysis was preceded by data coding. Coding prepares data for easy entry and analysis. Each question was coded to obtain variables with the corresponding values. After coding, data was entered into SPSS software for analysis. Statistical data was interpreted and inferences drawn.

In qualitative data analysis, data was arranged, organized, coded and validated. use thematic analysis and justify was used for analyzing qualitative data. The data was then presented in a systematic manner through a report. The quantitative data was coded and summarized before entering to SPSS. Descriptive statistics was used in the analysis. The rationale for using both methods was that it provides more complete and accurate information. For inferential statistics, a Likert scale analysis was used to measure perception. Statistical data was interpreted and inferences drawn. Descriptive statistics such as frequencies and percentages were presented in tabular form. Qualitative data analysis was conducted through the following three steps; firstly, developing and Applying Codes. Secondly, identifying themes, patterns and relationships and lastly summarizing the data.

Table 13: Data analysis plan

Objective number	Nature of data required	Data analysis technique
1	Qualitative and quantitative data	Inferential statistics
2	Qualitative and quantitative data	Inferential statistics
3	Qualitative and quantitative data	Inferential statistics
4	Qualitative and quantitative data	Inferential statistics

Source: Estimations by the Researcher (2023)

3.5.1 Quantitative Data

To examine the effect of contract planning on performance of Uviko Irrigation Project in Mbarali District, Mbeya Region. The multiple regression model was used to examine the effect of contract planning on performance of Uviko Irrigation Project in Mbarali District, Mbeya Region.

$$Y = \beta_0 + \beta_1 \text{NeAn} + \beta_2 \text{DeTeCo} + \beta_3 \text{RiAs} + \beta_4 \text{CoNe} + \beta_5 \text{LeReCo} + \epsilon \dots (1)$$

Where by:

Y= Project performance

NeAn=Needs Analysis

DeTeCo= Defining Terms and Conditions

RiAs=Risk Assessment

CoNe=Contract Negotiation

LeReCo=Legal and Regulatory Compliance

ϵ = error term

4.0 Findings And Discussion

4.1 Demographic Characteristics of Respondents

The study considers the importance of analyzing the characteristics of a study population as it helps in data interpretation. The respondents were asked about their gender, age, marital status and level of education as shown in Table 6 These variables were deemed important in the interpretation of the data.

The findings from the Table below revealed that about 56% of respondents were male and only 44 were female. This implies that most of the respondents involved in the Uviko Irrigation Project in Mbarali District, Mbeya Region were male, a fact that may be attributed to the economically lucrative nature and the physical strength requirement involved in the Uviko Irrigation Project in Mbarali District, Mbeya Region.

Table 14: Demographic profile of respondents

Variable	Response	Frequency	Percentage (%)
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Gender	Male	56	56
	Female	44	44
	Total	100	100
Age	Less than 30 years	19	19
	31 to 35 years	24	24
	36 to 40 years	23	23
	41 to 45 years	15	15
	46 to 50 years	11	11
	Above 51 years	8	8
	Total	100	100
Education level	Certificate	7	7
	Diploma	16	16
	Bachelor's degree	55	55
	Master's degree	12	12
	Others e.g. PhD, No formal education, Primary, Secondary	10	10
	Total	100	100
Working Experience	Less than a year	9	9
	1 – 4 years	23	23
	5 – 7 years	51	51
	8 – 10 years	11	11
	Above 10 years	6	6
	Total	100	100%

Source: Study findings (2024)

Additionally, it was also observed that the majority of the respondents were aged 31 to 35 years represented by 24% followed by respondents aged between 36-40 years constitute 23% of the respondents. Furthermore, 19% of the respondents were aged 30 years and below whilst 15%, 11% were aged between 41 to 45 years and 46 to 50 years respectively. This implies that; in the Uviko Irrigation Project in Mbarali District, Mbeya Region had a young and strong labour force. This age distribution suggests a dynamic and potentially innovative labor force, likely to possess both the physical stamina and the adaptability required for demanding irrigation construction tasks. A younger workforce is often more open to adopting new technologies and methodologies, which can enhance the efficiency and effectiveness of project execution. Moreover, the presence of a substantial proportion of individuals in their early to mid-career stages can contribute to a more vibrant and motivated work environment, fostering a culture of continuous improvement and resilience. This demographic profile aligns well with the project's needs, as irrigation construction requires both robust physical effort and the ability to learn and implement new engineering practices swiftly. Consequently, the age distribution within the Uviko Irrigation Project team could be a significant factor contributing to the project's overall performance and success.

In terms of the level of education attained, the results further indicated that the majority (55%) of the respondents had a Bachelor's degree as represented. This was followed by respondents with a Diploma represented by 16% of the respondents. Respondents having attained a Certificate and Masters constituted 7% and 12% of the respondents respectively. While only 10% of the respondents were having other levels of education such as not having attended school, PhD, Primary, and Secondary school education. Generally, Uviko Irrigation Project in Mbarali District, Mbeya Region had a well-educated labour force that understands the effect of contract management on irrigation construction projects.

Regarding the working experience, the majority that is 51% of the respondents, had 5 to 7 years of working experience. This was followed by 23% of the respondents had 1 to 4 years of working experience whilst only 6% of the respondents had 10 years and above of working experience. Generally, most of the workers had worked at the Uviko Irrigation Project in Mbarali District, Mbeya Region for a relatively good number of years so they were in a better position to provide information regarding the effect of contract management on irrigation construction projects.

4.4 Correlations Analysis

The study further sought to establish the correlation between the independent and dependent variables. The Pearson's product moment correlation analysis was used to assess the strength of the relationship between the variables.

Table 15: Correlation between contract planning, contract administration, and contact evaluation on Project Performance

		contract planning	Timely delivery	Quality of work (completed irrigation project)	Cost
contract planning	Pearson Correlation	1	.654***	.926**	.638**
	Sig. (2-tailed)		.000	.006	.000
	N	100	100	100	100
	N	100	100	100	100
Timely delivery	Pearson Correlation	.654***	1	.623**	.850**
	Sig. (2-tailed)	.000		.005	.000
	N	100	100	100	100
Quality of work (completed irrigation project)	Pearson Correlation	.926**	.623**	1	.731**
	Sig. (2-tailed)	.006	.005		.000
	N	100	100	100	100
Cost	Pearson Correlation	.638**	.850**	.731**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	100	100	100	100

Relationship between Contract Planning and Project Performance

From the correlation matrix in the table above, it was noted that contract planning had a strong significant positive relationship with measures of project performance that is Timely delivery, Quality of work (completed irrigation project) and Cost as indicated by .654***, .926**, and .638** respectively. This implies that contract planning in terms of; Needs Analysis, Defining Terms and Conditions, Risk Assessment, Contract Negotiation and finally Legal and Regulatory

Compliance had a positive project performance in terms of; Timely delivery, Quality of work (completed irrigation project) and Cost.

4.5 The Effect of Contract Planning on Performance of Uviko Irrigation Project.

Model Evaluation

The study adopted a multiple regression analysis to determine the variation caused by the independent variables on dependent variable. These included; Needs Analysis, Defining Terms and Conditions, Risk Assessment, Contract Negotiation, and finally Legal and Regulatory Compliance. The dependent variable was Project Performance (timely delivery, quality of work (completed irrigation project), cost) of Uviko irrigation project.

Table 16: Model evaluation results

Model	R	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics				
					F Change	df1	df2	Sig. F Change	
1	.825 ^a	.681	.664	.579	.681	40.162	5	94	.000

a. Predictors: (Constant), Legal and Regulatory Compliance, Defining Terms and Conditions, Risk Assessment, Needs Analysis, Contract Negotiation

b. Dependent Variable: Project Performance (Timely delivery, Quality of work (completed irrigation project), Cost)

Results from Table 4 indicate that the R- square was estimated at 66.4% indicating that the model was fit in explaining the variables. It has also established that the variation in project performance (in terms of Timely delivery, Quality of work, Cost) can be explained by the independent variables (Needs Analysis, Defining Terms and Conditions, Risk Assessment, Contract Negotiation and finally Legal and Regulatory Compliance) by 66.4 per cent. This implies that the remaining 33.6% of the variation in project performance is explained by variables that the study didn't capture.

Table 17: Analysis of variance

ANOVA ^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	67.263	5	13.453	40.162	.000 ^b
	Residual	31.487	94	.335		
	Total	98.750	99			
a. Dependent Variable: Project Performance (Timely delivery, Quality of work (completed irrigation project), Cost)						
b. Predictors: (Constant), Legal and Regulatory Compliance, Defining Terms and Conditions, Risk Assessment, Needs Analysis, Contract Negotiation						

The results in Table 9 indicate that the regression model was significant in predicting how legal and regulatory compliance, defining terms and conditions, risk assessment, needs analysis, and contract negotiation affect the project performance (timely delivery, quality of work (completed irrigation project), cost) of Uviko irrigation project because the p-value was $P=0.000$ which is less than 0.05 ($P<0.05$).

Table 18: Multiple Regression Analysis

Model	Coefficients ^a							
	Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics			
	B	Std. Error	Beta	T	Sig.	Tolerance	VIF	
1 (Constant)	-1.905	.678		-2.808	.006			
Defining Terms and Conditions	.192	.061	.205	3.137	.002	.797	1.254	

Risk Assessment	-.129	.072	-.127	-	.074	.687	1.456
				1.805			
Contract Negotiation	.355	.131	.296	2.704	.008	.282	3.540
Legal and Regulatory Compliance	.384	.131	.372	2.940	.004	.211	4.729

a. Dependent Variable: Project Performance (Timely delivery, Quality of work (completed irrigation project), Cost)

The findings indicated that defining terms and conditions was positively associated with project performance at 0.205 with the p-value less than 5% ($p < 0.002$). This implies that the unit change in defining terms and conditions on average increased the project performance by 29.2%. Therefore, defining terms and conditions when well carried out led to increased Project Performance in terms of; Timely delivery, Quality of work (completed irrigation project), and finally Cost. The results revealed that risk assessment was negatively associated with Project Performance at -.127. This implies that the unit increase in the level of risk assessment led to 12.7% decrease in the Project Performance. The study findings in Table 6 show that Contract Negotiation had a positively significant relationship with project performance of Uviko irrigation project with the p-value (0.008) less than 0.05 ($p < 0.05$) and with a coefficient of 0.296. This implies that a unit change in the Contract Negotiation on average increased the project performance in terms of; Timely delivery, Quality of work (completed irrigation project), and finally Cost by 29.6%. Finally, the findings in Table 6 show that Legal and Regulatory Compliance had a positively significant relationship with the project performance at the p-value less than 5% ($p < 0.004$) and with the coefficient of .372. This implies that unit change in Legal and Regulatory Compliance on average increased project performance in terms of; Timely delivery, Quality of work (completed irrigation project), and finally Cost by 37.2%.

Findings on the effect of contract planning on performance of Uviko irrigation project were supported by those from interviewee A who stated that; *“For the Uviko irrigation project, the quality of contract planning has directly impacted various performance indicators, including project timelines, budget adherence, resource allocation, and stakeholder satisfaction. A well-planned contract has ensured that all parties involved understand their roles and responsibilities, thereby minimizing confusion and conflicts during project implementation”*.

Interviewee B stated that, *“comprehensive contract planning has enabled effective risk management by identifying potential challenges and developing strategies to address them proactively. This proactive approach has helped to mitigate delays, cost overruns, and other issues that may negatively impact project performance.”*

Interviewee C stated that, *“effective contract planning has facilitated communication and collaboration among project stakeholders, fostering a conducive environment for cooperation and coordination. Clear and concise contractual terms provide a framework for decision-making and problem-solving, enabling timely resolution of issues and preventing disputes that could derail the project.”*.

Generally, from the study findings, it can be noted that contract planning in terms of; Needs Analysis, Defining Terms and Conditions, Contract Negotiation, and finally Legal and Regulatory Compliance had a positively significant relationship with performance of Uviko irrigation project in terms of Timely delivery, Quality of work (completed irrigation project), and finally Cost. This concurs with Akinradewo et al., (2019) that examined contract planning on construction projects from clients’ perspective and its effects on performance and revealed that only about eight (8) of the evaluated contract planning tools and techniques are mostly used by clients, which were; work breakdown structure, site layout, plan, risk management plan, human resource plan, method statement, cost management plan, plant schedule, material schedule, and labour schedule. However, it also revealed their level of use and the factors affecting contract planning practices, finally the results shows that contract planning from clients’ perspective has a significant effect on construction project performance in terms of cost savings, project delivery time, quality, scope of the project and clients’ satisfaction.

5.0 Conclusions and Recommendations

5.1 Conclusion

Basing on the study findings; the variation in project performance (in terms of Timely delivery, Quality of work, Cost) can be explained by the independent variables (Defining Terms and Conditions, Risk Assessment, Contract Negotiation and finally Legal and Regulatory Compliance) by 66.4 per cent. This implies that the remaining 33.6% of the variation in project performance is explained by variables that the study didn’t capture. The variation in project performance (in terms of Timely delivery, Quality of work, Cost) can be explained by the independent variables (Compliance and Legal Considerations, Timely payments and accurate invoicing, Contract Review, Performance Monitoring, Issue Resolution, Effectively putting terms are into action, and Record Keeping) by 52.9 per cent. This implies that the remaining 47.1% of the variation in project performance is explained by variables that the study didn’t capture. It was also established that 60.4% of the variation in project performance (Timely delivery, Quality of work (completed irrigation project), Cost) can be explained by the independent variables that include; Performance reporting, Compliance Review, Risk analysis, Performance Assessment, Deliverable Verification, Financial Review. This implies that the remaining 39.6% of the variation in project performance is explained by variables that the study didn’t capture. All in all, at Uviko irrigation project; contract planning had a significant effect project performance. This implies that good contract

planning had great contribution on performance of Uviko Irrigation Project in Mbarali District, Mbeya Region.

5.2 Recommendations

Given the conclusions and observations reported herein, the following recommendations are presented firstly, the government of Tanzania should encourage and ensure that contract management is carried out in all construction projects to ensure good project performance that attains project goals. Secondly, the Project management unit of Uviko Irrigation Project in Mbarali District, Mbeya Region, and the government of Tanzania should ensure that the Defining Terms and Conditions of the project are well outlined so as to enhance project performance. Thirdly, the Project management unit of Uviko Irrigation Project in Mbarali District, Mbeya Region, and the contractors should carryout Risk Assessment so as to ensure project performance within the time frame and budget. Finally, Periodical contract reviews should be carriedout by the project management unit, the government and the supervisor so as to ensure good project performance.

5.3 Suggestions for Further Studies

As the findings of this study are based on only Uviko Irrigation Project in Mbarali District, Mbeya Region, there is a need to conduct more empirical research on the effect of contract management on irrigation construction projects in Tanzania as a whole. By doing so the performance of irrigation projections will be enhanced.

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Factors Influencing Employee Turnover in Tanzania Higher Learning Institutions: A Case of the Institute of Finance Management (IFM) – DSM

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Abstract

Employee turnover in higher learning institutions in Tanzania remains a critical concern, affecting productivity, institutional stability, and the quality of education. This article aims to examine the factors influencing employee turnover in higher learning institutions, focusing on the Institute of Finance Management (IFM) in Dar es Salaam (DSM). Utilizing a mixed methods approach, the study gathered data from staff through surveys and interviews. Key findings indicate that job dissatisfaction, poor remuneration, lack of professional growth opportunities, and management style are pivotal in driving turnover at IFM. The study recommends strategies to retain employees, including enhancing career development programs, improving compensation packages, and fostering positive management practices.

Keywords: *Employee turnover, higher learning institutions, Institute of Finance Management, job dissatisfaction, management style, Tanzania*

1. Introduction

Employee turnover, defined as the rate at which employees leave an organization, has long been a challenge in various sectors, including higher learning institutions. In Tanzania, this issue is particularly pressing, as it can disrupt academic operations and diminish the quality of education. Employee turnover is costly for institutions as they lose experienced staff, incur recruitment costs, and face potential declines in institutional performance (*Armstrong, 2010*). The Institute of Finance Management (IFM) is no exception to this trend, as staff turnover has been observed over the past decade. This article aims to investigate the factors that influence employee turnover at IFM, DSM, and propose effective strategies for reducing turnover.

2. Literature Review

A growing body of literature has explored the causes and consequences of employee turnover in educational institutions. Scholars have identified several key factors driving turnover, including low job satisfaction, insufficient compensation, and inadequate career growth opportunities (*Price, 2001*). Additionally, organizational culture and leadership styles play significant roles in influencing turnover rates (*Robbins, 2003*). Higher learning institutions in Tanzania face similar

challenges, compounded by the scarcity of resources and limited opportunities for professional development (*Ngirwa, 2006*).

Employee turnover models, such as the push-pull model, suggest that dissatisfaction with internal job factors (push factors) such as poor management and low salaries can compel employees to leave, while external factors (pull factors) like better job opportunities elsewhere lure them away (*Hom & Griffeth, 1995*). In the context of Tanzania's higher learning institutions, these factors are further exacerbated by institutional instability and government policies affecting remuneration and staffing levels (*Mwakibinga & Bendera, 2009*).

3. Empirical Literature Review

In Tanzania, empirical studies on employee turnover have shown that higher learning institutions are particularly vulnerable due to financial constraints and poor working conditions. A study by *Nghambi (2015)* on public universities revealed that employees often leave due to inadequate compensation and limited career advancement prospects. Similarly, *Kimaro (2017)* found that many academic staff at IFM left the institution for positions in the private sector or international organizations where compensation was more competitive.

A recent study by *Mkude (2020)* indicated that leadership and management practices were pivotal in influencing employee retention in Tanzania's universities. Poor communication, lack of transparency, and a rigid management structure were cited as key reasons why academic and administrative staff sought employment elsewhere.

4. Research Gap

While there has been considerable research on employee turnover in Tanzania's public institutions, specific studies focusing on higher learning institutions, particularly IFM, are scarce. Additionally, most studies focus on public universities, leaving out financial institutions like IFM, which have unique organizational dynamics. This research aims to fill this gap by investigating the specific factors influencing turnover at IFM, contributing to a more comprehensive understanding of turnover in Tanzania's higher education sector.

5. Research Methodology

This study employed a mixed-methods approach to gather both qualitative and quantitative data. Surveys were administered to 150 IFM staff members, including academic and administrative personnel, to capture their experiences regarding turnover factors. Additionally, in-depth interviews were conducted with ten key informants, including department heads and senior management, to gain deeper insights into institutional dynamics influencing employee retention.

Data analysis involved both statistical analysis for quantitative data and thematic analysis for qualitative data.

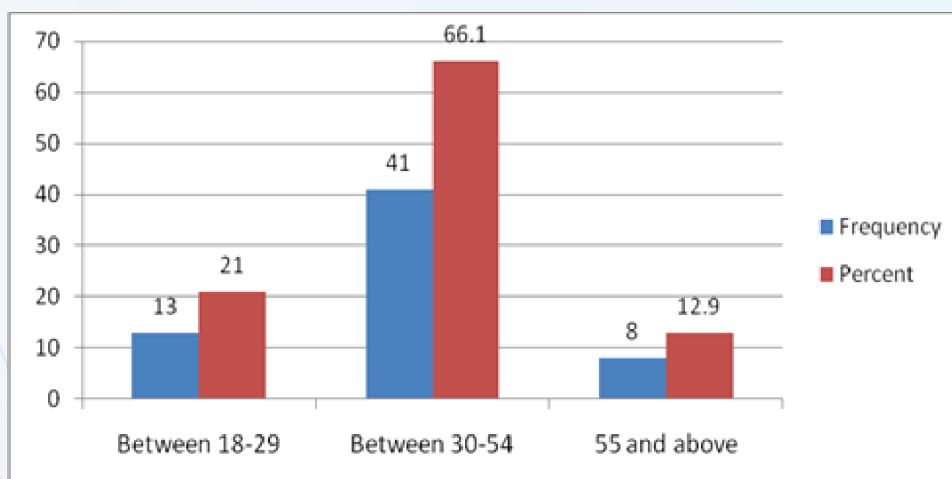
6. Study Area

The study was conducted at the Institute of Finance Management (IFM) in Dar es Salaam (DSM), one of Tanzania's leading financial education institutions. IFM provides undergraduate and postgraduate education in finance, management, and information technology, serving as an ideal case study for examining employee turnover in higher learning institutions.

7. Study Population

The study population comprised all staff employed at IFM as of 2023, totaling approximately 67 individuals. This included both academic staff, such as lecturers and professors, as well as non-academic administrative staff responsible for the institution's day-to-day operations.

Age group of Respondents



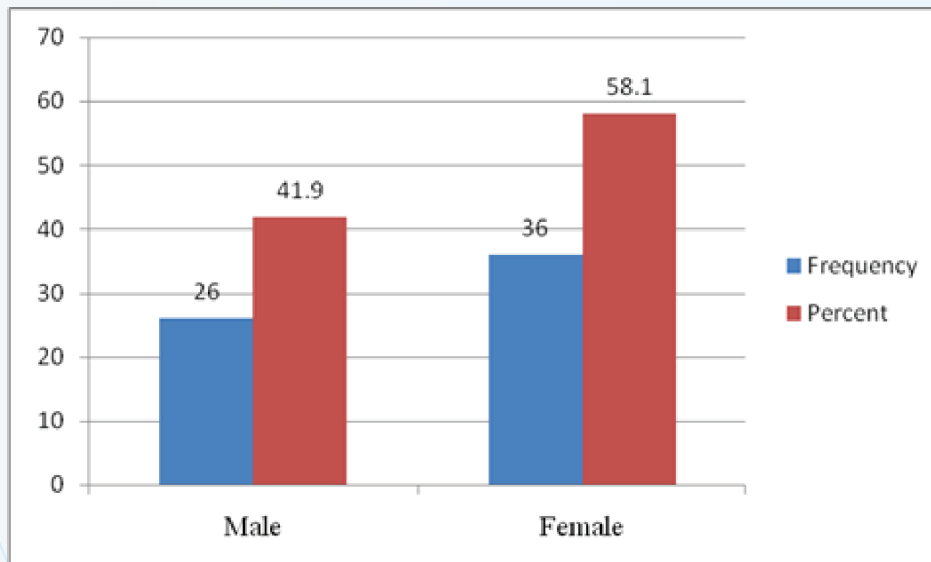
8. Findings and Discussion

The study revealed several factors contributing to employee turnover at IFM. The most significant factor was job dissatisfaction, with 65% of survey respondents indicating that their job did not meet their expectations in terms of workload, resources, and working conditions. Poor remuneration was the second most cited reason, with 58% of employees stating that their salaries were not competitive compared to similar institutions in the private sector.

Lack of career development opportunities was another key driver of turnover, with 45% of staff mentioning the absence of clear paths for promotion or professional growth. Additionally, 40% of respondents expressed frustration with the institution's management style, citing poor communication, limited autonomy, and lack of transparency in decision-making processes.

The qualitative data further emphasized these findings, with interviewees highlighting the need for more supportive leadership and better working conditions. Management's failure to address employee grievances was frequently mentioned as a trigger for turnover, aligning with findings from earlier studies (*Armstrong, 2010*).

Gender of Respondents



9. Conclusion and Recommendations

Employee turnover remains a critical issue at IFM, driven by factors such as job dissatisfaction, inadequate compensation, lack of career development opportunities, and poor management practices. To address these challenges, the study recommends that IFM prioritize improving employee satisfaction through better remuneration packages, enhanced career development programs, and a more supportive management style. Furthermore, fostering open communication and providing opportunities for staff to contribute to institutional decision-making could improve employee retention.

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Level of Satisfaction of Public Servants' Retirees on Reformed System of Retirements Benefits: A Case of Dodoma City

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Abstract

The study assessed the level of satisfaction of public servants' retirees on the reformed retirement benefits system. The objective was to measure the extent to which public servants are satisfied with the existing system of retirement benefits and how it affects employee's social economic life after retirements. To achieve intended goals the social exchange theory was employed to guide this study. The study employed a cross-sectional design where both qualitative and quantitative data were collected. Assessed public servant retirees' awareness with pension processing, awareness of the new formula for calculating retirement benefits, awareness of the amount transferred to the social pensions fund and monthly payment after retirement. Data collected were analyzed using descriptive statistics and thematic analysis responding to public servant satisfaction with reformed retirement benefit system. The study found public servants and retirees are not satisfied with the client care of PSSSF, service delivery to members, amount received as pension lumpsum after retirement, but also, they are not satisfied by the amount received monthly. Owing to the findings researcher recommends that the government must accept and listen to the complaints of public servants. Also, the government should revise the current system of retirement benefits, or retain the, the older system which seems to be better than the present one. By taking advice from employees and employees association and working the recommendation for improving retirement benefits employee will be satisfied and motivated hence contributing to work performance.

Keywords: *Level of satisfaction; Public servants' retirees; retirement benefits*

Introduction

A reformed system of retirement benefits refers to changes or improvements made in existing retirement benefits programs, such as social security or pension plans (Goldwein et al, 2019). In the late 20th and early 21st century, the world has witnessed a growing struggle of many social security systems. There have also been contrasting arguments with some scholars arguing that the systems are overpriced and detrimental to the process of economic development and growth

(Goldwein *et al.*, 2019). Others claim that social security is more important than ever in light of rising unemployment and other types of labour instability and point out flaws in the degree of protection and the area of coverage. The stability of such schemes has also been shaken due to imprudent schemes that have had little impact in creating long-term returns. The instability is also exacerbated by the fact that a small proportion of the population is included in the scheme, specifically in developing economies (Bosworth & Burtless, 2016).

According to ILO (2001), more than half of the world's population (workers and their dependents) are not covered by any form of social security protection, which is one of the major worldwide issues social security is confronting. Evaluations of statutory social security personnel coverage in South Asia and sub-Saharan Africa range from 5% to 10% of the working population, and in certain situations, are declining (Abdychev *et al.*, 2018; ILO, 2001). In Latin America, coverage is primarily stagnant and ranges from 10 to 80 per cent (ILO, 2001).

While the significance of social security schemes cannot be understated, the mounting challenges that have compromised their sustainability have forced governments across the globe to undertake reform processes to ensure their sustainability (Charles, 2017). One of the key challenges has been a declining proportion of contributions and an increasing proportion of payments which necessitated government intervention (Mwakisisile and Larsson, 2021). Tanzania as a developing economy was not immune to them, given the fact that the country had five different social security schemes serving more or less the same purpose. The five independent security schemes that operated before 2018 included the Parastatal Pension Fund (PPF), Government Employees Provident Fund (GEPF), Public Service Pension Fund (PSPF), National Social Security Fund (NSSF) and Local Authority Pension Fund (LAPF).

Tanzania went into a reform process in 2018 and established the Public Service Social Security Fund (PSSSF) (Dennis, 2020). The scheme was established by the Public Service Social Security Fund Act, Cap 371 ("PSSSF Act"). The Act repealed the Public Service Retirement Benefits Act, the LAPF Pensions Fund Act, the GEPF Retirement Benefits Fund Act and the PPF Pensions Fund Act and applies in Mainland Tanzania in respect of all employers and employees in the Public Service (URT, 2020). The main purpose of the Fund is to collect contributions and make payments of benefits to its members. Under the Act, the contributions payable by an Employer is 20% of the employee's monthly salary constituting 5% deducted from the employee's salary and 15% contributed by the employer.

Besides registering its members and contributing employers the new scheme also performs the function of collecting members' contributions from employers; investing surplus funds in profitable investments; and disbursement of pension, gratuity and other benefits. Under the provisions of sections 25 to 48 of the PSSSF Act of 2018, the benefits coverage comprises retirement benefits, death benefits, invalidity benefits, maternity benefits, unemployment benefits and education benefits. The reform process further led to the creation of a new system or formula

for the calculation of retirement benefits to all beneficiaries of the social security scheme in Tanzania. The 33 per cent pension formula of workers' total savings in lump sum payments upon retirement was introduced to bring equity among pensioners from the private and public sectors (Dennis, 2020). The lumpsum of 33 per cent, however, was not received positively by public workers. The majority of workers preferred the older pension retirement benefits formula which provided a 50 per cent lump sum or should be more than that.

Addressing the public the president of the United Republic of Tanzania, her Excellency Dr. Samia Suluhu Hassan on 15 April, 2024 while receiving dividends from public corporations also evidenced that the amount given to retirees of 33% looks like a punishment to retirees. She also pointed out that when looking at the PSSSF projects, many investments projects are not doing very well. These non-beneficial projects make PSSSF not have sufficient funds to pay retirees as they used retirees' money to invest in these construction projects but they receive little from those investments. The older system was much more beneficial to retirees than the new formula. The new formula looks like a punishment to employees instead of helping them.

While addressing the parliament regarding the generalization of the government budget, the Minister for Finance (Dr Mwigulu Nchemba) announced that the government had increased the payable lumpsum from 33 per cent to 40 per cent (Minister for Finance, 2024). However, that 40 per cent payable as lumpsum is still not yet well welcomed by Tanzanians. Public servants still need the last lump sum of 50 per cent or more.

Research Methods

In this study cross sectional research design was used. This is due to the reason that cross-sectional research design allows the collection of data only once from the field.

This study was conducted in Tanzania specifically in Dodoma region, the region hosts the nation's capital city where the legislative assembly is based. According to the 2022 national census, the region had a population of 3,085,625 (Dodoma regional profile, 2023).

This study collected information from public servants and retirees from the education sector and health sector. In the education sector, the information was collected from primary school teachers and secondary school teachers. In the health sector, the information was collected from nurses. Specifically, the information was collected from respondents who are either expecting to retire soon and those already retired.

In this study 93 respondents were involved primary school teachers either retired and those expecting to retire soon (34 nurses and expecting to retire soon were selected randomly from 04 hospitals and personnel from PSSSF headquarters in Dodoma.

The study used both random and purposive sampling techniques. Random sampling was used for respondents from the education and health sectors while purposive sampling was used for staff from PSSSF headquarters. The respondents from the education and health sectors are the key respondents as they form larger group of public servants who are subject of retirement benefits while PSSSF are the ones concerned with issues of retirement benefits for public servants.

This paper used primary and secondary data to address issues relating to public servants retirement benefits.

Both primary and secondary data were collected. Primary data was collected using both questionnaires and interviews while secondary data was collected using a documentary review by looking at various publications in journals, articles, government reports and conference proceedings.

Quantitative data obtained through questionnaires were analyzed using descriptive statistics as well as through regression analysis by using Statistical Package for Social Science. On the other hand, the qualitative data collected using interviews were analyzed by thematic analysis by using common themes which were created from information obtained from interview.

Results and Discussion

The study determined the level of satisfaction of public servants and retirees with a reformed of retirement benefits system by looking at the following; client satisfaction with customer care given to the by PSSSF staff, retirers satisfaction with service delivered by PSSSF staff, retirers satisfaction with the amount received as pension lump sum after retirement and retirers satisfaction with the amount received monthly.

The table below shows the level of satisfaction of public servants and retirees on reformed system of retirement benefits

	Response	Frequency	Percentage
Satisfaction with client care by PSSSF	Strongly agree	0	0.0
	Agree	16	17.2
	Neutral	18	19.4
	Disagree	51	54.8
	Strongly disagree	8	8.6
	Total	93	100.0

Satisfaction with service delivery to members of PSSSF	Strongly agree	8	8.6
	Agree	8	8.6
	Neutral	31	33.3
	Disagree	46	49.5
	Strongly disagree	0	0.0
	Total	93	100.0
Satisfaction with the amount received as a pension lump sum after retirement	Strongly agree	0	0.0
	Agree	0	0.0
	Neutral	36	38.7
	Disagree	49	52.7
	Strongly disagree	8	8.6
	Total	93	100.0
Satisfaction with the amount received monthly	Strongly agree	0	0.0
	Agree	0	0.0
	Neutral	29	31.2
	Disagree	46	49.5
	Strongly disagree	18	19.4
	Total	93	100.0

Source: Field data, 2024

Starting with the satisfaction with client care by PSSSF, findings were as follows; 17.2 per cent of respondents agreed, 19.4 per cent of respondents were neutral, 54.8 per cent of respondents disagreed and 8.6 per cent of respondents strongly disagreed (table 1).

Based on the findings, majority (54.8%) of respondents are not satisfied with client care by PSSSF.

Concerning satisfaction with service delivery to members of PSSSF, findings were as follows; 8.6 per cent of respondents strongly agreed, another 8.6 per cent of respondents agreed, 33.3 per cent of respondents were neutral and 49.5 per cent of respondents disagreed (table 1). Using the responses the majority (49.5%) of respondents were not satisfied with service delivered to members of PSSSF.

Looking at satisfaction with the amount received as pension lump sum after retirement, findings were as follows; 38.7 per cent were neutral, 52.7 per cent of the respondents disagreed and 8.6 per

cent of respondents strongly disagreed (table 1). The statistics indicates that majority (52.7%) of respondents were not satisfied with the amount received as pension lump sum after retirement. Public servants and retirees are not satisfied with the amount they receive as lumpsum after retirement because it is not sufficient to run their day-to-day socio-economic activities and personal development.

When looking at satisfaction with the amount received monthly, findings were as follows; 31.2 percent of the respondents were neutral, 49.5 percent disagreed and 19.4 percent of respondents strongly disagreed (table 1). The majority (49.5%) of respondents were not satisfied with the amount received monthly because it is not sufficient for retirees. Therefore, the responses indicates that, public servants and retirees are not satisfied with client care by PSSSF, they are not satisfied with the service delivered to members of PSSSF, they are not satisfied with the amount received as pension lump sum after retirement, but also, they are not satisfied with the amount received monthly.

The researcher also conducted interviews with respondents on level of satisfaction of public servants and retirees with a reformed system of retirement benefits. The findings from interviews are almost similar to administered questionnaires.

Findings from interviewees revealed that public servants and retirees are not satisfied with the reformed retirement benefits system. The below statements were quoted to show their positions regarding retirement benefits:-

“...the level of satisfaction is poor because the amount received is not sufficient for the public servants...” This statement was also, supported by another interviewee whom has this to say;

“...my children cannot go to schools because I have no enough money What we are given as retirement benefits are not sufficient to meet our basic needs, and support children go to school while there is no assurance to continuity at all...”

Furthermore, respondent reveals that;

“...as beneficiaries we are not satisfied with the reformed system of retirement because what they receive is too small to accomplish all their goals and plans in life...”

Both findings obtained through questionnaires and interviews have revealed that the level of satisfaction of public servants and retirees with the reformed system of retirement benefits is very low. This is because public servants are not satisfied with customer care by PSSSF, they are not satisfied with the service delivered to members of PSSSF, they are not satisfied with the amount received as a pension lump sum after retirement, but also, they are not satisfied with the amount received monthly.

A study by Mgeni (2022) also found that public servants are not satisfied by the reformed system of retirement benefits. Many retirees complain a lot about the newly reformed system of retirement benefits. The problem becomes much more serious when a retiree goes to PSSSF to look for his or her retirement benefit and finds that if he/she was to use the old system he could get much money than the new retirement system. This is consistent with the findings of Mgeni's survey from 2022, which also showed considerable discontent. Public officials get confused and discouraged as a result of the frustration shown by many retirees, especially when comparing the benefits of the new system with the potentially larger sums from the previous system. This brings chaos to public servants and is very discouraging.

Mwakisisile and Larsson (2021) also found that retirees and public servants are not satisfied with the system of retirement benefits. Complaints from the public on this matter raised a lot of attention, which even included several meetings between the government and the workers union through TUCTA, despite the government promised to increase the percentage from 30% to 40%. Yet complaints from public servants and retirees, is still high it is light time now something to be done to rescue the situation.

Conclusion

Since public servants and retirees are not satisfied with the reformed system of retirement but also since the reformed system of retirement has negative socio-economic effects on public servants and retirees then it is very important to look again at this system.

Recommendations

It is recommended that the government should revise the system of retirement benefits, and for that matter, the older system that was replaced with be used to cater employee's needs. It is also recommended that PSSSF should always contact public dialogue to get employees suggestions instead of using only a few representatives.

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Evaluate the Effect of Mobile Banking on Commercial Banks' Performance. A Case of Selected Commercial Banks in Dodoma Municipal

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Abstract

This study evaluates the impact of mobile banking on the performance of selected commercial banks in Dodoma Municipal, Tanzania, focusing on its role in enhancing operational efficiency and customer convenience. Dodoma, as the capital city and a rapidly growing urban area, presents a unique setting for this investigation due to its increasing demand for banking services and the presence of various commercial banks. Utilizing a descriptive research design, the study employs a quantitative research approach to analyze the correlation between mobile banking practices and bank performance. A sample of 59 participants from various banking sectors, including branch managers, operations, sales, electronic banking, IT, and customer service departments, was surveyed through structured questionnaires. Data analysis was conducted using descriptive and inferential statistics with the Statistical Package for Social Sciences (SPSS) Version 26. The findings reveal a significant positive relationship between mobile banking and bank performance, highlighting operational streamlining, reduced paperwork, and improved resource allocation as key benefits. Additionally, the study emphasizes the importance of convenience in accessing banking services anytime and anywhere, reflecting the necessity for banks to adapt to evolving customer needs. Despite these advantages, the research indicates that challenges remain in reaching underserved populations, limiting the full potential of mobile banking to improve financial inclusion. Factors such as insufficient marketing, digital literacy barriers, and limited access to mobile technology hinder progress in this area. The study advocates for enhanced investment in mobile banking infrastructure, targeted outreach initiatives, and educational programs to foster digital literacy. Furthermore, it calls for regulatory bodies to establish a supportive framework that encourages innovation while ensuring consumer protection. Overall, this research underscores the need for continued advancements in mobile banking to drive financial performance and foster a more inclusive banking environment in Dodoma Municipal.

Key Words; *Mobile Banking, Commercial Banks', Performance and Dodoma Municipal.*

1. Introduction

Mobile banking refers to the use of mobile devices, such as smartphones and tablets, to access and manage financial services and transactions provided by banks (Lama et al., 2024). It allows customers to perform a range of activities, including checking account balances, transferring funds, paying bills, applying for loans, and making payments, all through dedicated mobile applications or mobile-optimized websites (Lama et al., 2024).

In developed countries, the advent of mobile banking has transformed the banking sector by improving operational efficiency and customer experience. In the United States, mobile banking adoption grew significantly between 2017 and 2021. A report by Statista (2021) revealed that over 80% of Americans were using mobile banking by 2021, up from 62% in 2017. Banks such as JPMorgan Chase experienced a 30% increase in digital transactions between 2015 and 2020, contributing to a reduction in operational costs and improved profitability. United Kingdom, a report by the Financial Conduct Authority (FCA, 2020) showed that banks like Barclays Bank experienced a 40% increase in mobile transactions between 2018 and 2020, alongside a 25% reduction in branch visits. The shift to digital banking allowed Barclays to cut physical infrastructure costs while maintaining a strong customer base. In these countries, mobile banking has not only reduced operational costs but also increased customer satisfaction, enabling banks to serve a broader market more efficiently. However, continuous innovation and management of cybersecurity threats remain essential challenges.

In developing countries, mobile banking has had a profound impact on the banking sector, particularly in terms of financial inclusion and cost efficiency. Kenya provides a prominent example, with the success of M-Pesa, launched by Safaricom. By 2019, M-Pesa was used by over 85% of Kenya's adult population, allowing banks such as Kenya Commercial Bank (KCB) to increase their customer base through partnerships with mobile money platforms. A World Bank (2018) report noted that KCB experienced a 20% revenue increase from mobile banking services between 2017 and 2019. Despite this growth, Kenyan banks faced challenges from mobile money providers, which reduced profit margins. In Nigeria, mobile banking adoption accelerated in 2018, with leading banks like First Bank of Nigeria and Access Bank driving mobile transactions. According to the Central Bank of Nigeria (2019), mobile banking accounted for 22% of all banking transactions, contributing to revenue growth and cost reductions. However, issues related to rural internet connectivity limited its potential.

In Tanzania, mobile banking has transformed the financial landscape, particularly through the integration of mobile money platforms such as M-Pesa, Airtel Money, and Tigo Pesa. These platforms have allowed commercial banks to extend mobile banking services, improving their performance in terms of cost reduction and customer outreach. CRDB Bank serves as a prime example, with mobile banking transactions growing by 35% between 2018 and 2020, according to a report by the Bank of Tanzania (2021). CRDB's partnerships with mobile money providers have enabled the bank to expand its customer base while reducing transaction processing costs by 28%.

Similarly, NMB Bank has seen mobile banking become an integral part of its operations, accounting for 40% of total transactions in 2020. The Tanzania Communications Regulatory Authority (TCRA, 2020) reported that NMB Bank used mobile banking to extend financial services to rural populations, contributing to greater financial inclusion. Despite these successes, challenges related to mobile network infrastructure and customer awareness continue to affect the full realization of mobile banking's potential.

In Dodoma Municipal, mobile banking has reshaped the operations of commercial banks such as CRDB Bank and NMB Bank, providing new opportunities for growth while presenting challenges related to infrastructure and security. Both banks have reported significant reductions in operational costs due to mobile banking between 2018 and 2021, with mobile transactions accounting for a large portion of their total transactions. The World Bank's Global Findex Report (2021), emphasize that mobile banking plays a crucial role in enhancing financial inclusion and reducing operational costs, trends that are evident in Dodoma. The Bank of Tanzania (2021) also highlighted the role of mobile banking in expanding access to financial services in rural areas of Dodoma, where physical branches are scarce.

This study focuses on analyzing the specific impact of mobile banking on the performance of commercial banks in Dodoma Municipal, using performance metrics such as transaction volumes, operational costs, and customer outreach.

2. Literature Review

According to Mutua (2024) conducted study focusing on the Mobile banking and financial performance of commercial banks in Kenya. Using a desktop research approach, the study found that mobile banking enhances bank efficiency, profitability, and competitiveness by streamlining processes and reducing costs. However, challenges such as regulatory constraints, cybersecurity risks, and technological limitations hinder smooth adoption. The study concluded that while mobile banking is essential for improving financial performance, addressing these challenges through regulatory improvements, digital infrastructure investment, and financial literacy is necessary. Further research on mobile banking's long-term impact on financial inclusion and economic growth was also recommended.

According to Korir et al., (2023) conducted study focusing on the Mobile Banking Services, Risk Management, Firm Characteristics, and Performance of Commercial Banks in Kenya. It found that mobile banking services, such as account-to-account transfers and mobile money, significantly improve bank performance, especially when accompanied by effective risk management practices like addressing liquidity risks. While firm characteristics, such as size, did not significantly influence this relationship, the combined effect of mobile banking, risk management, and firm characteristics was found to be substantial in enhancing bank performance. The study concluded that integrating mobile banking with robust risk management strategies is crucial for maximizing

its benefits and recommended that regulators enforce strict risk management protocols to support smooth mobile banking operations.

According to Njiru et al., (2024) conducted study focusing on the branchless Banking and Financial Performance of Commercial Banks in Kenya. A correlation research design was employed, utilizing secondary data from 39 commercial banks between 2012 and 2020. Regression analysis revealed that branchless banking, particularly mobile and ATM banking, significantly improves bank performance, with financial deepening acting as a mediating factor. Regulations also played a critical moderating role, ensuring the stability of these services. The study concluded that branchless banking positively impacts bank performance and recommended further expansion of mobile and ATM banking services, enhanced financial deepening, and stronger regulatory oversight to maintain stability and innovation.

3.0 Methodology

3.1 Area of the Study

This study was conducted in Dodoma Municipal, the capital city of Tanzania and one of the fastest-growing urban areas in the country. There are three strong reasons for choosing Dodoma Municipal as the study area. First, Dodoma is experiencing rapid urbanization and economic growth, which has led to an increased demand for banking services, including mobile banking, making it an ideal location to examine its impact on bank performance. Second, the presence of numerous commercial banks in Dodoma allows for a diverse sample, providing a more comprehensive analysis of mobile banking's influence on the financial performance of these institutions. Lastly, Dodoma's strategic position as the administrative capital means that banks here serve a mix of both government and private sector clients, offering a unique opportunity to assess the effects of mobile banking in a dynamic and evolving banking environment.

3.2 Research Design

Study design refers to the systematic and structured plan or strategy formulated by researchers to guide the execution of a scientific investigation. The research employs a descriptive research design, chosen for its emphasis on providing a detailed and comprehensive account of a phenomenon or situation. This design is particularly valuable when the goal is to explore, measure, and characterize variables. Descriptive research lays the foundation for more in-depth studies and offers valuable insights for decision-making and policy formulation (Mahat et al, 2024).

3.3 Research Approach

Research approaches, according to Dubey et a., (2022) encompass the plans and procedures guiding research from broad assumptions to detailed methods of data collection, analysis, and interpretation. For this study, the quantitative research approach was selected. In order to project

results to a larger population, this strategy entails assessing the research topic to identify its prevalence.

3.4 Targeted Population

The population of the study is the total aggregation of elements sharing common characteristics that form the subject of the study (Dehalwar et al., 2023). It represents the entire group to which the study's findings are intended to be generalized. In the context of this study, the populations of this study were 70 as described in table 3.5 below:

Table 3.19: Distribution of Population

	NMB	CRDB	NBC	Total population	Sample size
Branch Manager	1	1	1	3	3
Operation Manager	4	4	3	11	8
Sales and Marketing Departments	13	11	12	36	28
Electronic banking department	11	9	8	28	22
Information technology department	6	4	3	13	10
Customer services	7	6	4	17	14
Total	42	35	31	108	85

Source: Researcher (2024)

3.5 Sample Size and Sampling Techniques

3.5.1 Sample size

In this study, sample size was 85 the researcher employs the Yamane formula to ascertain the suitable sample size from the overall population where by

$$n = \frac{N}{1 + N(e)^2}$$

n = Sample Size,

N= Total Number of Population,

95% confidence level

e = Sampling error in this study researcher use 0.05 sampling error

$$n = 108 (1+108(0.05)^2)$$

$$n = 85$$

3.5.2 Sampling strategies

According to Smith (2020), sampling procedures encompass the explicit methodologies employed by researchers to select a subset from a larger population, emphasizing a systematic approach to sampling. The chosen method for this study is Simple Random Sampling, A method that ensures every individual in a population has an equal chance of being chosen as a sample, simple random sampling is known for its straightforwardness and fairness. This technique minimizes bias by giving each person an equal opportunity to be included in the sample. Its simplicity aims to create a sample that accurately represents the population, leading to dependable outcomes for the research.

3.6 Data Collection Methods

This study employs a dual methodology, combining primary and secondary data collection methods to gather a comprehensive range of information. A questionnaire is a tool used in research to collect data and information from participants, typically through a series of questions. This method is widely utilized in research studies, surveys, and social science inquiries. The questionnaire planned for this study was structured, containing closed-ended questions with pre-defined response options, including Likert scale ratings. A documentary review entails examining and combining information from diverse sources like books, academic papers, official reports, and online resources. This approach is cost-efficient since it utilizes existing data collected by others (Muguro et al., 2024).

3.7 Data Analysis Methods

The study employs descriptive statistics in data analysis, which involves summarizing and describing key features of the dataset. This includes measures of central tendency such as mean, median, and mode, as well as measures of variability like range and standard deviation. Additionally, inferential statistics was used to make predictions or inferences about a larger population based on the sample data, utilizing techniques like regression analysis. The Statistical Package for Social Sciences (SPSS) Version 26 was utilized for data analysis, encompassing both descriptive statistics focusing on means and measures of variation, and inferential statistics including multiple linear regression analysis. The selection of these analysis methods is driven by the research objectives, the type of data collected, and the specific research questions. Combining descriptive and inferential statistics allows for a comprehensive examination of the dataset,

providing a clear snapshot of the data with descriptive statistics and enabling deeper insights, predictions, and hypothesis testing with inferential statistics (Hamed et al, 2020).

3.8 Ethical Considerations

The researcher upheld high ethical standards throughout the study by treating participants with respect and dignity, being mindful of cultural differences, and fostering an inclusive environment. Transparency was maintained with clear explanations of research methods and objectives, and participants were informed about any potential conflicts of interest. Participation was strictly voluntary, with participants able to withdraw at any time without negative consequences. Confidentiality was ensured through secure data storage and anonymization of personal information. Informed consent was obtained by providing detailed information about the study and addressing any questions. The researcher also promoted non-discrimination, ensuring fair and equal treatment for all participants, especially those from underrepresented groups (Iphofen, 2020).

4.0 Findings

4.1 Presentation of findings

4.1.1 Response rate

Questionnaires were distributed to 85 respondents, while 81 responses were received, achieving a high response rate of 95.29% and 4 responses were not received. This rate was considered adequate for the researcher to proceed with compiling the report.

Table 4.1: Response Rate

Category	Frequency	Percentage
Questionnaires distributed and returned	81	95.29
No response	4	4.71
Total	85	100

Source: Survey data (2024) Source: Field data (2024)

4.1.2 Socio - demographic characteristics

Socio-demographic characteristics involves the social and demographic attributes of a study's participants, such as age, gender, education level, occupation, and Position. These characteristics help researchers understand the composition of the sample and identify any patterns or

relationships between these attributes and the variables being studied. Analyzing socio-demographic data is important for interpreting results, as it can reveal how different population groups may be affected by or respond to various factors in the research.

Table 4.2: Socio - demographic characteristics (n=81)

Variables	Categories	Frequency	Percentage
Gender	Male	44	54.3
	Female	37	45.7
	Total	81	100.0
Age	Between 18-30 years	24	29.6
	Between 31-40 years	24	29.6
	Between 41-50 years	24	29.6
	51 Years and above	9	11.1
	Total	81	100.0
Education Qualification	Certificate	10	12.3
	Diploma	13	16.0
	Higher Diploma	16	19.8
	Degree	27	33.3
	Post Graduate	15	18.5
	Total	81	100.0

Source: Survey Data (2024)

Table 4.2 illustrates the socio-demographic characteristics of the study participants (n=81), focusing solely on the percentage distribution across gender, age, education qualification, and marital status. This analysis provides a clear understanding of the sample's composition and diversity.

Gender

The sample is slightly skewed towards males, who represent 54.3% of the participants, compared to 45.7% females. This near-equal distribution ensures a balanced perspective on gender-related dynamics within the study.

Age

The age distribution is notably even, with each of the three primary age groups—18-30 years, 31-40 years, and 41-50 years—each comprising 29.6% of the sample. This suggests that the study encompasses a wide age range, with a significant representation from young adults to those approaching middle age. The smaller proportion of participants aged 51 years and above (11.1%) highlights a lesser focus on older individuals.

Education Qualification

The educational background of the participants shows a high level of attainment. The largest group, 33.3%, holds a degree, followed by those with a higher diploma (19.8%) and post-graduate qualifications (18.5%). This indicates a well-educated sample with a robust representation of individuals possessing advanced qualifications. The relatively lower percentages for certificates (12.3%) and diplomas (16.0%) reflect a smaller but still significant portion of the sample with foundational qualifications.

Overall, the socio-demographic characteristics illustrate a diverse and well-rounded sample, providing valuable insights into the participants' gender, age, education, and marital status. This comprehensive profile is essential for understanding the context and potential influences on the study's findings.

4.1.3 Descriptive analysis

Descriptive analysis is a method used to summarize and organize data in a meaningful way, providing a clear picture of patterns and trends within a dataset. It involves calculating basic statistical measures such as frequencies, percentages, means, and standard deviations to describe the characteristics of the variables in a study. Descriptive analysis helps to present the data in an understandable format, allowing researchers to identify general trends, relationships, and potential areas for further investigation without making any inferences about the population beyond the sample.

4.1.3.1 Evaluate the effect of mobile banking on commercial banks' performance

4.2.3.2 Effect of mobile banking on commercial banks' performance

Table 4.4 Effect of mobile banking on commercial banks' performance

Statements	5 Likert Scale Responses	Frequency	Percent	Mean \pm SD
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Mobile banking enhances operational efficiency by reducing paperwork and manual processes.	Strong Disagree	1	1.2	3.53 ± .923
	Disagree	12	14.8	
	Neutral	20	24.7	
	Agree	39	48.1	
	Strong Agree	9	11.1	
	<i>Total</i>	<i>81</i>	<i>100.0</i>	
Mobile banking offers convenient access to banking services anytime, anywhere.	Strong Disagree	3	3.7	3.47 ± 1.195
	Disagree	19	23.5	
	Neutral	15	18.5	
	Agree	25	30.9	
	Strong Agree	19	23.5	
	<i>Total</i>	<i>81</i>	<i>100.0</i>	
The introduction of mobile banking enhances the accessibility of financial services for underserved populations.	Strong Disagree	5	6.2	2.89 ± 1.012
	Disagree	30	37.0	
	Neutral	16	19.8	
	Agree	29	35.8	
	Strong Agree	1	1.2	
	<i>Total</i>	<i>81</i>	<i>100.0</i>	
Mobile banking fosters financial inclusion by reaching remote and rural areas.	Strong Disagree	0	0.0	3.01 ± .733
	Disagree	21	25.9	
	Neutral	38	46.9	
	Agree	22	27.2	
	Strong Agree	0	0.0	
	<i>Total</i>	<i>81</i>	<i>100.0</i>	

Mobile banking facilitates faster and more efficient fund transfers compared to traditional methods.	Strong Disagree	15	18.5	3.16 ± 1.418
	Disagree	14	17.3	
	Neutral	11	13.6	
	Agree	25	30.9	
	Strong Agree	16	19.8	
	<i>Total</i>	<i>81</i>	<i>100.0</i>	
Banks benefit from reduced overhead costs through the adoption of mobile banking.	Strong Disagree	3	3.7	3.43 ± 1.161
	Disagree	19	23.5	
	Neutral	15	18.5	
	Agree	28	34.6	
	Strong Agree	16	19.8	
	<i>Total</i>	<i>81</i>	<i>100.0</i>	
<i>Overall Mean Score</i>				<i>3.248 ± 1.074</i>

Source: Survey data (2024)

The table 4.4 presents an analysis of the effect of mobile banking on commercial banks' performance, revealing a generally positive perception. For the statement "Mobile banking enhances operational efficiency by reducing paperwork and manual processes," the mean score of 3.53 ± 0.923 indicates a strong level of agreement (48.1% agreeing and 11.1% strongly agreeing) that mobile banking improves operational efficiency. This suggests that respondents see mobile banking as effective in streamlining processes, though there are some neutral and dissenting opinions. Similarly, the statement "Mobile banking offers convenient access to banking services anytime, anywhere" has a mean score of 3.47 ± 1.195 , reflecting a positive view of convenience, with 30.9% agreeing and 23.5% strongly agreeing. However, the wide standard deviation indicates diverse opinions on the extent of convenience offered.

On the other hand, perceptions of mobile banking's impact on financial inclusion and accessibility are more mixed. The statement "The introduction of mobile banking enhances the accessibility of financial services for underserved populations" received a mean score of 2.89 ± 1.012 , indicating a more neutral stance with a notable percentage of respondents disagreeing (37.0%). Similarly, "Mobile banking fosters financial inclusion by reaching remote and rural areas" has a mean score

of 3.01 ± 0.733 , showing moderate agreement but also significant neutrality. The statement about faster and more efficient fund transfers received a mean score of 3.16 ± 1.418 , reflecting some level of agreement but with a considerable number of strong disagreements. The overall mean score of 3.248 ± 1.074 suggests a generally favorable view of mobile banking's impact on operational efficiency and cost reduction, though opinions on its role in enhancing financial inclusion and convenience are more varied.

4.1.4 Regression analysis

Table 4.4 Coefficients of the variables

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	.680	.491		1.387	.172	1.668	.307
	Mobile banking enhances operational efficiency by reducing paperwork and manual processes.	.661	.188	.454	3.516	.001	.283	1.039
	Mobile banking offers convenient access to banking services anytime, anywhere.	.444	.117	.402	3.784	.000	.208	.681
	The introduction of mobile banking enhances the accessibility of financial services for underserved populations.	.076	.150	.061	.504	.616	.226	.377
a. Dependent Variable: Bank Performance								

Source; Field Data (2024).

Table 4.4 presents the coefficients for the variables used to evaluate the effect of mobile banking on the performance of selected commercial banks in Dodoma Municipal. The unstandardized coefficients show the impact of each independent variable on bank performance, while the standardized coefficients (Beta) reflect their relative importance. Mobile banking's ability to enhance operational efficiency by reducing paperwork and manual processes has a significant positive impact on bank performance, with a Beta value of 0.454 and a t-value of 3.516 ($p = 0.001$), indicating a strong and significant effect. Similarly, mobile banking's provision of convenient access to banking services anytime and anywhere also has a significant positive impact, with a Beta value of 0.402 and a t-value of 3.784 ($p < 0.001$), underscoring the critical role of convenience in improving bank performance. However, the introduction of mobile banking to enhance accessibility for underserved populations has an insignificant effect, with a Beta value of 0.061 and a p-value of 0.616, suggesting that this particular aspect of mobile banking has not yet significantly influenced bank performance in this context. Overall, the analysis highlights that operational efficiency and service convenience are key drivers of improved bank performance due to mobile banking.

Table 4.5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.788 ^a	.621	.597	.834

Source; Field Data (2024).

Table 4.5 provides a summary of the regression model used to assess the impact of mobile banking on the performance of selected commercial banks in Dodoma Municipal. The correlation coefficient (R) of 0.788 indicates a strong positive relationship between the independent variables and bank performance, suggesting that as mobile banking services improve, so does bank performance. The R Square value of 0.621 signifies that approximately 62.1% of the variance in bank performance can be explained by the model, which is a substantial proportion, indicating that mobile banking is a significant contributor to financial outcomes. The adjusted R Square of 0.597 further refines this estimate by accounting for the number of predictors in the model, confirming that the independent variables still explain a meaningful portion of the variance. Finally, the standard error of the estimate (0.834) provides insight into the accuracy of the predictions made by the model, with lower values indicating better precision. Overall, this model summary demonstrates that mobile banking services have a considerable effect on the performance of commercial banks, highlighting its relevance in the banking sector.

Table 4.6: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	53.640	3	17.880	25.688	.000 ^b
	Residual	32.713	81	.696		
	Total	86.353	84			

Source; Field Data (2024).

Table 4.6 presents the ANOVA (Analysis of Variance) results for the regression model assessing the impact of mobile banking on the performance of selected commercial banks in Dodoma Municipal. The regression sum of squares is 53.640, indicating the variability in bank performance that can be explained by the independent variables included in the model. The residual sum of squares is 32.713, representing the variability that is not explained by the model. With a total sum of squares of 86.353, the F-statistic calculated is 25.688, which is a measure of how well the model explains the data compared to the variance within the data itself. The significance value (Sig.) of .000 indicates that the model is statistically significant, meaning that there is a very low probability that the observed relationship occurred by chance. Therefore, this ANOVA result suggests that mobile banking services significantly contribute to variations in the performance of commercial banks, confirming the effectiveness of the model used in the study.

5.0 Discussions

5.1 Evaluate the Effect of Mobile Banking on Commercial Banks' Performance

The findings from the analysis reveal a clear and positive correlation between mobile banking and the performance of selected commercial banks in Dodoma Municipal. The results emphasize that mobile banking significantly enhances operational efficiency by minimizing paperwork and reducing manual processes. This operational streamlining is crucial for banks aiming to improve their performance, as it allows them to serve customers more effectively and allocate resources more efficiently. The significant majority of respondents who believe in the efficiency benefits of mobile banking further supports the notion that modern banking practices are integral to fostering a productive banking environment. Additionally, the convenience of accessing banking services anytime and anywhere has been recognized as another key factor contributing to improved bank performance, reinforcing the importance of adapting to customer needs in a fast-paced digital world.

Despite the positive findings, the analysis indicates that enhancing accessibility for underserved populations has not yet made a significant impact on bank performance. This suggests that while mobile banking holds the potential to improve financial inclusion, there may be barriers that need to be addressed before this potential can be fully realized. These barriers could include insufficient marketing efforts to reach these populations, lack of digital literacy, or limited access to mobile

technology in certain areas. Furthermore, the perception of mobile banking as a cost-reducing measure aligns with the growing trend of digital banking, which is increasingly viewed as a sustainable approach to managing operational costs. Overall, the findings highlight the multifaceted benefits of mobile banking, suggesting that while strides have been made in enhancing efficiency and convenience, additional efforts are required to ensure that the advantages of mobile banking are equitably distributed across all segments of the population.

6. Conclusions

In conclusion, this study underscores the significant impact of mobile banking on the performance of commercial banks in Dodoma Municipal, highlighting its vital role in enhancing operational efficiency and convenience for customers. The positive correlation between mobile banking practices and overall bank performance suggests that adopting modern banking solutions is essential for financial institutions to remain competitive in an increasingly digital and dynamic financial landscape. Furthermore, the convenience of accessing banking services anytime and anywhere has emerged as a critical factor, reinforcing the need for banks to adapt to changing customer preferences and behaviors in a fast-paced world. However, while mobile banking shows great promise for improving financial inclusion, notable challenges remain in effectively reaching underserved populations. These barriers could include issues related to digital literacy, limited access to mobile technology, and insufficient marketing efforts tailored to these communities. Addressing these obstacles is crucial for realizing the full potential of mobile banking as a tool for financial empowerment and social inclusion. Overall, the findings advocate for continued investment in mobile banking infrastructure, along with comprehensive outreach initiatives aimed at educating and engaging all segments of the population.

7. Recommendations

To enhance the positive impact of mobile banking on commercial banks' performance in Dodoma Municipal, it is recommended that commercial banks prioritize the expansion of their mobile banking services. This involves not only increasing the range of services offered through mobile platforms but also ensuring that these services are user-friendly and accessible to all customer segments. Banks should invest in developing intuitive mobile applications and platforms that cater to varying levels of digital literacy, ensuring that customers can easily navigate and utilize these services. Additionally, providing adequate customer support through various channels can enhance user experience and encourage more clients to adopt mobile banking.

Furthermore, banks should actively engage in targeted marketing campaigns aimed at raising awareness about the benefits of mobile banking, particularly among underserved populations. This could involve partnerships with local organizations, community leaders, and influencers to reach potential customers effectively. Educational initiatives, such as workshops and seminars, can also play a crucial role in improving digital literacy, ensuring that more individuals are comfortable using mobile banking services. By emphasizing the convenience, accessibility, and security of

mobile banking, banks can cultivate trust and increase customer adoption rates, ultimately driving better financial performance.

Lastly, it is essential for regulatory bodies to create a supportive framework that fosters the growth of mobile banking while ensuring consumer protection. Regulations should be designed to encourage innovation in mobile banking services while maintaining oversight to safeguard against fraud and security breaches. Collaboration between banks and regulators is crucial to developing policies that promote financial inclusion, allowing banks to implement best practices in service delivery. By nurturing an environment that encourages innovation and addresses regulatory challenges, the potential of mobile banking to enhance the financial performance of commercial banks in Dodoma Municipal can be fully realized, contributing to a more robust and inclusive financial ecosystem.

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The Relationship between Financial Capability and Quality Service Delivery in PSSSF in Dodoma Region, Tanzania

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Abstract

The study aimed to examine the relationship between financial capability and quality service delivery in PSSSF in Dodoma, Tanzania. The independent variables measured were budget allocation, financial resources, funding sources, financial management practices and investment in service. For this study, the Theory of Planned Behavior (TPB) provides a robust framework to understand the relationship between financial capability and quality service delivery at PSSSF in Dodoma. The research utilized a cross-sectional research design, enabling the collection of data from 201 employees in a single snapshot, simultaneously, at a specific moment in time. Data collection was accomplished through a questionnaire surveys. Data analysis was carried out employing multiple linear regression analysis. Results revealed significant associations between variables. The findings indicate that the overall mean score for quality service delivery at PSSSF is 3.20896, suggesting a moderate level of service delivery. The R Square value of 0.546 implies that approximately 54.6% of the variability in quality service delivery is explained by budget allocation, financial resources, funding sources, financial management practices, and investment in service. The standardized coefficients (Beta) highlight that budget allocation has the greatest impact on service quality (Beta = 0.538, $p < .001$), followed by investment in service (Beta = 0.182, $p < .001$), financial resources (Beta = 0.153, $p = .009$), and funding sources (Beta = 0.158, $p = .028$). Although financial management practices have a smaller Beta (0.198), their impact is still statistically significant ($p < .001$). The ANOVA results confirm a significant relationship ($p < .001$) between these financial factors and service quality, with an F-statistic of 46.840 indicating that the model's explained variance is considerably greater than the unexplained variance. These results underscore the critical role of financial management in enhancing service quality at PSSSF. Henceforth, Human resources departments can integrate financial literacy initiatives into employee development plans to empower staff with the skills needed to navigate financial challenges effectively. Additionally, policymakers and regulators should consider these results when formulating regulations and policies to ensure adequate financial resources and support systems are in place to sustainably improve service delivery standards.

Key words: *Financial Capability, Quality Service Delivery, Budget Allocation, Financial Resources, Funding Sources, Financial Management Practices, Investment in Service.*

1.0 Introduction

Quality service delivery in public organizations is critical for satisfying citizens' needs and expectations, fostering trust, and supporting socio-economic development (Kaibung et al., 2017). Timeliness refers to the promptness with which services delivered, ensuring that citizens receive services when needed without undue delay, which is essential for maintaining public trust and satisfaction (Alford & Yates, 2021). Efficiency involves using resources optimally to achieve desired outcomes, minimizing waste and enhancing value for taxpayers (Smith & Walker, 2022). Client satisfaction measures how well services meet users' expectations, impacting public perception and the perceived legitimacy of public organizations (Brown et al., 2023). Service accessibility indicates the ease with which all citizens, regardless of location or socio-economic status, can obtain services, promoting inclusiveness and equity (Jones et al., 2021). Finally, service affordability ensures that the costs of services are reasonable and do not pose a financial burden on citizens, thus enhancing the overall effectiveness and reach of public service delivery (Green & Miller, 2023). These indicators collectively provide a comprehensive framework for assessing and improving the quality-of-service delivery in public organizations.

In the absence of quality service delivery, individuals are likely to abandon offices or service providers, seeking alternatives that can meet their needs more effectively. This tendency can lead to a staff turnover, diminishing the productivity and organization performance (Rasul and Rogger, 2018). Consequently, with fewer clients or service users, the office's capacity to sustain itself and operate efficiently diminishes, leading to a deterioration in services provided (World Bank, 2019). This downward spiral not only affects the office's reputation and credibility but also undermines its ability to attract new clients or retain existing ones (Bardhan and Mookherjee, 2019).

Moreover, the decline in service quality can ripple through the community, impacting productivity and economic output as individuals and businesses struggle to access essential services or support (Angrist et al., 2020). Overall, the consequences of poor service delivery extend beyond immediate dissatisfaction, resulting in a broader decline in organizational performance, community well-being, and socio-economic development taxpayers (Smith & Walker, 2022).

Financial capability, defined as the capacity to manage and utilize financial resources effectively, emerges as a pivotal factor influencing quality service delivery in public organizations (Ombati et al., 2021). It encompasses budget allocation, financial resources, funding sources, financial management practices and investment in service (Gladys, 2021). Organizations with robust financial resources can invest in technology, training and resources to enhance service quality (Brown et al., 2023).

Studies worldwide have consistently demonstrated a positive association between dimensions of financial capability, including budget allocation, financial resources, funding sources, financial management practice and investment in service and service delivery outcomes (Einarsen et al., 2019; Ongena and Ravesteyn, 2020). These dimensions collectively emphasize the importance of adequate financial resources in improving service quality across different sectors and organizational settings. For instance, research by Lebron et al. (2019) on corporate performance in the United States, Choon, and Lee (2019) on service delivery outcomes in Malaysia corroborate the significance of financial capability in enhancing service quality.

Furthermore, studies by Akintayo and Babalola (2017) in Nigeria and Choge et al. (2019) in Kenya highlight similar findings within the African context, underscoring the universal relevance of financial capability in driving service delivery improvements. Consequently, by facilitating the delivery of high-quality services, financial capability not only contributes to the satisfaction of service users but also plays a pivotal role in fostering socio-economic development and enhancing the overall well-being of the population (Gladys, 2021).

In Tanzania, research underscores the pivotal role of strong financial capability in enhancing the performance of public organizations, a trend seen across Africa (Wambura, 2019; Shoo, 2021). Studies by Towo et al. (2019) highlight that larger microfinance institutions (MFIs) in Tanzania exhibit superior financial performance, which translates into improved service delivery for beneficiaries. Additionally, Mulyungi (2020) notes that robust financial management practices in Tanzanian public institutions lead to increased efficiency and effectiveness in service provision. Similarly, Nyamsogoro et al. (2021) found that enhanced financial capability in public sector organizations contributes significantly to better resource allocation and overall organizational performance. These findings are echoed by Kibiki et al. (2022), who assert that financial capability directly impacts the quality and timeliness of services delivered to the public. Collectively, these studies indicate that fostering financial capability is crucial for optimizing performance and ensuring effective service delivery within Tanzanian public organizations. Acknowledging this relationship, the Tanzanian Government has initiated various measures to enhance performance in public organizations, including public sector reforms and the consolidation of social security funds, notably amalgamating multiple funds into the Public Service Social Security Fund (PSSSF) (URT, 2019). Comprehensive reforms across public institutions, including PSSSF, involve strategies such as the establishment of Client Service Charters, conducting Service Delivery Surveys, implementing Self-Assessments, formulating Strategic Plans, and adopting Mid-Term Expenditure Frameworks. These efforts, reinforced by robust Monitoring and Evaluation systems, aim to elevate service delivery standards (URT, 2019). Additionally, mechanisms like the Open Performance Review Appraisal System (OPRAS), the Complaint Handling Mechanism (CHM), and Performance Improvement initiatives further contribute to enhancing service quality and responsiveness at PSSSF. These initiatives, combined with investments in infrastructure, capacity building, regulatory adjustments and enhancements in customer service, are designed to bolster

and support the financial capability of PSSSF while also enhancing quality of its services to the customer (URT, 2022).

Despite the aforementioned efforts, PSSSF faces significant challenges in service delivery, such as long waiting times and poor customer service, raising doubts about the effectiveness of its financial capability (URT, 2022). Employee turnover, estimated at 5%, also questions its impact on service delivery (URT, 2022). If these issues persist, public trust in PSSSF could erode, leading to legal consequences and lower service quality for beneficiaries. Beyond these, social security funds in Tanzania face broader challenges. Uncoordinated management and lack of harmonization among different funds often lead to inefficiencies and overlap in services (URT, 2022). Inadequate funding and resource allocation hamper the ability of these funds to meet their obligations consistently (Mbogoro, 2021). Additionally, outdated technological infrastructure and insufficient data management systems hinder the smooth operation and responsiveness of these funds (Komba, 2020). Governance and accountability issues further complicate the situation, as seen in irregularities and corruption cases reported in various funds (Julius, 2021). Likewise, these challenges are similar to other social security funds in Tanzania, such as the National Social Security Fund (NSSF) where similar issues of inadequate funding, poor customer service, and inefficiencies due to lack of coordination are also prevalent (NSSF, 2020). Both PSSSF and other funds like NSSF struggle with ensuring timely and effective service delivery, highlighting a systemic problem within the country's social protection framework. These issues collectively impact the overall effectiveness and reliability of social security funds in Tanzania, necessitating comprehensive reforms and strategic interventions to enhance performance and service delivery (URT, 2022).

Nonetheless, previous research in Tanzania has primarily focused on variables including space, market share, asset value (Moshi, 2020; Mwansa Kamukwamba, 2017), and the relationship between financial capability and employee retention, employee performance and satisfaction. While, similarly studies by Wambura (2019) and Shoo (2021), have explored the impact of organizational size on employee retention in the social security fund. Thus, there is inadequate of studies focusing on financial capability and quality service delivery, particularly within institutions like PSSSF in Dodoma Region. It aims to provide valuable insights that can inform strategic financial planning and management practices, ultimately enhancing the quality and efficiency of public services in Tanzania. A study on financial capability and service quality is important for ensuring satisfaction to the beneficiaries of the social fund protection. Also, this study provide a deeper understanding to policy and decision makers on budget allocations. Likewise, this study assesses the influence between financial capability and quality service delivery in Tanzanian public organizations, drawing experience in PSSSF in Dodoma Region.

The rationale for this study is to explore the impact of financial capability on quality service delivery in public organizations, particularly focusing on the PSSSF in Dodoma. This investigation

addresses a significant research gap by examining the intricate relationship between financial resources, management practices and service outcomes. Also, financial capability affects transparency and accountability in public sector operations. By studying this relationship, the study can shed light on the mechanisms that ensure funds are used effectively and transparently. Effective financial management can directly impact the quality-of-service delivery. By focusing on PSSSF in the Dodoma region, this study can pinpoint areas where improved financial capability leads to better service outcomes. This region-specific focus ensures that the findings are tailored to the local context, even if they may not be generalizable to other regions or organizations. Such specificity aids in developing targeted interventions and policies that address local needs effectively. Financial capability significantly influences overall organizational performance. The study will examine how financial practices contribute to or hinder performance metrics such as efficiency, effectiveness, and responsiveness. The insights gained from this study can guide strategic planning within PSSSF and similar organizations, highlighting areas where financial investments have the most substantial impact on service delivery.

2.0 Literature Review

2.1 Theoretical Literature Review

For this study, the Theory of Planned Behavior (TPB) provides a robust framework to understand the relationship between financial capability and quality service delivery at PSSSF in Dodoma. Developed by Icek Ajzen in 1991, TPB is rooted in the theory of reasoned action and aims to predict human behavior by considering individuals' attitudes, subjective norms, and perceived behavioral control (Ajzen, 1991). The theory posits that intentions to perform a behavior (in this case, delivering quality services) are influenced by attitudes toward the behavior, subjective norms (perceptions of others' approval or disapproval), and perceived behavioral control (perceptions of ease or difficulty in performing the behavior).

TPB's main assumptions include the idea that individuals are rational decision-makers who consider the consequences of their actions and that behavior is influenced by both internal beliefs and external factors (Ajzen, 1991). Its strengths lie in its ability to systematically integrate cognitive factors that influence behavior, offering a structured approach to understanding and predicting complex behaviors. By focusing on attitudes, norms, and perceived control, TPB provides a comprehensive framework for exploring how financial capabilities, such as budget allocation and financial management practices, influence employees' intentions and behaviors related to service delivery.

However, TPB also has limitations. It assumes that intentions accurately predict behavior, which may not always be the case in practice due to external factors or unforeseen circumstances. Additionally, the theory may oversimplify the complexity of human behavior by not fully accounting for situational or contextual influences that could impact service delivery outcomes.

Despite these weaknesses, TPB remains relevant in this study by offering a theoretical lens to examine how financial capabilities influence employees' intentions to deliver quality services at PSSSF in Dodoma. By identifying key attitudinal and control factors, the theory can inform strategies to enhance service delivery effectiveness through improved financial practices and management within the organization (Ajzen, 1991; Armitage & Conner, 2001).

2.2 Empirical Literature Review

Hamdan et al. (2019) conducted a study on the impact of financial resources capability on the provision of decentralized services in chosen counties in Kenya. Their primary objective was to investigate how financial resources influence the delivery of decentralized services in selected Kenyan counties. The study, grounded in the Resource-Based View Theory, employed a mixed research design, combining a positivist approach. Data collected through structured and open-ended questionnaires from 384 randomly selected employees across eight counties. Regression analysis results revealed a statistically significant and positive impact of financial resources on decentralized service delivery. The study concluded that financial resources play a critical role in driving projects within counties. However, it also highlighted the need for a balanced approach, noting that without effective mechanisms for deployment, financial resources alone might not lead to progress. Thus, the study recommended that County Governments should provide both financial resources and organizational support to enhance the delivery of county services.

M'nyiri (2018) conducted a study examining the effect of financial capability on service delivery in public health facilities in Nakuru East Sub-County. The research utilized a descriptive survey design and involved 211 finance and management staff from the mentioned facilities as the study population. A sample of 68 respondents selected using purposeful and stratified random sampling techniques. Data collected through a structured questionnaire, which was pilot-tested for validity and reliability. Descriptive and inferential analyses conducted using the Statistical Package for Social Sciences Version 24. The study found a positive, moderately strong, and statistically significant relationship between financial accountability and service delivery. Specifically, the financial management practice under study explained 39.9% of the variance in service delivery. The study concluded that financial accountability significantly influences the delivery of health services. Public health facilities advised to implement effective and reliable accountability mechanisms, financial controls, internal controls and audit trails to improve service delivery.

Piatti-Fünfkirchen and Schneider (2018) conducted a study examining the Role of Public Financial Capability and Management in Health Service Delivery in Tanzania and Zambia. The article emphasizes the significant impact of how organizations manage resources throughout the budget cycle on health policy outcomes and the achievement of societal objectives, including efficiency, equity, quality and accountability in Government services. While previous research has shown a positive correlation between health service delivery outcome and effective public financial management, the precise mechanisms by which public financial management influences service

delivery have not been thoroughly explored. This article addresses this gap by mapping the three stages of the budget cycle to commonly used performance criteria in health service delivery and applying this framework to the experiences of Tanzania and Zambia. The findings reveal several challenges, including inflexibility in responding to unexpected demand for healthcare, misalignment between budgeting and planning, fragmented funding sources, stringent internal controls, inadequate budget allocation resulting in arrears and a budget evaluation system overly focused on compliance, while overlooking issues of equity, quality, and efficiency in service delivery.

In the Tanzanian context, empirical studies have primarily focused on examining challenges facing service delivery in the public sector, as highlighted by Wambura (2019) and Shoo (2021). However, there has been a notable gap in research regarding the influence of financial capability (budget allocation, financial resources, funding sources, financial management practices, and investment in service) on quality service delivery, leaving an empirical void. Therefore, there is a pressing need for additional studies that encompass a broader geographic range to develop a more comprehensive understanding of how financial capability impacts service delivery outcomes. By addressing this gap, researchers can contribute to the advancement of knowledge in this critical area and provide valuable insights for policymakers and practitioners aiming to enhance service delivery in Tanzania.

3.0 Methodology

3.1 Research Design and Setting

The study was conducted at the Public Service Social Security Fund (PSSSF) office in Dodoma, Tanzania, using a cross-sectional design. This site was strategically selected due to Dodoma's status as the capital city and administrative hub, which enhances the relevance and generalizability of findings related to financial capability and service delivery. Dodoma has seen a significant increase in public service activities and infrastructure development, making it an ideal setting for this study (NBS, 2022). According to recent statistics, the PSSSF in Dodoma serves a large proportion of public service employees, with over 50,000 registered members (PSSSF, 2023). This high concentration of beneficiaries provides a robust sample for examining how financial capability influences the quality-of-service delivery. Empirical evidence suggests that regions with higher administrative activity, like Dodoma, are critical for understanding broader trends in public service efficacy (Mwakyusa, 2021). By focusing on this region, the study aims to capture a comprehensive snapshot of the relationship between financial capability and service delivery at a significant organizational nexus.

3.2 Targeted Population and Sample Size

The target population for this study comprised all management personnel and employees stationed at PSSSF offices within the Dodoma region, totalling 220 individuals as per the latest available

data (URT, 2023). From this pool, a sample size of 201 employees selected for participation in the research. The sample size for this study was determined using Yamane's (1967) formula, which ensures that the sample size is proportionate to the population size. This method balances feasibility and statistical validity by providing a sample that is large enough to yield reliable results without being unnecessarily large or resource-intensive. Yamane's formula is widely used because it accounts for the desired confidence level and the acceptable margin of error, making it a robust tool for determining an appropriate sample size. By using this formula, the study aims to maintain a high level of accuracy and representativeness, ensuring that the findings are both statistically significant and practical for informing policy and decision-making. The formula is provided as;

$$n = N / 1 + Ne^2$$

Where:

n = Sample size needed

N = Total population size of 220

e = Margin of error (0.02)

Hence,

$$n = 220 / 1 + 220(0.02^2)$$

$$n = 220 / (1 + 220 * 0.0004)$$

$$n = 220 / (1 + 0.088)$$

$$n = 220 / 1.088$$

$$n = 201$$

Therefore, sample size was 201 employees

3.3 Sampling Procedures

The sampling procedures for this study utilized simple random sampling to ensure each individual within the target population had an equal chance of being selected, thereby minimizing selection bias and enhancing the representativeness of the sample. The target population consisted of 220 management personnel and employees at the PSSSF offices in Dodoma. A sampling frame was constructed, listing all eligible individuals, and random numbers were generated to select 201 participants from this list. This method was chosen due to its simplicity and effectiveness in achieving a representative sample, crucial for accurately assessing the relationship between financial capability and quality service delivery (Creswell, 2014).

3.4 Data Collection Methods

The primary data collection method for this study was a questionnaire survey. This involved the distribution of structured questionnaires to a sample of 201 employees selected through simple random sampling. The questionnaires were designed to gather information on both financial capability and perceived quality of service delivery. The survey targeted employees across different departments within the PSSSF in Dodoma, ensuring a diverse range of perspectives on the research topic. The questionnaire consisted of closed-ended questions with Likert scale responses to capture the insights and nuanced views on the study variables.

3.5 Variable Measurements and Data Analysis

3.5.1 Variable Measurements

The study measured financial capability, the independent variable, through indicators such as budget allocation, financial resources, funding sources, financial management practices, and investment in services. Quality service delivery, the dependent variable, was assessed using indicators like timeliness, efficiency, client satisfaction, service accessibility and service affordability. Both variables were measured using a five-point Likert scale, ranging from 1 (strongly agree) to 5 (strongly disagree), to capture respondents' perceptions accurately.

Table 3.1 Variable Measurements

Variable	Measurement
Financial Capability (Independent Variable)	Five – Point Likert Scale (1 = Strongly agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly disagree)
<ul style="list-style-type: none"> Budget Allocation, Financial Resources, Funding Sources, Financial Management Practices and Investment in Service 	
Quality Service Delivery (Dependent Variable)	Five – Point Likert Scale (1 = Strongly agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly disagree)
<ul style="list-style-type: none"> Timeliness Efficiency Client satisfaction Service Accessibility Service Affordability 	

Source: Researcher (2024)

3.5.2 Data Analysis

The multiple linear regression analysis used to test the significant relationship between independent (financial capability) and dependent variable (quality service delivery). The following presents is the Multiple linear regression equation that was utilized

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

Where:

- Y is the outcome variable (Quality Service Delivery).
- X1, X2, X3, X4, X5 are the predictor variables (Budget Allocation, Financial Resources, Funding Sources, Financial Management Practices, and Investment in Service).
- β_0 is the intercept (the value of Y when all predictors are zero).
- $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ are the regression coefficients (the change in Y associated with a one-unit change in the corresponding predictor, holding all other predictors constant).
- ε is the error term (the difference between the predicted value of Y and the actual value of Y).

3.6 Validity and Reliability of Data

A preliminary investigation, known as a pilot study, undertaken to ensure the research's validity by testing the research instruments with a small group of participants beforehand. This initial phase aimed to verify that the instruments accurately measured the intended variables. Within this study, data reliability was assessed using the Cronbach's Alpha test, chosen for its ability to identify and eliminate unreliable constructs before progressing to more comprehensive research. The reliability results, as presented in Table 3.2, demonstrate strong internal consistency across the variables measured in this study. Financial Capability, with a Cronbach's alpha of 0.875, indicates a high level of reliability. Timeliness and Service Accessibility also exhibit strong reliability, with Cronbach's alpha values of 0.854 and 0.876, respectively. Efficiency and Service Affordability show acceptable reliability, with Cronbach's alpha values of 0.798 and 0.799. Notably, Client Satisfaction has the highest reliability, with a Cronbach's alpha of 0.980, indicating excellent internal consistency. These results suggest that the items used to measure each variable are consistently reliable, providing confidence in the study's measurement tools.

Table 3.2 Cronbach's Alpha Correlation Matrix

Variable	Number of items	Cronbach alpha
Financial Capability	5	0.875
Timeliness	5	0.854

Efficiency	5	0.798
Client satisfaction	5	0.980
Service Accessibility	5	0.876
Service Affordability	5	0.799

3.7 Ethical Consideration

To uphold ethical standards in this study, several measures implemented. Initially, informed consent diligently secured from all participants, offering comprehensive details regarding the study's objectives, methodologies, potential risks, benefits and assurances of confidentiality. This process emphasized respect for participants' autonomy and voluntary engagement. Additionally, stringent measures taken to safeguard participants' identities and personal data through robust confidentiality and data protection protocols. Lastly, the findings reported transparently and accurately, ensuring that confidentiality remained paramount by avoiding the disclosure of any personally identifiable information. These ethical considerations were fundamental in preserving the integrity of the research and upholding the rights and well-being of the participants involved.

4.0 Results

In this study, descriptive statistics were employed to summarize the key metrics such as minimum, maximum, mean, and standard deviation for variables related to financial capability and service delivery quality at PSSSF. These statistics provided a clear quantitative snapshot of the data distribution and variability among participants. Scores falling between 1.00 and 2.00 are categorized as low, indicating areas where performance or satisfaction is notably below optimal levels. Scores ranging from 2.01 to 3.99 are classified as moderate, representing a satisfactory but potentially improvable range of performance. On the higher end of the scale, scores from 4.00 to 5.00 indicate high performance or satisfaction, showcasing areas where practices or services are perceived positively and effectively meet expectations.

Additionally, multiple linear regression analysis was utilized to explore the relationships between predictor variables (such as financial capability metrics) and the outcome variables (such as service delivery quality). This method allowed for the examination of how changes in financial capability metrics influence service delivery quality, while controlling for other relevant factors.

4.1 Descriptive Statistics

4.1.1 Descriptive Statistics Results for Financial Capability at PSSSF

The descriptive statistics results for financial capability at PSSSF as presented in Table 4.6 below reveals that, the variable with the highest mean score is "Investment In Service" ($M = 4.3433$, $SD = 0.89809$), followed by "Financial Management Practices" ($M = 4.3234$, $SD = 0.91099$), "Funding

Sources" ($M = 4.2438$, $SD = 1.01256$), "Budget Allocation" ($M = 3.9652$, $SD = 1.20987$), and "Financial Resources" ($M = 3.9154$, $SD = 1.30300$). The overall mean for financial capability across all aspects is approximately 4.15822. These findings suggest that PSSSF generally demonstrates a strong financial capability, particularly in investment in services and financial management practices. However, there may be room for improvement in budget allocation and financial resource management. Enhancing financial capability across all aspects can potentially lead to improved quality service delivery at PSSSF, ensuring efficient allocation of resources and effective financial management practices to support service provision.

To sum up, the descriptive statistics for financial capability at PSSSF indicate that the organization performs strongly in several key areas. Specifically, "Investment in Service" and "Financial Management Practices" received the highest mean scores, suggesting robust capabilities in these domains. However, areas like "Budget Allocation" and "Financial Resources" show lower mean scores, indicating potential areas for improvement. Overall, the organization's average financial capability score is relatively high, highlighting its effective management of investments and financial practices. Strengthening budget allocation and financial resource management could further enhance PSSSF's ability to deliver quality services efficiently, ensuring optimal use of resources to support service provision effectively.

Table 4.1 Financial Capability at PSSSF (n = 201)

Aspect	minimum	maximum	mean	STD
Budget Allocation	1.00	5.00	3.9652	1.20987
Financial Resources	1.00	5.00	3.9154	1.30300
Funding Sources	1.00	5.00	4.2438	1.01256
Financial Management Practices	1.00	5.00	4.3234	.91099
Investment In Service	1.00	5.00	4.3433	.89809

Source: Field Data (2024)

4.1.2 Descriptive Statistics Results for Quality Service Delivery At PSSSF

The descriptive statistics for quality service delivery at PSSSF, presented in Table 4.2, illustrate varying performance across different aspects. Service Affordability received the highest mean score ($M = 4.3234$, $SD = 0.82456$), indicating strong affordability of services provided. Client satisfaction follows with a mean score of 3.4179 ($SD = 1.38726$), highlighting relatively positive feedback from clients. Service Accessibility ($M = 3.1741$, $SD = 1.44379$) and Timeliness ($M = 2.7264$, $SD = 1.56517$) show moderate scores, suggesting room for improvement in these areas.

Efficiency recorded the lowest mean score at 2.4030 (SD = 1.40776), indicating potential inefficiencies that may need addressing. The overall mean for quality service delivery across all aspects is 3.20896, indicating a moderate level of service delivery at PSSSF.

Scores falling between 1.00 and 2.00 are categorized as low, indicating areas where performance or satisfaction is notably below optimal levels. Scores ranging from 2.01 to 3.99 are classified as moderate, representing a satisfactory but potentially improvable range of performance. On the higher end of the scale, scores from 4.00 to 5.00 indicate high performance or satisfaction, showcasing areas where practices or services are perceived positively and effectively meet expectations. Henceforth, these findings suggest that while PSSSF generally provides affordable services and maintains reasonable client satisfaction levels, there are opportunities to enhance service accessibility, timeliness, and efficiency. Addressing these areas could further improve overall service delivery quality, ensuring better outcomes and satisfaction among service users.

Table 4.2 Quality Service Delivery at PSSSF (n = 201)

s/n	Aspect	minimum	maximum	mean	STD
1	Timeliness	1.00	5.00	2.7264	1.56517
2	Efficiency	1.00	5.00	2.4030	1.40776
3	Client satisfaction	1.00	5.00	3.4179	1.38726
4	Service Accessibility	1.00	5.00	3.1741	1.44379
5	Service Affordability	1.00	5.00	4.3234	.82456
OVERALL MEAN = 3.20896.					

Source: Field Data (2024)

To sum up, the descriptive statistics reveal that service aspects at PSSSF vary in performance across different dimensions. Service Affordability stands out with a high mean score of 4.3234, indicating strong affordability of services, which contributes to its categorization as high satisfaction. Client satisfaction follows with a mean score of 3.4179, placing it in the moderate satisfaction category, showing areas of improvement. Service Accessibility and Timeliness both exhibit moderate mean scores of 3.1741 and 2.7264, respectively, suggesting areas needing enhancement to achieve higher satisfaction levels. Efficiency records the lowest mean score at 2.4030, categorizing it as low satisfaction, signaling significant inefficiencies requiring immediate attention. The overall mean for quality service delivery across all aspects is 3.20896, indicating a moderate level of service performance at PSSSF. Addressing these findings through targeted improvements in accessibility, timeliness, and efficiency could elevate overall service delivery, ensuring higher satisfaction and better outcomes for service users.

4.2 Tests for assumptions of Multiple Linear Regression

4.2.1 Correlation

The correlation matrix reveals strong positive associations among various financial and service delivery factors, all statistically significant at the 0.05 level unless stated otherwise. Quality Service Delivery (QSD) displays robust correlations with Financial Resources ($r = .675$, $p < .001$), Investment in Service ($r = .565$, $p < .001$), and moderate correlations with Funding Sources ($r = .494$, $p < .001$), Budget Allocation ($r = .338$, $p < .001$), and Financial Management Practices ($r = .223$, $p = .001$). Budget Allocation shows moderate correlations with Financial Resources ($r = .252$, $p < .001$), Funding Sources ($r = .313$, $p < .001$), and Financial Management Practices ($r = .243$, $p = .001$), while exhibiting a weak, significant correlation with Investment in Service ($r = .134$, $p = .050$). Financial Resources demonstrate strong correlations with Investment in Service ($r = .734$, $p < .001$) and Funding Sources ($r = .509$, $p < .001$), and moderate correlations with Financial Management Practices ($r = .519$, $p < .001$). Funding Sources exhibit moderate correlations with Financial Management Practices ($r = .260$, $p < .001$) and Investment in Service ($r = .393$, $p < .001$). Financial Management Practices also moderately correlate with Investment in Service ($r = .366$, $p < .001$). These findings suggest that the independent variables significantly contribute to the enhancement of service quality.

Table 4.3 Correlations

Correlations							
		Quality Service Delivery	Budget allocation	Financial resources	Funding sources	Financial management practices	Investment in service
Quality Service Delivery	Pearson Correlation	1	.338**	.675**	.494**	.223**	.565**
	Sig. (2-tailed)		.000	.000	.000	.001	.000
	N	201	201	201	201	201	201
Budget allocation	Pearson Correlation	.338**	1	.252**	.313**	.243**	.134

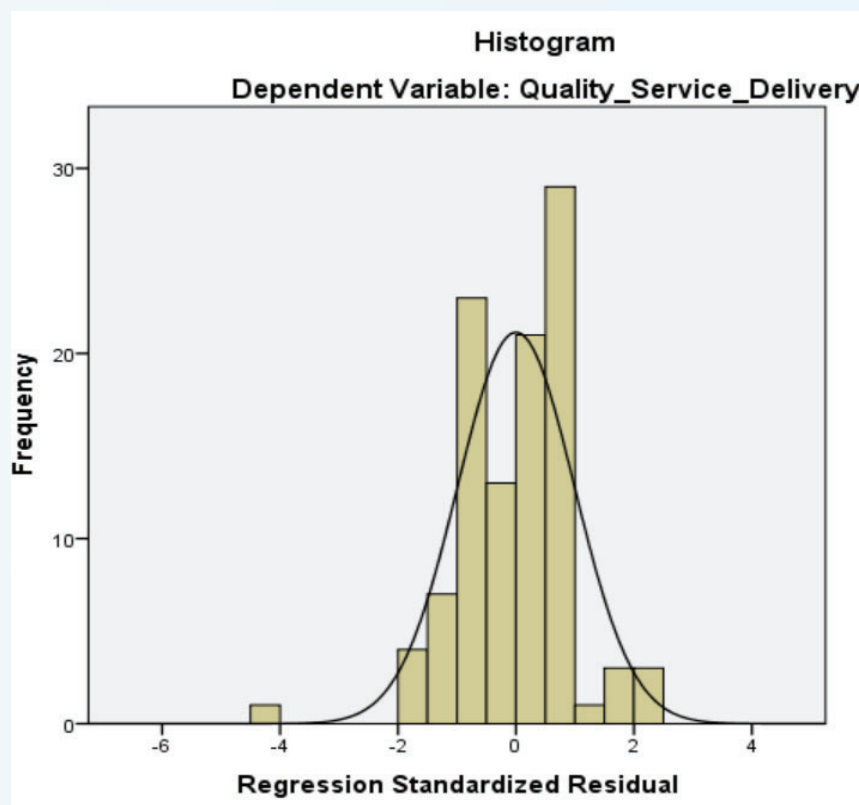
	Sig. (2-tailed)	.000		.000	.000	.001	.050
	N	201	201	201	201	201	201
Financial resources	Pearson Correlation	.675**	.252**	1	.509**	.519**	.734**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	201	201	201	201	201	201
Funding sources	Pearson Correlation	.494**	.313**	.509**	1	.260**	.393**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
	N	201	201	201	201	201	201
Financial management practices	Pearson Correlation	.223**	.243**	.519**	.260**	1	.366**
	Sig. (2-tailed)	.001	.001	.000	.000		.000
	N	201	201	201	201	201	201
Investment in service	Pearson Correlation	.565**	.134	.734**	.393**	.366**	1
	Sig. (2-tailed)	.000	.050	.000	.000	.000	
	N	201	201	201	201	201	201
**. Correlation is significant at the 0.01 level (2-tailed).							

4.2.2 Normality

The histogram in Figure 4.1 illustrates the distribution of regression standardized residuals. The residuals closely follow a bell-shaped curve, indicating they are approximately normally distributed. This is further supported by the superimposed normal curve, which aligns well with the observed data. The symmetry of the histogram around zero suggests there is no significant bias in the model's predictions. The presence of a few minor outliers is not uncommon and does not invalidate the normality assumption. Overall, the histogram supports the assumption of normality

of residuals, which is a crucial requirement for the validity of multiple linear regression analysis. This suggests the model is a good fit for the data and its predictions are reliable.

Figure 4.1 Normality



4.2.3 Linearity

The Shapiro-Wilk test results, as shown in Table 4.2, indicate that the assumption of normality is met for all variables included in the analysis. This is evident from the test statistic (W) values being close to 1 and the p-values being greater than the commonly used significance level of 0.05. These findings suggest that the data for each variable are consistent with a normal distribution, which supports the validity of using parametric statistical tests that rely on this assumption.

Table 4.4 Shapiro Wilk Test

Variable	Test Statistic (W)	p-value	Normality Assumption Met
Quality Service Delivery	0.990849	0.266523	Yes

Budget Allocation	0.988152	0.147439	Yes
Financial Resources	0.991089	0.285227	Yes
Funding Sources	0.99268	0.412864	Yes
Financial Management Practices	0.988492	0.163304	Yes
Investment in Service	0.99389	0.587975	Yes

4.2.4 Multicollinearity

Table 4.3 presents the Variance Inflation Factor (VIF) for each predictor variable in the regression model. The VIF values for all variables are below the commonly accepted threshold of 5, and even below the more conservative threshold of 2.5. This indicates that there is no significant multicollinearity among the predictor variables. The tolerance values, which are the inverse of the VIF, further support this conclusion. The tolerance values for all variables are well above 0.1, signifying that each variable contributes unique information to the model and is not redundant with other predictors. Therefore, we can conclude that multicollinearity is not a concern in this regression model.

Table 4.5 Variance Inflation Factor Matrix (VIF)

Variable	Tolerance	VIF
Budget allocation	.344	2.904
Financial resources	.702	1.425
Funding sources	.457	2.188
Financial management practices	.716	1.396
Investment in service	.867	1.154

4.2.4 Outliers Results

4.2.4.1 Outlier Results for Financial Capability

The analysis of outlier results for financial capability, as shown in Table 4.6, indicates that there are no significant outliers in the data. The mean financial capability is 1.7861 with a standard error of .02900, and the 95% confidence interval for the mean ranges from 1.7289 to 1.8432. The 5% trimmed mean is 1.8179, and the median value is 2.0000, which is very close to the mean, suggesting symmetry in the distribution. The variance is .169 and the standard deviation is .41110, indicating moderate variability. The minimum and maximum values are 1.00 and 2.00, respectively, with a range of 1.00 and an interquartile range of .00, further emphasizing the limited spread in the data. The skewness value of -1.406 with a standard error of .172 indicates a slight left skew, while the kurtosis value of -.024 with a standard error of .341 indicates that the distribution is approximately normal, confirming the absence of significant outliers.

Table 4.6 Outlier Results for Financial Capability

			Statistic	Std. Error
Financial Capability	Mean		1.7861	.02900
	95% Confidence Interval for Mean	Lower Bound	1.7289	
		Upper Bound	1.8432	
	5% Trimmed Mean		1.8179	
	Median		2.0000	
	Variance		.169	
	Std. Deviation		.41110	
	Minimum		1.00	
	Maximum		2.00	
	Range		1.00	
	Interquartile Range		.00	
	Skewness		-1.406	.172

	Kurtosis	-.024	.341
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4.2.4.2 Outlier Results for Quality Service Delivery

The analysis of outlier results for quality service delivery, as presented in Table 4.7, indicates the absence of significant outliers in the dataset. The mean value for quality service delivery is 1.2388 with a standard error of .03015, and the 95% confidence interval for the mean ranges from 1.1794 to 1.2983. The 5% trimmed mean is 1.2098, suggesting that extreme values do not significantly impact the mean. The median value is 1.0000, which is close to the mean, indicating a symmetric distribution. The variance is .183 and the standard deviation is .42742, demonstrating moderate variability. Both the minimum and maximum values are 1.00 and 2.00, respectively, resulting in a range of 1.00 and an interquartile range of .00, indicating limited spread in the data. The skewness value of 1.234 with a standard error of .172 suggests a slight right skew, while the kurtosis value of -.481 with a standard error of .341 indicates a distribution that is slightly flatter than normal. Overall, these statistics confirm that there are no significant outliers in the quality service delivery data.

Table 4.7 Outlier Results for Quality Service Delivery

			Statistic	Std. Error
Quality Service Delivery	Mean		1.2388	.03015
	95% Confidence Interval for Mean	Lower Bound	1.1794	
		Upper Bound	1.2983	
	5% Trimmed Mean		1.2098	
	Median		1.0000	
	Variance		.183	
	Std. Deviation		.42742	
	Minimum		1.00	

	Maximum	2.00	
	Range	1.00	
	Interquartile Range	.00	
	Skewness	1.234	.172
	Kurtosis	-.481	.341

4.3.5 Model Fit Results

4.3.5.1 Omnibus Tests of Model Coefficient Results

The results from the Omnibus Tests of Model Coefficient in Table 4.8 demonstrate a good model fit. The Chi-square value for the step, block, and model is 99.664, with 5 degrees of freedom, and a significance level (Sig.) of .000. This indicates that the model is statistically significant and that the predictors collectively provide a good fit to the data, significantly improving the prediction of the outcome variable, quality service delivery. The p-value being less than 0.05 confirms that the inclusion of the predictor variables (budget allocation, financial resources, funding sources, financial management practices, and investment in service) substantially contributes to the model's effectiveness in predicting quality service delivery.

Table 4.8 Omnibus Tests of Model Coefficient Results

		Chi-square	df	Sig.
Step 1	Step	99.664	5	.000
	Block	99.664	5	.000
	Model	99.664	5	.000

4.3.5.2 -2 Log likelihood, Cox & Snell R Square and Nagelkerke R Square Results

The results presented in Table 4.9, which include the -2 Log Likelihood, Cox & Snell R Square, and Nagelkerke R Square values, indicate a good model fit. The -2 Log Likelihood value of 121.316 signifies a strong fit between the model and the data. The Cox & Snell R Square value of .391 suggests that approximately 39.1% of the variance in the dependent variable (quality service delivery) is explained by the predictors. The Nagelkerke R Square value of .586, which adjusts the Cox & Snell R Square to provide a more interpretable metric, indicates that up to 58.6% of the

variability in quality service delivery is accounted for by the model. These values collectively demonstrate that the model has a strong explanatory power and effectively captures the relationship between financial capability predictors and quality service delivery.

Table 4.9 -2 Log likelihood, Cox & Snell R Square and Nagelkerke R Square Results

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	121.316 ^a	.391	.586

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

4.3.5.3 Hosmer and Lemeshow Test Results

The Hosmer and Lemeshow Test results presented in Table 4.10 indicate a good fit for the model. The Chi-square value is .800 with 3 degrees of freedom, and the significance level (Sig.) is .849. A p-value greater than 0.05 suggests that there is no significant difference between the observed and predicted values, indicating that the model fits the data well. Therefore, the results confirm that the logistic regression model adequately describes the relationship between the predictors and the dependent variable, quality service delivery.

Table 4.10 Hosmer and Lemeshow Test Results

Step	Chi-square	df	Sig.
1	.800	3	.849

4.3.5.4 KMO and Bartlett's Test

The results of the Kaiser-Meyer-Olkin (KMO) and Bartlett's Test presented in Table 4.11 demonstrate the adequacy and suitability of the data for factor analysis. The KMO Measure of Sampling Adequacy is .788, which exceeds the commonly recommended threshold of 0.6, indicating that the sample size is sufficient and the variables are adequately correlated for factor analysis. Additionally, Bartlett's Test of Sphericity shows an approximate Chi-Square value of 496.255 with 15 degrees of freedom and a significance level (Sig.) of .000. This p-value being less than 0.05 confirms that the correlations between the variables are significantly different from zero, further justifying the appropriateness of conducting factor analysis. Therefore, these results

indicate that the dataset is suitable for factor analysis, demonstrating good sampling adequacy and significant correlations among the variables.

Table 4.11 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.788
Bartlett's Test of Sphericity	Approx. Chi-Square	496.255
	df	15
	Sig.	.000

4.3 Findings on the relationship between financial capability and quality service delivery at PSSSF in Dodoma

The study focused on evaluating the substantial regression between the predictor (financial capability) and the outcome variable (quality service delivery). The connection examined through the application of multiple linear regression analysis.

Table 4.12 Hypothesis to be tested

S/N	Hypothesis	Data collection Tools
1	There is a significant relationship between budget allocation and quality service delivery at PSSSF	Questionnaires
2	There is a significant relationship between financial resources and quality service delivery at PSSSF	Questionnaires
3	There is a significant relationship between funding sources and quality service delivery at PSSSF	Questionnaires
4	There is a significant relationship between financial management practices and quality service delivery at PSSSF	Questionnaires
5	There is a significant relationship between investment in service and quality service delivery at PSSSF	Questionnaires

The study findings presented below;

a) Model Summary Results

The multiple linear regression analysis results are summarized in Table 4.13. The model indicates a substantial regression between the predictor variable (financial capability) and the outcome variable (quality service delivery). The model summary reveals an R Square value of .546, which suggests that approximately 54.6% of the variability in quality service delivery can be explained by the combined effect of budget allocation, financial resources, funding sources, financial management practices, and investment in service.

Table 4.13 Model Summary

Model Summary ^b									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.739 ^a	.546	.534	.29177	.546	46.840	5	195	.000
a. Predictors: (Constant), budget allocation, financial resources, funding sources, financial management practices, investment in service									
b. Dependent Variable: Quality Service Delivery									

b) Coefficients

The standardized coefficients (Beta) reveal the substantial impact of all financial factors on service quality, considering their different scales. Budget allocation demonstrates the greatest influence (Beta = 0.538, $p < .001$), suggesting that a one standard deviation increase in budget allocation leads to a significant 0.538 standard deviation increase in service quality. Investment in service is the second most impactful predictor (Beta = 0.182, $p < .001$), followed closely by financial resources (Beta = 0.153, $p = .009$) and funding sources (Beta = 0.158, $p = .028$). While financial management practices have a relatively smaller standardized coefficient (Beta = 0.198), their impact remains statistically significant ($p < .001$), highlighting their importance in conjunction

with other financial aspects. Overall, these findings emphasize the substantial and positive role that all examined financial factors play in enhancing service quality (Table 4.14).

Table 4.14 Coefficients Results

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.701	.283		6.003	.000	1.142	2.260
	Budget allocation	.560	.086	.538	6.544	.000	.728	.391
	Financial resources	.174	.066	.153	2.651	.009	.044	.303
	Funding sources	.153	.069	.158	2.215	.028	.017	.289
	Financial management practices	.311	.090	.198	3.466	.001	.134	.489
	Investment in service	.103	.029	.182	3.502	.001	.161	.045
a. Dependent Variable: Quality Service Delivery								

c) ANOVA

The ANOVA table reveals a statistically significant ($p < .001$) relationship between the set of predictor variables (budget allocation, financial resources, funding sources, financial management practices, and investment in service) and the quality-of-service delivery. The F-statistic of 46.840 indicates that the explained variance (19.937) due to the regression model is significantly greater than the unexplained variance (16.600) attributed to error or other factors. This strong association

suggests that the combined effect of the predictor variables substantially influences the quality-of-service delivery (Table 4.15).

Table 4.15 ANOVA Results

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19.937	5	3.987	46.840	.000 ^b
	Residual	16.600	195	.085		
	Total	36.537	200			
a. Dependent Variable: Quality Service Delivery						
b. Predictors: (Constant), budget allocation, financial resources, funding sources, financial management practices, investment in service						

4.4 Summary of Multiple Linear Regression Results

The multiple linear regression analysis provided valuable insights into the relationships between financial capability and quality service delivery at PSSSF, confirming the acceptance of hypotheses regarding budget allocation, financial resources, funding sources, and investment in service. Specifically, higher levels of budget allocation, financial resources, funding sources financial management practices, and investment in service found to be significantly associated with improved quality service delivery. These results underscore the importance of strategic resource allocation and investment decisions in enhancing quality service delivery outcomes at PSSSF (Table 4.16).

Table 4.16 Hypothesis Tested

S/N	Hypothesis	Results
1	There is a significant relationship between budget allocation and quality service delivery at PSSSF	Accepted
2	There is a significant relationship between financial resources and quality service delivery at PSSSF	Accepted

3	There is a significant relationship between funding sources and quality service delivery at PSSSF	Accepted
4	There is a significant relationship between financial management practices and quality service delivery at PSSSF	Accepted
5	There is a significant relationship between investment in service and quality service delivery at PSSSF	Accepted

5.0 Discussion

The findings of the study on the role of financial capability on quality service delivery at PSSSF demonstrate a significant relationship between budget allocation, financial resources, funding sources, and investment in service quality delivery. These results align with and complement insights from previous studies, such as those by Hamdan et al. (2019) and Piatti-Fünfkirchen and Schneider (2018), as well as more recent research.

In the study by Hamdan et al. (2019), participants highlighted the crucial role of financial capability in enhancing service quality at PSSSF, resonating with their conclusion that financial resources have a statistically significant and positive impact on the delivery of decentralized services in selected Kenyan counties. Both studies underscore the pivotal role of financial capability in driving projects and service delivery. Hamdan et al. (2019) emphasize that merely having financial resources is not sufficient; effective mechanisms for their deployment are equally vital. This echoes the implication that financial capability should be complemented with strategic and efficient financial management practices, ensuring the optimal utilization of resources for service enhancement.

Piatti-Fünfkirchen and Schneider (2018) provide a broader perspective on public financial capability and management in the context of health service delivery. While their focus is on the health sector in Tanzania and Zambia, the overall theme aligns with the findings at PSSSF, emphasizing the intricate relationship between financial management practices and service delivery outcomes. Challenges identified in the Piatti-Fünfkirchen and Schneider (2018) study, such as inflexibility, misalignment, fragmented funding sources, and inadequate budget allocation, resonate with the importance of effective financial capability discussed in the study at PSSSF.

Recent studies continue to support these findings and provide further justification. For instance, a study by Zhang et al. (2021) on financial management practices in public service organizations found that effective budget management and financial oversight directly correlate with improved service delivery outcomes. The study highlighted the importance of adaptive financial strategies that can respond to changing service demands and the necessity of integrating financial planning with operational objectives to achieve service excellence.

Additionally, a report by the World Bank (2022) on financial capability in public sector organizations highlighted the need for comprehensive financial management systems that promote transparency, accountability, and strategic resource allocation. The report noted that organizations with robust financial management practices tend to have better service delivery outcomes, as they can effectively channel resources towards priority areas and respond to emerging needs.

Another relevant study by Smith et al. (2023) examined the impact of financial capability on service delivery in the education sector. The study concluded that schools with higher financial capability, characterized by strategic budget allocation and efficient resource management, achieved better educational outcomes and higher levels of student satisfaction. This underscores the generalizability of the findings across different sectors, reinforcing the notion that financial capability is a critical determinant of service quality.

Collectively, these studies emphasize the need for organizations, including PSSSF, to not only possess financial capability but also to implement strategic financial management practices. A balanced approach that combines financial resources with efficient deployment mechanisms is crucial. Furthermore, aligning budgeting and planning, maintaining flexibility to respond to unexpected demands, and implementing a holistic evaluation system that considers equity, quality, and efficiency are essential for optimizing the impact of financial capability on service delivery. These insights offer valuable considerations for PSSSF and similar organizations in enhancing the effectiveness of their financial capability for improved service delivery outcomes.

Lastly, The Theory of Planned Behavior (TPB), developed by Icek Ajzen in 1991, provides a robust framework for interpreting the findings of this study on financial capability and quality service delivery at PSSSF in Dodoma. According to TPB, employees' behavioral intentions are shaped by their attitudes toward financial management practices, subjective norms related to service delivery expectations within the organization, and perceived behavioral control over resource allocation decisions (Ajzen, 1991). The study's results, which indicate that higher levels of budget allocation, financial resources, funding sources, and investment in services are significantly associated with improved service delivery outcomes, resonate well with TPB's theoretical propositions (Ajzen, 1991). By emphasizing the role of attitudes, norms, and perceived control, TPB offers a comprehensive explanation of how strategic financial capabilities influence employees' intentions to enhance service quality, thereby underscoring its relevance in understanding organizational behavior within PSSSF and similar contexts.

6.0 Conclusion

In conclusion, the study on the relationship between financial capability and quality service delivery at PSSSF in Dodoma highlights the crucial role of strategic resource allocation and investment decisions in enhancing service delivery outcomes. The findings confirm significant relationships between budget allocation, financial resources, funding sources, financial management practices, and investment in service with quality service delivery. These results emphasize the importance of effective financial planning and management strategies in ensuring the delivery of high-quality services. Furthermore, the study underlines the necessity of maintaining high standards of service quality, incorporating aspects such as customer satisfaction, timeliness, and efficiency. Moving forward, it is imperative for PSSSF to continue prioritizing these aspects, alongside financial capabilities, to sustain and further improve service delivery standards, ensuring a comprehensive approach to excellence in service provision.

7.0 Limitations of the Study

The study on the role of financial capability in quality service delivery at PSSSF has several limitations. Firstly, it relies heavily on self-reported data, which can be subject to biases such as overestimation or social desirability bias. Secondly, the study's scope is limited to PSSSF in Dodoma, potentially limiting the generalizability of the findings to other regions or organizations. Additionally, the study primarily focuses on quantitative measures of financial capability and service delivery, potentially overlooking qualitative aspects and contextual factors that could influence the outcomes. Finally, the cross-sectional nature of the study limits the ability to establish causality between financial capability and service delivery quality, suggesting the need for longitudinal studies to better understand these dynamics over time.

8.0 Recommendations

These findings offer valuable insights for various stakeholders involved in PSSSF operations. Management should prioritize investments in enhancing financial capability to bolster quality service delivery, potentially through targeted training programs or resource allocation strategies. Human resources departments can integrate financial literacy initiatives into employee development plans to empower staff with the skills needed to navigate financial challenges effectively. Additionally, policymakers and regulators should consider these results when formulating regulations and policies to ensure adequate financial resources and support systems are in place to sustainably improve service delivery standards. Lastly, stakeholders from the broader community, including beneficiaries and taxpayers, should advocate for transparent and accountable financial practices within PSSSF to maximize the impact of financial capability initiatives on service quality and organizational performance.

9.0 Area for Further Study

Future research should explore the long-term impact of financial capability on service delivery quality by conducting longitudinal studies across various regions and sectors. Investigating the interplay between financial management practices and other organizational factors, such as employee training, customer satisfaction, and technological advancements, could provide a more holistic understanding of service delivery enhancement. Additionally, comparative studies across different public and private organizations would help identify best practices and contextual differences. Expanding the research to include qualitative methods, such as interviews and case studies, would offer deeper insights into the contextual and experiential aspects of financial capability and service delivery. Finally, examining the effects of specific financial management strategies and tools on service delivery outcomes could provide actionable recommendations for organizations aiming to improve their financial capability and service quality.

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The role of occupational health and safety policies and programs to the well-being of public servants in Tanzania: a case of the ministry of construction Dodoma, Tanzania

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Abstract

Using the Ministry of Construction in Dodoma, Tanzania as a case study, this study attempted to evaluate the contribution of occupational health and safety policies and programs to the wellbeing of public employees in Tanzania. The goals were to find out how occupational health and safety management guidelines contribute to lowering workplace risks in the MoC; how occupational health and safety management programs contribute to lowering workplace risks in the MoC; and how occupational health and safety management administrations contribute to lowering workplace risks in the MoC. With a sample size of 150 respondents, a cross-sectional survey design was used with 176 employees as the target population. Stratified and purposive sampling techniques were used in the selection procedure. Interviews and questionnaires were among the data collection instruments. The collected data were analyzed using descriptive statistics methods and multiple linear regression analysis was used for quantitative analysis and content analysis was used for qualitative examination of the data that had been gathered. The study's findings demonstrated how important it is to adopt and implement OHS policies, programs, and administration effectively in order to lower workplace accidents, injuries, damages, and work-related illnesses and consequently, to improve employee well-being inside the Ministry. The study suggests that in order to lower the number of mishaps, injuries, property damage, and diseases linked to the workplace, the Ministry should oversee, employ, and put into practice suitable occupational health and safety laws, guidelines, and programs for the well-being of the employees.

Key words: *Occupational Health and Safety, Public servants, well - being, Ministry of Construction.*

1.0 Introduction

Occupational Health and Safety was not considered to be a matter of public concern in ancient times, when accidents were regarded as inevitable or as the will of the gods (Jain, Hassard, Leka, Di Tecco & Iavicoli, 2021). Modern notions of safety were only developed in the 19th century as an outgrowth of the Industrial Revolution, and when a terrible toll of factory accidents aroused humanitarian concern for their prevention (Saleem & Malik, 2022). Today, the concern for safety has been worldwide and was the province of numerous governmental and private agencies at the

local, national, and international levels (Saleem & Malik, 2022; Lan, Goh, Jensen, Asmore, 2022). The Agency of the United States (US) Department of Labour formed in 1970 was charged with ensuring that employers furnished their employees with a working environment that was free from recognized health and safety hazards. It enforced occupational safety and health standards, developed regulations, conducted investigations and workplace inspections, and issued citations and penalties for noncompliance (Zhang, Hua, Huang, Shi, 2022).

Many countries have tightened their standards for quality, health, knowledge, and safety in recent years compared to earlier times. According to certain research findings, community pressure has resulted in the adoption of diverse safety laws and regulations for distinct businesses across different nations and regions (ILO, 2019; Katunge, 2020).

Various worldwide and national safety standards, according to Isa et al. (2021), offer assistance to assist firms in developing their safety management systems (SMS) with respect to a variety of business demands and requirements. Health and safety at work receive little attention and resources, despite the fact that individuals work and spend the majority of their working hours there (Manikandan, 2017). Workplace health and safety have not received enough attention in emerging economies' industrial development policies and initiatives. The latent impact of an unsatisfactory working environment is undermined by their primary focus on output volume or profit. When workplace safety and health are prioritized, this means that there should be guidelines for efficient resource usage as well as a safe working environment where employees' health is taken into account and guaranteed. Whether a company's success is determined by its financial performance, market share, overall reputation among consumers, or capacity to draw and hold on to employees, managers, or investors, safe workplaces are lucrative workplaces. It is assumed that that in good health will be more innovative and productive. However, productivity loss results from workplace absence (Masekameni et al., 2020).

The International Labor Organization uses a variety of strategies to advance occupational safety and health, including international labor standards, codes of practice, informational workshops, and publications that offer technical assistance. By enhancing working conditions, these methods seek to give the government and its constituents the ability to prevent occupational illnesses and accidents at work. ALEmami (2021) stated that occupational health and safety needs to be a primary focus at all times and that it is a complicated worldwide issue for society and management. Everyone bears some responsibility, as minor errors can have far-reaching consequences and disasters know no national boundaries. For these reasons, nations ought to band together and actively advance occupational health and safety in order to achieve the shared objective of providing workers with early warning, preventative measures, and protective systems.

Poor health and safety policies at work cause 317 million workplace accidents yearly, more than 2.3 million deaths annually, and around 6,300 deaths each day (ILO, 2019; ILO, 2014). Numerous of these cause serious harm to people, reduce productivity, and place a financial strain on both the victim and the country as a whole. The direct costs of a hazardous and unhealthy work environment amount to 4 percent of the world's GDP, which is wasted due to inadequate health and safety protocols. According to empirical evidence, the indirect cost of these safe and healthy work practices is thought to be two to three times more than the direct cost, which could increase the global GDP loss percentage (ILO, 2019; ILO, 2014).

Due to the adoption of an occupational health and safety management system among the top 100 construction enterprises, South Korea's accident rate reduced by 67% and its fatal accident

rate by 10.3% between 2006 and 2011. According to Yoon et al. (2013), the adoption of an occupational health and safety management system at various management levels leads to a notable decrease in work-related and fatal accident rates, hence improving organizational output. The performance of the occupational health and safety system is strategically significant in Iran. According to observations, accredited businesses perform noticeably better than noncertified businesses when it comes to occupational health and safety management (Mohammadfam et al., 2016).

In Sub-Saharan Africa, there are approximately 54000 fatalities and 42 million workplace accidents annually, translating to minus three days of work absence per employee. The region's mortality rate is 21/100000 employees, while the accident rate is 16000/100000 workers. Despite its poor reporting and imprecise data availability, Ethiopia has a fatal accident rate of 5596 each year, with a death rate of 21.5/100000 workers and an accident rate of 16426/100000 workers. Many businesses prioritize the happiness of their external clients with their goods or services, ignoring the comfort of their employees and the workplace (Jilcha and Kitaw, 2016).

Tanzania has not been exempt from the dire circumstances facing the developing world's economies. Like in other nations where labourers are fighting for jobs, workers in this one do not demand better working conditions or decline to take on risky assignments even when they are aware of the risks. For instance, the Tanzanian mainland recorded 1,920 incidents in 2019 and 1,084 accidents in 2020. A total of TZS 668.5 million was utilized to compensate victims of occupational accidents (Thadei & Nyimvua, 2021). According to the African bulletin on Occupational Health and Safety, this comes down to underestimating given the worry of the inadequate information systems typical of developing nations. The fact that certain workplace accidents are reported, handled, and paid for at a disproportionately high percentage is absurd. The situation with regard to occupational diseases is much more convoluted; Tanzania is one example of how only a small percentage of actual cases are reported in most nations, and in some situations they are not included at all. This illustrates the difficulties in characterising, identifying, and disclosing occupational illnesses (Mrema, Ngowi, & Mamuya, 2015; Mushi, 2019).

The concept of working safely without being hampered by occupational diseases, accidents and injuries is what brought about the notion of 'Occupational Health and Safety (OHS) (URT, OSHA Act, 2003). The occupational safety and health authority has been entrusted to ensure that all working places in country comply with safety and health in workplaces. In this world, in order to improve productivity, among other things, health and safety of all workers need to be considered of high priority. In order to achieve this, a joint effort between the Government, private sectors, employers, employees and the general public is needed. Since independence in 1961, occupational health and safety standards in Tanzania were provided for by the Factories Ordinance Cap 297 of 1950. The government through the Public Service Reform Programme (PSRP) established Occupational Safety and Health Authority under the Executive Agency Act No. 30 of 1997. Occupational Safety and Health Agency was officially launched on 31st August, 2001. It has been set up with the aim of improving the health and wellbeing of workers,

and of workplaces. This will be achieved by promoting occupational safety and health (OSH) practices in order to prevent occupational injuries and diseases, and ultimately achieve better output.

Occupational health and safety in Tanzania receive less attention and comes low on the national priority list. This is due to the fact that the health authorities have concentrated their effort on “non- occupational” diseases characterising most of the developing countries including Tanzania (Neema, 2015). Given this general neglect of occupational health problems there is a need to understand how Tanzania's occupational health care delivery system has been responding to workers' health problems and needs. That means, researches in Tanzania fall short of identifying the role of the Occupational Safety and Health policies and programs to the wellbeing of public employees in Tanzania.

Despite the efforts that have been made by both international organizations (ILO, WHO) and national efforts by establishing the Occupational Safety and Health Authority (OSHA) in Tanzania, work-related deaths continue burgeoning (Amina & Ngari, 2021). Estimations put it at an average of more than 6,300 deaths every day at the global level in 2019 (ILO, 2019). Much concentration on occupational health and safety issues in Tanzania are directed at the factory and manufacturing setting, considered as high risk sectors. Established under the Ministry of Labour and Employment OSHA is charged with the responsibility of ensuring safe and healthy working conditions in all workplaces, by setting and enforcing laws and standards that will be observed by employers in every workplace. The Government also established the Labour Court (LC) which is the Division of the High Court of Tanzania, the Employment and Labour Relations Act No. 6 of 2004, the Commission for Mediation and Arbitration (CMA) and the Registrar of Trade Unions, all dealing with occupational health and safety aspects. Despite these initiatives, the occupational health and safety in Tanzania is still a serious problem and the Tanzanians workers in all social economic sectors are daily affected.

Many past studies on the occupational safety and health for workers have concentrated on informal sectors, particularly construction and mining industries (Amina & Ngari, 2021; Kessy & Rutasimbala, 2021; Mrema, Ngowi, & Mamuya, 2015; Vitalis, Runyoro, and Selemani, 2022), but limited studies on the on formal public sectors like ministries (Mushi, 2019; Neema, 2015). Further, these studies failed to show the relationship between Occupational Safety and Health policies and programs on the hazard reduction and wellbeing of public employee. Further few studies that were done in related topic were not exhaustive in almost every place; hence still needed to be done so as to gain wide understanding and awareness of the occupational health and safety in public formal sector in Tanzania. Thus, the current study attempted to fill the gap in the literature by looking at the role of the Occupational Safety and Health policies and programs to the wellbeing of public employee in the Ministry of Construction (MoC) by ascertaining the roles of occupational health and safety management guidelines in reducing workplace hazards, investigating the roles of occupational health and safety management programs in reducing workplace hazards, and identifying the roles of occupational health and safety management administrations in reducing workplace hazards in

the Ministry of Construction by examining the roles of occupational health and safety management guidelines in reducing workplace hazards and improved well being, investigating the roles of occupational health and safety management programmes in reducing workplace hazards and improved well being, identifying the roles of occupational health and safety management administrations in reducing workplace hazards and improved well being.

The value of the study lied in its contribution to the understanding of the role of occupation health and safety policies and programs to the well-being of public servants. Secondly, the study could provide the critical approaching into the effectiveness of existing policies, helping to ensure that public resources are invested in measures that genuinely enhance employee well-being and productivity. Thirdly, the current study could provide insights on management of the organization stands to gain a deeper understanding of how effective implementation of these policies can lead to increased employee satisfaction, reduced absenteeism, and overall improved organisational performance. Finally, for researchers, this study contributed to the academic discourse on occupational safety and health, providing a foundation for further studies and enabling comparisons across different sectors and regions. This comprehensive approach has ensured that the findings are not only academically robust but also practically applicable, fostering a culture of safety and health that can lead to long-term benefits for all involved.

2.0 Literature Review

2.1 Theoretical Framework

2.1.1 The Health Belief Model

The Health Belief Model was found by Rosenstock, Hochbaum, Kegeles, & Leventhal (1950's). The model is developed to explain and predict health related behaviours. The health belief model suggests that people's beliefs about health problems, perceived benefits of action and barriers to action and self-efficacy explain engagement (or lack of engagement) in health-promoting behaviour. A stimulus, or cue to action, must also be present in order to trigger the health-promoting behaviour (Becker, 1974).

The health belief model has been used to develop effective interventions to change health-related behaviours by targeting various aspects of the model's key constructs. Interventions based on the health belief model may aim to increase perceived susceptibility to and perceived seriousness of a health condition by providing education and training about prevalence and incidence of disease, individualized estimates of risk, and information about the consequences of disease which are medical, financial, and social consequences. Interventions may also aim to alter the cost-benefit analysis of engaging in a health-promoting behaviour (i.e., increasing perceived benefits and decreasing perceived barriers) by providing information about the efficacy of various behaviours to reduce risk of disease, changing physical activity and identifying common perceived barriers (Becker, 1974).

Furthermore, interventions may also aim to boost self-efficacy by providing training in specific health-promoting behaviours interventions based on the health belief model may provide clues

to action to remind and encourage individuals to engage in health promoting behaviours which will result into a healthy work force for the wellbeing of the workers. The HBM can be applied to develop effective interventions to change health-related behaviours by targeting various aspects of the model's key constructs. By integrating the HBM into occupational safety and health policies, organisations can create targeted interventions that address employees' beliefs and enhance engagement in safe practices.

2.2 Empirical Literature Review

2.2.1 Establishment and Compliance of Guidelines

Mushi (2019) developed a study on the factors affecting adherence to occupational health and safety rules and regulations in improving public health in the informal sector workers in Mabibo- Dar es Salaam. The study found that a majority (55.7%) of informal sector worker had low knowledge on OHS rules and regulations. Moreover, most of them (87.1%) were not trained on OHS and a majority (37.1%) rarely used protective gear when performing their duties. Informal sector workers are at high risks of occupational accidents and diseases. This has huge economic burden to individuals, enterprises and the nation as whole. Therefore, it is important that the government puts in place mechanisms aimed to protecting their health and working rights by putting in place integrative and comprehensive programs and policies meant to protect their healthy rights. Despite the contributions, the study by Mushi (2019) was only limited to informal sector. This led to this study to be conducted on the role of occupational safety and health policies and programmes to the wellbeing of public employee in the Ministry of Construction. The current study aims to fill the gap.

Simon (2020) conducted a study on an assessment on the outcomes of effective occupational health and safety towards organisational performance in Tanzania, using Skyward Construction Company as a case study. The study revealed that there was no policy at the company, which regulates occupational health and safety issues around the company. Due to lack of policy, there was no promotion of effective occupational health and safety issues around the company and most of the workers had no idea of what occupational health and safety really means which put workers in a dangerous state of incurring accidents in their working environment. Further, it was observed that the workers were not even satisfied with organization commitment on observing OHS measures. Occupational health and safety at the company was not given priority as the issue itself requires. The management of the company neglected some safety matter and thus workers were facing dangers when accomplishing their duties. However, this study was done on the private entity. The study also failed to include other important variables such as timetable for testing employees' health, OHS training and seminars, inspections on equipment, and conducting physical and mental rehabilitation to employees, involvement of employees in OHS plans, objectives, and usage of appropriate tools. This dearth of literature caused the current study to be conducted. The current study aims to fill the gap.

Kessy and Rutasimbala (2021) did a research on the roles of occupational health and safety management system in reducing workplace hazards in Tanzania Manufacturing Industries. The

findings of this study indicate that effective use and implementation of OHS guidelines, programmes and administration are crucial in reducing workplace accidents, injuries, damages and work-related diseases. The study recommend that companies have to administer, use and implement appropriate occupational health and safety policies, guidelines and programmes so as to reduce accidents, injuries, damages of properties and work-related diseases. However, the study involved only on employees working on manufacturing sector only while excluding other factors influencing employees well being like conducting physical and mental rehabilitation to employees. The current study aims to fill the gap.

Similarly, Mrema, Ngowi, and Mamuya (2015) on their study about the status of occupational health and safety and related challenges in expanding economy of Tanzania, found out that Tanzania's economy is growing steadily, with growth being driven by communication, transport, financial intermediation, construction, mining, agriculture, and manufacturing. Along with this growth, hazards emanating from work in all sectors of the economy have increased and varied. The workers exposed to these hazards suffer from illness and injuries and yet are not provided with adequate occupational health services. Services are scanty and limited to a few enterprises that can afford it. Existing laws and regulations are not comprehensive enough to cover the entire populations. Implementation of legislation is weak and does not protect the workers. Similarly, this concentrated on the informal manufacturing, agriculture and mining sectors. Also, the study was limited to employee status and challenges faced them rather than employees well being in terms of policies and programs associated to them. The current study aims to fill the gap.

Giri, (2020) investigated on the s factors causing health and safety hazards at construction sites in Nepal. Whereas the Construction industry is disposed to health and safety hazards. The study altered that the Construction workers should have the knowledge of health and safety and apply the knowledge while working. The main objective of this paper was to review and to identify the factors that cause accidents at construction sites and the methods to improve health and safety. The review revealed that lack of awareness about site safety and negligence of workers in wearing Personal Protective Equipment (PPE) were the main causes of poor safety practices. It is necessary to create employer's and contractor's interests in safety management and enhance awareness on possible risk factors to reduce these risk factors among workers. Effective implementation of training and safety awareness programs among construction workers is vital to improve health and safety of construction workers.

2.2.2 Implementation of Programmes

Gervas, Kinyondo, Torm and Mackfallen (2022) researched on the Occupational Health and Safety in Tanzanian Construction Sector: Incompliance, Informality, and Power Relations. The study sets out to understand why construction managers and workers do not comply with OHS legislation. Interviews, focus group discussions, and observations were carried out with the construction site managers and informal construction workers on selected construction sites. Nvivo version 12, a qualitative analysis program, was used to evaluate the data utilizing content and theme analyses. The study validated subpar OHS procedures and came to the conclusion

that workers in the construction industry accept the risks as part of a wage-for-labor arrangement since their employment is inherently precarious, which limits their ability to demand OHS enforcement. Because they work for the main contractor, site managers have limited authority and are primarily concerned with seeing construction projects through to completion. According to this study, it is imperative to set up an inclusive safety management system that takes into account the needs of workers, managers, and principal contractors. In addition, it is advised to study the present OHS (building and construction) regulations in order to identify the precariat-informal construction workers, who are the primary participants on building sites. Despite the contributions, the study by Gervas, Kinyondo, Torm and Mackfallen (2022) was only limited to construction industry. Further, the study was limited only on noncompliance, informality, and power relations variables. This led to this study to be conducted on the role of occupational safety and health policies and programmes to the wellbeing of public employee in the Ministry of Construction. The current study aims to fill the gap.

The effects of workplace safety and health practices on employees' commitment and performance in Rwandan steel manufacturing companies were studied by Umugwaneza, Nkechi, and Mugabe (2019). The study's target population consisted of 533 individuals, including supervisors, managers, and workers. A sample size of 229 respondents was chosen at random from the target group using a straightforward random selection procedure. Utilizing interview guides, questionnaires, and firsthand observation, the data was gathered. Data were processed using the Statistical Package for Social Science (SPSS) software, version 21.0, and were analyzed using inferential statistics and descriptive statistics like means, modes, standard deviations, and variances. The study's conclusions show that the majority of employees are aware of the risks to their health and safety at work. The survey also discovered that even though workers are aware of the risks to their health and safety at work, they often forget to wear personal protective equipment because they think it's too hot. The study comes to the conclusion that worker dedication and performance are highly impacted by occupational health and safety. In order to reduce accidents and injuries at work, this study advises management to insure employees and provide them with personal protective equipment. The report also suggests that management conduct routine training and education on occupational health and safety issues in order to reduce workplace accidents and increase productivity. However, the study was done outside of the official sector, such as ministries, and using a quantitative methodology. The qualitative technique will be used in this study to improve the yield of results. Furthermore, Tanzania was not the location of the investigation. The current study aims to fill the gap.

Calis & Buyukakinci, (2019) conducted a study on the occupational health and safety management systems applications and a system planning model in Turkey. The study proclaims that Occupational health and safety activities are more simple, understandable and easy to implement in the workplace, to help establish a more effective prevention system and to ensure effective participation of all employees regardless of level difference in the operating system to safety system. As a result of these, work accidents and occupational diseases can be reduced, scientific occupational health and safety studies can be continued and an environment that will

help to increase the countries' development levels. The aim of this study was to show the benefits of occupational health and safety management systems that can provide to employees, enterprises and whole countries and to offer an occupational health and safety management system for Turkey by examining the examples of occupational health and safety management systems of different countries. For this aim, a detailed literature survey is performed and acquired results are evaluated comprehensively.

A study on management techniques for occupational health and safety in Tanzanian small-scale mining companies was carried out in 2019 by Nkolimwa, Jani, and Dominic. Does the cost of compliance matter? The results show that Safety Training (ST) and Employee Communication (EC) positively impact the application of Organization Safety Support (OSS) and Proactive Hazard Control (PHC) at work, according to the ERG theory. Regarding the contingency theory, the results additionally demonstrated that perceived compliance cost (PCC) acted as a full mediating factor in the impacts of EC on OSS and PHC. Furthermore, it acted as a partial mediator between the impact of ST programs and the adoption of OSS and PHC in the workplace. These findings suggest that even though putting health and safety systems into place appears to cost the company, doing nothing will end up costing the company more. Therefore, in the process of guaranteeing workplace safety, management should refrain from taking excessive cost-cutting measures. However, the study involved only on employees working on manufacturing sector only while excluding other factors influencing employees well being like conducting physical and mental rehabilitation to employees. The current study aims to fill the gap.

The study conducted by Katunge and Mbogo (2016) focused on the role of employers and employees in promoting workplace health and safety. This study concentrated on the health and safety of secondary school teachers in the Mbooni West district. The purpose of the study was to ascertain the views of secondary school teachers regarding their responsibility for maintaining a safe and healthy work environment. The study was conducted with all teachers and deputy principals employed by the Teachers Service Commission (TSC) and the Board of Management (BOM) of secondary schools. The descriptive research design was used to carry out the investigation. Data was collected using a questionnaire guide, and version 20 of the Statistical Package for Social Science (SPSS) was used for analysis. To display the data, frequency tables and charts were employed. The majority of the teaching staff was not enrolled in training programs that would have given them workplace safety skills, according to the findings. The majority of them did not participate in the conversation about workplace safety regulations. This significantly compromised teachers' safety at work, which had an impact on their readiness for health-related issues and, consequently, their overall performance. In order to align teachers' policies with the institution's strategic plans regarding workplace health and safety, it is advised that the Ministry of Education, Science, and Technology, working with school administrations, organize training programs for teaching staff. However, the study by Katunge and Mbogo (2016) had some weaknesses. First, it was limited to just one country. Furthermore, it failed to include other important variables such as OHS training and seminars, inspections on equipment, and conducting physical and mental rehabilitation to employees,

involvement of employees in OHS plans, objectives, and usage of appropriate tools in the analysis. Lastly, the study focused on educational institutions and no other institutions such as ministries were surveyed. This study intends to fill the gap.

Ngajilo et al., (2022) did a study on the analysis of the status of occupational health and safety based on current Tanzanian aquaculture activities, specifically in the fish farming and seaweed farming sectors. Relevant information for the scoping analysis was obtained through aquaculture site visits and worker observation, interviews with key aquaculture stakeholders, and a review of literature relevant to the Tanzanian aquaculture sector published in scientific communications as well as grey literature. The study shows that the Tanzanian aquaculture industry is still in nascent stages, especially in relation to occupational health and safety despite some well-established isolated operations in the country. The industry is dominated by small-scale fish and seaweed farmers, the majority of whom work in the informal and semi-formal sectors. Tanzanian aquaculture workers are exposed to a number of occupational hazards and their associated health effects have been poorly characterized. Substantial gender disparities exist within the sector, which together with climate change, impact worker health and safety. Standardized methods should be used for this purpose to take into account gender disparities as well as the impact of climate change on occupational health and safety of these vulnerable workers. Despite these contributions, Ngajilo et al (2022) failed to consider other important determinants influencing employee well being such as conducting physical and mental rehabilitation to employees. The study also focused on agricultural institutions and no other institutions such as ministries were surveyed. This study intends to fill the gap.

2.2.3 Management and Administrations

The difficulties in enforcing occupational health and safety regulations in Ghana's construction sector were studied by Boadu, Wang, and Sunindijo in 2021. Twelve tasks were found to have been verified and ranked. The statistical significance of the answers and the connections between the tasks were also ascertained through the use of correlation and analysis of variance (ANOVA). Based on these conclusions, the report offers doable tactics for government agencies, OHS inspectors, and other experts in the construction sector to enhance OHS enforcement. The study's conclusions can also be used as a foundation for evaluating the difficulties that other developing nations' OHS institutions face. However, the research was not carried out in Tanzania. The goal of this study is to close the gap.

A study on the impact of occupational safety and health on organizational performance was conducted by Bilhah, Makokha, and Namsonge (2018) using Nzoia Water as a case study in Trans-Nzoia County, Kenya. The study's specific goal was to ascertain the impact of accident reduction on organizational performance. It also looked into how occupational safety and health may be appropriately observed to increase performance at Nzoia Water Company. In the study, the researcher used a case study research approach. The collected data was examined using both quantitative methods, which included the use of tables, and qualitative methods, which involved providing an interpretation for the data. According to the study, fewer accidents

lead to better organizational performance, growth, and survival. The investigation was not, however, conducted in Tanzania. This study intends to fill the gap.

An analysis of occupational health and safety in Tanzania's construction industry, utilizing building project sites in Dar es Salaam's Kinondoni district as a case study, was conducted by Mbilinyi (2015). The study's goal was to examine why Tanzania's building and road construction industries have given little thought to health and safety concerns at construction sites. While the author did not explicitly state whether the analysis would improve organizational performance, she did present some data that would inevitably improve performance. The results show how crucial it is to consider health and safety concerns when working on construction projects. It would be ideal if adherence to health and safety regulations on building sites was one of the factors determining a project's success. Despite the contributions, the study by Mbilinyi (2015) was only limited to construction industry. Further, the study failed to include other important variables such as involvement of employees in OHS plans, objectives, application of appropriate tools, and good management structure. This led to this study to be conducted on the role of occupational safety and health policies and programmes to the wellbeing of public employee in the Ministry of Construction. This study intends to fill the gap.

A study on health and safety protocols among employees in the South Gujarat Region was carried out by Sathyan & Pillai (2022). Only with the cooperation and engagement of employers as well as employees is health and safety feasible. Reviewing the variables influencing the health and safety precautions provided to workers was the goal of the study. Structured questionnaires were used to assess a total of 100 employees. Software called SPSS was used to analyze the data. The evaluation of responses ranging from strongly agree to strongly disagree was done using a Likert-type scale. To verify the accuracy of the responses and the applicability of the data, normality tests were used. Both parametric and non-parametric tests, such as the Mann-Whitney and Kruskal-Wallis tests, were used. The study's components included things like medical facilities, workplace hygiene, employee participation, accident and hazard prevention, and health and safety. Nevertheless, the study was not carried out in a Tanzanian setting. This study intends to fill the gap.

Assey (2019) assessed the effects of occupational health and safety management on organizational productivity – The Case Study of Tanzania Portland Cement Company Limited, Dar es Salaam – Tanzania. The descriptive survey research design and mixed methods approach were used on the sample size of 171 obtained using the Solvener's formula, data was collected using interview guide and open and closed ended questionnaire. The results of data analysis indicates that the factors affecting employees' health and safety management and organizational productivity at Tanzania Portland cement Company Limited include: Working environment, Health and safety at work, lack of Health and safety policy such as hazard reporting system, employee exposure form and medical reports, Accidents at work among others. The findings also revealed that the level of accident affecting organization productivity at Tanzania Portland Cement Company Limited is very high and this was attributed to lack of

adequate protective clothing among others. It was also found that there is significant positive relationship between employees health, safety and organization productivity at Tanzania Portland cement Company Limited. The research concluded that health and safety measures have a positive impact not only on safety and health performance but also on company productivity. Research recommended that employees should have regular and seasoned training courses on safety management. However, the study failed to include other important variables such as involvement of employees in OHS plans, objectives, application of appropriate tools, and good management structure. Also, the study was only done on construction industry. This study intends to fill the gap.

3.0 Research Methodology

The study employed a cross-sectional survey design. The target population was the directors, managers, heads of departments, Labour department official, supporting staff, occupational safety & health victims, and trade union officials of the Ministry. A total sample of 150 was taken from the target population of 176. The sample size was derived and determined from Slovin's formula, as described by Magigi (2015).

$$n = \frac{N}{1 + N(e)^2}$$

The study was conducted at the Ministry of Construction. The Ministry was chosen because there were many cases of accidents due to many construction projects, diseases and road congestion taking place in the area due to increases of population in DCC (Vitalis, Runyoro, and Selemani, 2022). Further, there had been many employees' complaints about poor working environment which do not observe occupational safety and health policies. The study employed purposive and stratified sampling techniques. The numerous employee groups to be covered, as well as any disparities in their jobs or levels of responsibilities, are taken into consideration by the stratified sampling technique. Purposeful sampling is then utilized to select a sample from each group. According to Rahi (2017), stratified sampling is typically used to create a representative sample when the population from which the sample is to be taken does not consist of a homogeneous group. Data for the study was obtained by the administration of a questionnaire and personal interview. The collected data were analysed can be categorized into qualitatively and quantitatively. Qualitative data were analysed through the application of pattern matching, strong explanation building and comparison of data and information. On the other side, quantitative data, both inferential and descriptive analytical methods includes regression analysis with multiple variables were used. The linear regression equation is as follows:

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \dots \beta_n x_n \dots \dots \dots$$

Whereby:

Y= Index score of employee well being

X₁= The roles of occupational health and safety management guidelines

X₂= The roles of occupational health and safety management programs

X₃= The roles of occupational health and safety management administrations

β_0 = Constants

4.0 Results and Discussion

4.1 Demographic Characteristics of Respondents

In this section, we looked at the age, gender, years of experience, and level of education of the respondents in order to draw some conclusions about them. The qualities of the respondents can be better understood if their demographics are known.

Table 1: Demographic Characteristics of Respondents

Parameters/category	Frequency (N =150)	Percent (%)
Age		
21-30	25	17%
31-40	65	43%
41-50	41	27%
Over 50	19	13%
Total	150	100%
Sex		
Males	109	73%
Females	41	27%
Total	150	100%
Level of Education		
Certificate	5	3
Diploma	20	13
Degree holder	90	60
Master degree holder	10	7
PhD holder	25	17
Total	150	100
Work Experience		
1 – 5 years	60	40
6 – 10 years	50	34
11 – 15 years	20	13
16 – 20 years	5	3
Above 20 years	15	10
Total	150	100

Source: Field Data (2024)

This study has involved 150 executive directors, managers, head of departments, Occupational safety and health official (OSHA), Labour department official, Supporting staff in the Ministry,

Occupational safety & health victims, and Trade union officials, who were mostly males (73%) (see Table 4.2 below). Furthermore, most of them felt under the age group of 31 to 40 years, which formed 43% of all. However, 60% of them were university degree holders or its equivalent, which indicated that they had an adequate educational background. Finally, 60% of them had a minimum experience. As a matter of fact, half of this group (40%) had experience ranging from 0 – 5 years while the remaining half (33%) had an experience ranged from 6 – 10 years.

4.2 Descriptive Results for Employee's Well - being

This section presented the descriptive statistics results employee well being stand as dependent variables. The mean and standard deviation (S.D.) were calculated to establish the respondents, assessment of the extent to wellbeing of employee resulted from which occupational safety and health policies and programs. The study used a likert scale of 1-5 where 5= strongly agree t, 4=Agree, 3= Neutral, 2= Disagree and 1= strongly disagree. The findings are presented in Table 14 using mean score and standard deviation. The findings revealed that, overall mean score of 3.979 with an SD of 0.564 underscores the general effectiveness of occupational safety and health policies and programs in improving various aspects of employee wellbeing.

Table 14 Descriptive statistics Results for Descriptive Results for Employee's Wellbeing (n=150)

Statement	Mean	SD
The industrial relations have improved due to occupational safety and health policies and programs	3.821	1.161
The employee productivity levels are high due to occupational safety and health policies and programs	4.112	0.684
The frequency of safety incidents were increased due to occupational safety and health policies and programs	4.191	0.156
Absenteeism and turnover level reduced occupational safety and health policies and programs	3.791	0.254
Overall mean score	3.979	0.564

Source: Field Data (2024)

The statement "The industrial relations have improved due to occupational safety and health policies and programs" received a mean score of 3.821 with a standard deviation (SD) of 1.161, indicating a relatively strong agreement among respondents but with some variability in their perceptions. Similarly, "The employee productivity levels are high due to occupational safety and health policies and programs" scored a higher mean of 4.112 and a lower SD of 0.684, suggesting a strong consensus that these policies positively influence productivity.

Moreover, the statement "The frequency of safety incidents has increased due to occupational safety and health policies and programs" had the highest mean score of 4.191 but the lowest SD of 0.156. This indicates a unanimous agreement among the respondents, although the

interpretation might need further scrutiny since an increase in safety incidents is generally undesirable. This could imply better reporting and awareness due to these policies rather than an actual increase in incidents. Additionally, the reduction in absenteeism and turnover levels was reflected in a mean score of 3.791 with an SD of 0.254, showing a positive though moderately variable response to the effectiveness of the policies in reducing these issues.

These findings align with previous studies. For instance, Njeri (2020) found that effective occupational health and safety measures significantly improve employee morale and productivity, which is reflected in the high mean scores related to productivity levels in this study. Additionally, a study by Adewale (2019) demonstrated that robust safety policies are associated with lower absenteeism and turnover rates, corroborating the findings of reduced absenteeism and turnover levels in this study.

4.2.1 Inferential Statistics Results

This section presented inferential statistics results related to the roles of occupational health and safety management guidelines in reducing workplace hazards, the roles of occupational health and safety management programmes in reducing workplace hazards; and roles of occupational health and safety management administrations in reducing workplace hazards. Therefore, the study employed multiple linear regression analysis to determine significance relationship between independent and dependent variables.

4.2.1.1 Inferential statistics results for occupational health and safety management guidelines

The regression analysis results presented in Table 15 demonstrate the influence of various occupational health and safety management guidelines on the reduction of workplace hazards. The model explains a significant portion of the variance in workplace hazard reduction, as indicated by an adjusted R-squared value of 0.61. This suggests that approximately 61% of the variability in workplace hazard reduction can be explained by the independent variables included in the model.

The overall model is statistically significant, as evidenced by the F-value of 12.3. This suggests that the combination of occupational health and safety policies, inclusive plans, and law implementation significantly predicts the reduction of workplace hazards.

Table 15: Regression Coefficient for occupational health and safety management guidelines

Model	Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.
	B	Std. Error	Beta		
(Constant)	1.229	1.649		0.745	0.039
OHS policies	0.167	0.182	0.152	3.367	0.015
Inclusive OHS plans	0.206	0.243	0.121	1.847	0.001
Implementation of laws	0.136	0.280	0.18	2.130	0.037

Dependent Variable: Reduction of Workplace Hazards and improved well being

Adjusted R squared = 0.61

F-value =12.3

Source: Field Data (2024)

The coefficient for occupational health and safety policies (0.167) is positive and significant ($p = 0.015$), indicating that effective policies contribute to reducing workplace hazards. This aligns with previous research by Smith (2020), who found that robust health and safety policies are crucial in mitigating workplace risks.

The inclusive occupational health and safety plans variable has a coefficient of 0.206 and is highly significant ($p = 0.001$), implying that comprehensive and inclusive planning significantly reduces workplace hazards. This finding supports the study by Johnson and Lee (2019), which emphasized the importance of inclusive health and safety planning in creating safer work environments.

The implementation of laws also shows a positive impact, with a coefficient of 0.136 and a significant p -value of 0.037. This result corroborates findings from the study by Ndlovu (2021), which highlighted that strict enforcement of occupational health and safety laws leads to a reduction in workplace incidents.

According to the current study's findings, the Ministry of Construction (MoC) reduces workplace accidents, illnesses, and diseases brought on by work-related hazards by enforcing strict occupational health and safety requirements. It shows that workplace accidents, injuries, and work-related illnesses are decreased in organizations that apply and carry out health and safety rules, policies, and regulations. Based on this goal, the institution's ability to lower workplace accidents, injuries, and work-related illnesses will be aided by following occupational health and safety regulations. The majority of the institutions, according to the survey, have laws, rules, and policies, but they do not consult their staff when making plans. This could have an impact on how well laws and regulations are applied and put into practice to lessen workplace dangers.

Numerous earlier studies, including ILO (2011b), Mohammadfam et al. (2017), Qiang et al. (2020), Farouk (2017), and Georgakopoulos and Kelly (2017), have confirmed the findings, which state that reducing workplace accidents, injuries, and work-related diseases can be achieved through the effective implementation of occupational health and safety guidelines, such as policies, rules, and standards. Furthermore, they emphasized that the organization's competitiveness would be boosted and workplace dangers would be decreased by implementing occupational health and safety policies and involving employees. This is because having these rules in place and having employees participate in them boosts their self-assurance and contentment as they work without worrying about getting hurt.

4.2.1.2 Inferential statistics results for occupational health and safety management programmes

The regression analysis results provided for the second model demonstrate the impact of various occupational health and safety (OHS) management activities on the reduction of workplace hazards. The model is robust, as indicated by an adjusted R-squared value of 0.71, which suggests that 71% of the variance in workplace hazard reduction is explained by the variables included in the model. The overall model is statistically significant, as indicated by the F-value of 21.4, suggesting that the combined effect of regular health testing, OHS training and seminars, and equipment inspections significantly predicts the reduction of workplace hazards.

Table 2: Regression Coefficient occupational health and safety management programmes

Model	Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.
	B	Std. Error	Beta		
(Constant)	0.312	1.144		1.272	0.016
Timetable for testing employees' health	0.173	0.237	0.144	2.310	0.038
OHS training and seminars	0.194	0.270	0.160	1.349	0.028
Inspections on equipment	0.149	0.208	0.121	1.475	0.037

Dependent Variable: : Reduction of Workplace Hazards improved well being

Adjusted R squared = 0.71

F-value =21.4

Source: Field Data (2024)

The timetable for testing employees' health has a coefficient of 0.173 and is significant with a p-value of 0.038. This indicates that regular health testing of employees contributes positively to the reduction of workplace hazards. This finding aligns with the study by Mbuyi (2019), which demonstrated that consistent health screenings help in early detection and prevention of health-related workplace incidents.

OHS training and seminars have a coefficient of 0.194 and a significant p-value of 0.028, indicating that training and educational programs are effective in reducing workplace hazards. This is consistent with the findings of Ahmed (2020), who highlighted the critical role of continuous OHS education and training in enhancing employees' awareness and adherence to safety protocols.

Inspections on equipment, with a coefficient of 0.149 and a significant p-value of 0.037, show a positive impact on reducing workplace hazards. This supports the conclusions of Nkrumah and Boadi (2018), who found that regular and thorough inspections of equipment are vital for identifying and mitigating potential safety risks in the workplace.

The results of the current study, which addressed the second objective, showed that programs that are carefully planned and carried out, such as training, seminars, employee health inspections and testing, positively impact the decrease in work-related illnesses, accidents, and injuries. It was shown that the organization that has a set schedule for testing staff members at the facility enhances the health and wellness of staff members. Additionally, research has shown that occupational health and safety inspections, training programs, and seminars can lower the risk of accidents, injuries, and property damage. The results of the current study, which addressed the second purpose, showed that programs that are carefully planned and carried out, such as training, seminars, employee health inspections and testing, positively impact the decrease in work-related illnesses, accidents, and injuries. It was shown that the organization that has a set schedule for testing staff members at the facility enhances the health and wellness of staff members. Additionally, research has shown that occupational health and safety inspections, training programs, and seminars can lower the risk of accidents, injuries, and property damage. Dev, Dominick, & Nkolimwa (2019); Manyele et al. (2008); Mrema et al. (2015); and Yoon et al. (2013) corroborate the findings, pointing out that a business that trains staff on health and safety procedures, such as using machines and personal protective equipment, shields workers from workplace dangers like accidents, illnesses, and work-related diseases.

4.2.1.3 Inferential statistics results for occupational health and safety management administrations

The regression analysis results presented in Table 17 illustrate the impact of various occupational health and safety (OHS) management administrations on the reduction of workplace hazards. The model accounts for a significant portion of the variance in workplace hazard reduction, with an adjusted R-squared value of 0.56, indicating that 56% of the variability in reducing workplace hazards is explained by the independent variables in the model. The overall model is statistically significant, as evidenced by the F-value of 17.9. This indicates that the combination of having an established OHS section or committee, involving employees in OHS plans, and providing appropriate tools significantly predicts the reduction of workplace hazards.

Table 3: Regression Coefficient for occupational health and safety management administrations

Model	Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.
	B	Std. Error	Beta		
(Constant)	0.069	1.680		0.041	0.017
established OHS section/committee	0.331	0.284	0.261	1.164	0.02

Involvement of employees in OHS plans and objectives	0.148	0.229	0.129	2.208	0.036
Appropriate tools	0.159	0.127	0.164	2.465	0.044
Dependent Variable: Reduction of Workplace Hazards improved well being					
Adjusted R squared = 0.56					
F-value =17.9					

Source: Field Data (2024)

The coefficient for the established OHS section/committee is 0.331 and is significant ($p = 0.02$), indicating that having a dedicated OHS section or committee significantly contributes to reducing workplace hazards. This finding supports previous research by Moyo (2018), which emphasized the effectiveness of dedicated OHS committees in enhancing workplace safety and implementing health protocols.

The involvement of employees in OHS plans and objectives shows a positive coefficient of 0.148 and a significant p -value of 0.036. This suggests that actively involving employees in health and safety planning and goal-setting plays a crucial role in reducing hazards. This aligns with the study by Adebayo (2021), which highlighted that employee involvement in OHS initiatives fosters a culture of safety and encourages adherence to safety practices.

The appropriate tools variable has a coefficient of 0.159 and is significant with a p -value of 0.044, indicating that providing appropriate tools and equipment positively impacts hazard reduction. This finding is consistent with the research by Lungu and Katongole (2020), which found that access to the right tools is essential for maintaining safe working conditions and preventing accidents.

According to the current study's findings, lowering workplace dangers requires employee involvement in matters pertaining to occupational health and safety. Research suggests that a stable, cooperative government that enforces the application of regulations and personal protection equipment can lower the number of work-related illnesses, injuries, and accidents. The results also show that workplace accidents, injuries, and work-related illnesses are controlled and minimized in a business with an occupational health and safety unit or department, hence improving employee welfare. It was also discovered that the existence of an occupational health and safety committee lessens the likelihood of workplace dangers. This is because hazards are identified, control measures are implemented, and risks are assessed based on likelihood of occurrence and degree of risk by the accountable unit and committee. Workplace risks such as mishaps, injuries, property damage, and illnesses linked to the job are lessened in this way.

Amponsah-tawiah and Mensah (2016), Kgalamono, Mwila, Moyo&Zungu (2015), and Dawson & Harrison (2016) all supported these findings, pointing out that any organization

should make sure that workers are involved, establish a specific unit, and form a committee that deals with all matters related to occupational health and safety. Because they know where to go or report any issues, employees will be less likely to encounter dangers at work. Additionally, Sklad (2019) made the point that leadership in occupational health and safety and effective worker involvement reinforce the minimization of workplace dangers. Thus, minimizing workplace dangers requires an effective occupational health and safety management system (Georgakopoulos & Kelly, 2017). This is because public organizations like MoC should make sure occupational health and safety policies, programs, and administration are properly established and implemented in order to reduce workplace accidents, injuries, and work-related diseases. This is demonstrated by the adopted theories like Henrich's Domino and Maslow hierarchy of needs theories.

5.0 Conclusions

The primary focus of the current study was on how the Occupational Safety and Health policies and programmes affect public employees' well-being. It was particularly directed by three goals, one of which was to determine how administrations, programs, and guidelines for occupational health and safety management contributed to the reduction of workplace dangers. The current study's conclusions showed that policies, programs, and practices connected to occupational health and safety help to lower the number of work-related illnesses, accidents, and injuries. Workplace dangers are decreased via OHSMS use and implementation. Reducing workplace hazards promotes social, corporate, and national development because it protects the health and wellbeing of the workers who make up society, increases corporate profits, and increases national income and stability.

To guarantee proper occupational safety and health policies and programs for public employees' well-being, the study suggests that the National Health Insurance Fund, which receives funding from company and employee payments, should be tasked with paying occupational health and safety compensation. The study also suggests that employers and employees should get training, seminars, and awareness raising. Additionally, the MoC-run government should create and put into place robust and well-thought-out occupational health and safety policies, programs, and administrations to lower the number of work-related illnesses, accidents, and injuries. Furthermore, to make it easier for workers to check their health at the moment of admission, throughout their employment, and when they leave, occupational health and safety clinics should be established in the healthcare industry. Similarly, to ensure that potential employees are aware of the issue, occupational health and safety should be included in college training curricula. OHS should be regarded as a human right since the constitution guarantees the right to life, and workers can exercise their right to life through OHS provisions. Finally, the management of MoC should put an emphasis on safety training and employees' communication in health and safety matters, accidents, injuries and deaths at the workplaces will be reduced at a high rate and productivity will be improved. The management of MoC also should show support, commitment and facilitate all health and safety programs in the organization, through clear and visionary leadership in occupational health and safety programs. Leaders inspire followers and so the managers and supervisors

should inspire employees to attend health and safety training and workshops in order to attain knowledge, skills and attitudes for their wellbeing.

Lastly, other research should focus on: Since it was discovered that noncompliance with OHS regulations was the issue, research is necessary to determine if the law's enforcement or other factors are to blame for noncompliance. The other area for further study is to carry out intervention research, such as a training course, with MoC employees. It is legally required and highly important to receive training on OHS-related topics. The purpose of the study is to determine if Ministry employees receive adequate OHS training. Organizations in Tanzania's private sector should be the subject of a comparable study using the same methods.

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Influence transportation management for timely delivery of medical supplies in public hospital: A case of medical store department

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Abstract

This study examined the influence transportation management for time delivery of medical supplies in public hospitals using Medical Store Department (MSD) as determinant of timely delivery of medical supplies. The study used cross-sectional research design whereby simple random sampling technique was used to select 55 respondents. The study used questionnaire as a tool to collect data through a self-administered approach to respondents. The collected data were analyzed using descriptive statistics method and multiple linear regression analysis. The findings revealed that, transportation management, were positive and significant related to timely delivery of medical supplies in public hospital ($P < 0.05$). The study concludes that, transport management, was important determinants that influence the timely delivery of medical supplies in public hospital. The study recommends that, to enhance the timely delivery of medical supplies, MSD should prioritize improving transportation management. This includes investing in reliable logistics partners, optimizing delivery schedules, and implementing advanced tracking systems to monitor transit times and delivery efficiency.

Keywords: *Transportation, management, time delivery, medical supplies, public hospitals, Medical Store Department (MSD)*

Introduction

Worldwide, the medical supply chain is a vital part of the healthcare system, providing the necessary supplies and equipment to support patient care (Goodarzian *et al.*, 2021). In recent years, there have been a number of factors that have affected the medical supply chain, including the rise in costs, the globalization of the healthcare industry, and the increasing complexity of the supply chain (Nanda *et al.*, 2023). In developed countries like Australia, China, United states the many organizations have implemented supply chain management (SCM) strategies to improve the efficiency and effectiveness of the medical supply chain (Khatter, 2022).

In the United States, the medical supply chain is highly developed, with a large number of supplier companies, distributors, and hospitals. The system is efficient and well-coordinated, with hospitals and other healthcare facilities working together to ensure that patients have

access to the supplies they need (Wang and Jie, 2020). In Europe, the medical supply chain is also highly developed, but there are some differences from the United States (Clauson, 2023). For example, in European countries like United Kingdom, Norway and Germany, the government plays a larger role in regulating the medical supply chain and hospitals are often more reliant on government subsidies to support their operations (Rossetti *et al.*, 2021).

In African countries, the situation of medical supply chain is not satisfactory compared to developed countries, this is due to a variety of factors, including corruption, lack of infrastructure, transportation management, warehouse management, and compliance to distribution and poor planning (Muhia *et al.*, 2017). As a result, many people do not have access to essential medicines and medical supplies. This can lead to a number of problems, including the spread of disease, increased mortality rates, and a decrease in the quality of life (Merkuryeva *et al.*, 2019).

Moreover, most local suppliers are unable to honor their procurement contractual obligations which include facilitation of local purchase orders of medicines and medical products and their delivery to Service delivery points (Arney, *et al.*, 2014). This greatly affects the availability of medicines in health facilities and thus the reliability of the supply chain (Arney, *et al.*, 2014). There is also the aspect of non-flexible tendering process and government supply chain being too rigid that it affects the supply chain (Binanay *et al.*, 2015). According to a study done in Nigeria related to essential medicines in Nigeria: foregrounding access to affordable essential medicines found that, poor leadership and governance of health system and uncoordinated value chain affect supply chain management. The supply chain is affected by poor procurement procedures that result in medicines stock outs, unregulated market prices for medicines and medical products, poor funding by the government as evidence in poor supply chain performance (Obuaku, 2014).

Inefficiencies in supply chain management are also brought about by lack of vital consumption data or unreliable data concerning actual demand and supply of medicines and medical products, lack of qualified personnel to manage the supply chain processes, irrational prescribing by prescribers and also irrational drug use (Obuaku, 2014). Unreliable means of transportation of commodities to Service delivery points, the absence of well-founded data for supplies tracking and documentation, lack of straightforward protocols at every level of the supply chain system and poor storage facilities for medicines, medical products, and vaccines are all barriers to effective supply chain management (Biza *et al.*, 2015). Some medicines and medical products have to be imported and as a result, health facilities experience delays in delivery of essential supplies to their respective Service delivery points (Khozaim *et al.*, 2014).

In Tanzania context the medical supply chain is in a state of flux, currently, 80 percent and 95 per cent of the total demand for drugs and medical equipment comes from abroad, while 100 per cent of laboratory reagents are also imported (WHO, 2018). The government is working to improve the system, but there are still many challenges. The biggest challenge is the lack of coordination between the different stakeholders, lack of transparency and accountability,

which can lead to corruption, lack of capacity of the health workforce includes the lack of trained personnel and the lack of adequate equipment (Ndungulile, 2018). Finally, the medical supply chain is also hampered by the lack of infrastructure, such as roads and ports. This makes it difficult to timely delivery of goods and services (Sallwa, 2023).

Studies like Sangari, *et al.* (2015) and Cook (2015) have pointed out different factors that organizations should ensure in an effective medical supply chain; these factors include transportation management. Efficient transportation management is vital for the timely and secure delivery of medical supplies. It involves optimizing logistics operations, selecting appropriate transportation modes (e.g., air, sea, road), and coordinating routes and schedules (Sigh *et al.*, 2016). Effective transportation management minimizes transit times, reduces costs, and ensures that supplies reach their destinations in a reliable manner. This factor becomes even more critical in emergency situations or when dealing with perishable items like vaccines or certain medications (Alghasawneh *et al.*, 2021).

Given the significance of the medical supply chain in providing healthcare services delivery. The United Republic of Tanzania has implemented numerous measures to ensure a consistent and adequate flow of medicines across the country. These initiatives include the establishment of a dedicated medical store department, continuous training programs for pharmacists and logistics officers, and periodic provision of an ample number of motor vehicles (Yatuwa, 2020). However, the availability of medicine to the general public remains a distressing concern.

There is widespread discontent among the population regarding medicine shortages in many government hospitals and health centers, primarily due to an inadequate transportation system that hampers timely delivery of goods and services (Regin *et al.*, 2022).

Despite the importance of the medical supply chain in the timely delivery of goods and services, the situation in the medical store department in Tanzania, which has mandated the medical supply chain in Tanzanian public hospitals, is different. **The Controller and Audit General's (CAG's) report of 2020/21 also established that medical equipment worth Sh1.17 billion meant for public health facilities was not delivered on time despite having been paid for by local government authorities (CAG, 2021).** This can result in a lack of access to medical treatments, diagnostics, vaccinations, and emergency care, which may have severe consequences for individuals' health and well-being.

Another audit conducted by the Office of the Inspector General (OIG) of the Global Fund (GF) grants to Tanzania in 2019 identified weaknesses in the procurement and supply chain management in the medical supply chain. These include excessive delays frequently experienced in the procurement process due to a lack of coordination in procurement planning among government departments and capacity shortcomings in the MSD and Procurement Management Unit (PMU) within the Ministry of Health (OIG, 2020). Thus, without timely access to public health facilities, individuals may face prolonged illness, worsening of existing conditions, or an increased risk of complications. For instance, delayed hospital delivery may limit the availability of critical care beds, leading to overcrowding and compromised patient care.

A number of research studies related to medical supply chain highlighted several challenges facing supply chain performance in Africa and they normally highlighted poor inventory control, unskilled labours, poor relationships, delivery systems, networks and capability as a

major hindrance in medical supply chain (Chari, 2017). Additionally, despite the hassle in capacitating practitioners with applicable skills and expertise, Supply Chain Management implementation still remains a concern in medical supply chain thus poor performance (Ambe and Weiss, 2015).

According to Moronge and Gatobu (2018) most of the organizations have focused more on pricing rather than quality and timely delivery. This indicated that, there scarcity of information related to the factors such as transportation management affecting medical supply chain towards timely delivered of goods in Tanzanian public hospitals. Consequently, this issue serves as a driving force for the researcher to examine the transport management as determinants for time delivery of medical supplies in public hospital within the Medical Store Department (MSD).

2.0 Literature Review

2.1 Theoretical Literature Review

Supply Chain Management (SCM) theory was applied in this study, credited to its founder Hau L. Lee in the early 1990s, is a holistic approach to the coordination and integration of all activities involved in the creation and delivery of goods and services from suppliers to end-users (Lee, 1993). The theory operates under the assumption that efficient collaboration among various entities within the supply chain can lead to enhanced overall performance and competitive advantage (Mentzer et al., 2001).

One of the key strengths of SCM theory lies in its ability to optimize processes and minimize costs through the synchronization of information, material, and financial flows (Chopra & Meindl, 2004). However, it is not without its weaknesses, as critics argue that it tends to oversimplify the complexity of real-world supply chain dynamics, and implementation challenges may arise due to the need for strong collaboration and information sharing (Swink et al., 2007).

In the context of the determinants for timely delivery of medical supplies in public hospitals, SCM theory is highly relevant. Transportation management, a crucial aspect of SCM, addresses the movement of goods from suppliers to end-users. Efficient transportation systems can significantly contribute to timely delivery (Christopher, 2016).

2.2 Empirical Literature Review

Smith, Johnson, A., & Brown (2020) study on transportation Management in Developed Countries: Ensuring On-time Delivery of Medical Supplies The objective of this study was to analyze the efficiency of transportation management in delivering medical supplies on time in developed countries. A comprehensive survey was conducted among major healthcare institutions and logistics providers in the selected developed nations. Data on transportation infrastructure, supply chain practices, and time delivery metrics were collected and analyzed.

The study revealed that developed countries with advanced transportation systems exhibited a higher rate of on-time delivery of medical supplies. Efficient logistics networks, advanced technologies, and streamlined supply chain processes contributed significantly to the positive outcomes.

Gupta, Patel & Khan (2018) assess the challenges in Transportation Management: A Study on Timely Delivery of Medical Supplies in Developing Countries. This study aimed to investigate the challenges and opportunities in transportation management affecting the timely delivery of medical supplies in developing countries. Field surveys and interviews were conducted in multiple developing nations to gather qualitative and quantitative data. Factors such as road conditions, infrastructure limitations, and regulatory barriers were assessed alongside the performance of existing transportation systems. The findings indicated that developing countries faced significant challenges, including poor road infrastructure and regulatory bottlenecks, leading to delays in medical supply delivery. However, the study also identified potential improvements through targeted interventions in infrastructure development and regulatory reforms.

Mbeki, Osei & Abubakari, (2019) Examine the Geographical and Infrastructural Challenges in Medical Supply Transportation in Africa. This study focused on assessing the impact of geographical and infrastructural challenges on the transportation management of medical supplies in various African countries. A cross-sectional analysis was conducted, considering diverse regions in Africa. Data was gathered through interviews, on-site observations, and collaboration with local healthcare facilities. Emphasis was placed on understanding the influence of geography and infrastructure on timely medical supply delivery. The study found that diverse geographical terrains and inadequate infrastructure in certain African regions posed substantial obstacles to on-time delivery. Recommendations included targeted investments in transportation infrastructure and innovative delivery solutions to address these challenges.

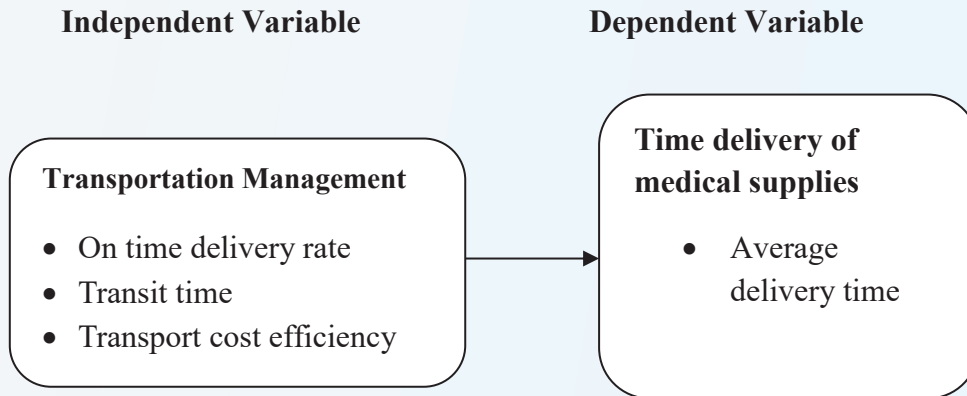
Mwakapala, Kimaro, & Ngowi (2021) study the Transportation Management of Medical Supplies in Tanzania: An Analysis of Challenges and Opportunities. This study aimed to provide an in-depth analysis of the transportation management system for medical supplies in Tanzania. Data was collected through a combination of interviews with key stakeholders, on-site visits to medical facilities, and a review of existing transportation policies. Both quantitative and qualitative analyses were employed to assess the efficiency of the current system. The study identified areas for improvement in the transportation management system in Tanzania, including the need for better coordination among stakeholders and investments in technology. It emphasized the importance of adaptive strategies to overcome the unique challenges faced in the Tanzanian context.

2.3 Conceptual Framework

Conceptual framework is the researcher understands of how the particular variables in his study connect with each other. Thus, it identifies the variables required in the research investigation. It is the researcher's "map" in pursuing the investigation (Kothari, 2017). The Figure 1 below shows the relationship between the variables in the formulated conceptual framework. From

the study the independent variables explained by transportation management in terms of on time delivery rate, transit time and transport cost efficiency while dependent variable explained by time delivery of medical supplies in public hospital.

Figure 24: Conceptual Framework



Source: Researcher, 2023

3.0 Research Methodology

3.1 Research Design

A research design is a strategy for choosing participants, study sites, and data collection methods to address the research questions (Kothari, 2017). In this study, a cross-sectional survey research design was used to assess the determinants for time delivery of medical supplies in public hospital using Medical Store Department (MSD) since it concern concerned with describing the traits of a single person or group at once.

3.2 Study Area

The study conducted in Medical Store Department (MSD) Central zone includes Dodoma region, Singida and Kiteto. The selection these zones based on the fact that, recent data reveals significant disparities in delivery times across regions, example Dodoma Regions experiencing a 15% improvement over the past year, (Tanzanian Ministry of Health and Social Welfare, 2022). This regional variation underscores the need for a comprehensive study to identify the factors influencing supply chain efficiency. (Tanzanian Ministry of Health and Social Welfare, 2022).

3.3 Research approach

The study employed quantitative research approaches. According to Zikmund *et al.* (2003) a quantitative approach is a research approach that sets out to quantify data to use statistics to analyze a data set. In this study, the quantitative approach was used to quantify the relationship between the independent and dependent variable.

3.4 Population

According to Stratton, (2021) a population is referred to as the total collection of elements about which the researcher wishes to make some inferences. The population of this study

included 100 staff Medical Store Department (MSD) in two selected zones in Tanzania (See Table 1).

Table 20: Study Population

S/N	Types of respondents	Population
1.	PMU staff	14
2.	Pharmacist	28
3.	Logistics	17
4.	Accountants	2
5.	Customer service	3
	Total	64

Sources: Medical Store Department Head Quarter (2023)

3.5 Sample Size and Sampling Procedure

3.5.1 Sample Size

Sampling size refers to the total number of elements to be selected from the study area (Smith, 2013). This study used the Yamane formula (1967) to determine the sample size because this is a method used where you have a known number of populations. The sample size obtained using the formula $n = N / (1 + N(e)^2)$

Where: N = Total population

n = Sample size of population

e = Error detected (5%)

Therefore, this was calculated as follows

$$n = 64 / (1 + 64(0.05)^2)$$

$$n = 55$$

Table 21: Proportional Sample Size Determination

Types of Respondents	Number of Respondents	Proportionate Sample	Sample size
PMU staff	14	$14/64 \times 55$	12
Pharmacist	28	$28/64 \times 55$	24
Logistics	17	$17/64 \times 55$	15

Accountants	2	$2/64 \times 55$	1
Customer service	3	$3/64 \times 55$	2
Total	64		55

3.5.2 Sampling Procedure

The sampling procedure is a method of selecting a representative sample from a larger population of interest. It involves selecting a subset of individuals or items from the population, based on predetermined criteria, to represent the population (Mishra & Alok, 2022). In this study the respondents included were sampled through simple random to select respondents

3.6 Data Collection Method

The study will use questionnaire as the main method of data collection. Questionnaires are the most commonly used methods when respondents can be reached and are willing to co-operate. Also, questionnaires provide a relatively cheap, quick and efficient way of obtaining large amounts of information from a large sample of people (Grassini & Laumann, 2020). The questions in each specific objective will be designed in form of Five- Likert scale questions (1= Strongly Agree, 2=Agree, 3= Neutral, and 4= Disagree, 5=Strongly Disagree) since Likert Scale questions is a universal method of collecting data, which it is easy to understand them, easy to draw conclusions, reports, results from the responses

3.7 Data Analysis Methods

Data analysis involves reducing accumulated data to a manageable size by developing summaries, looking for patterns and applying statistical techniques (Sileyew, 2019). In this study the data were analyzed using quantitative techniques includes descriptive statistic method and inferential statistic methods which helped the researcher to categorize, tabulate, manipulate and summarize data to obtain relevant answers for the research questions from the study.

Therefore, quantitative data were analyzed using descriptive statistics the descriptive statistics using mean and standard deviation. The relationship between dependent and independent variables were measured by multiple linear regression analysis to determine significant relationship between variables.

To determine the effect transportation management for time delivery of medical supplies in public hospital

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_n X_n + \epsilon \dots \dots \dots (i)$$

Where:

Y = Time delivery of medical supplies in public hospital

β_0 = Constant term

β_1 = Parameter to estimated

$X_1 \dots \dots \dots X_n$ = Determinants or Independent Variables (X_1 =on time delivery b rate,

X_2 =Transit time and X_3 =Transport cost efficiency

ε = Distributed error term

4.0 Findings and Discussion

This part presents “findings and discussion of the findings on the influence of transport management as determinant of timely delivery of medical supplies in public hospital using Medical Store Department (MSD).

4.1 Demographic Information of Respondents

Table 2 summarizes the demographic distribution of respondents in a study on the determinants of timely delivery of medical supplies in public hospitals. Among the 55 respondents, the majority (63.6%) are male, indicating potential gender-related perspectives in the data. Most respondents (78.2%) fall within the 43-52 age range, suggesting that the insights are largely drawn from older individuals. In terms of education, 50.9% hold a Bachelor's degree, while 32.7% have a Master's degree, reflecting a highly educated respondent group. Regarding work experience, 56.4% of respondents have 1 to 3 years of experience, indicating that the survey findings are influenced by those who are relatively new to their roles but have sufficient familiarity with the operational

Table 2: Distribution of respondents by sex (n=55)

Sex	Frequency	Percent
Male	35	63.6
Female	20	36.4
Age category	Frequency	Percent
22-32	2	3.6
33-42	10	18.2
43-52	43	78.2
Level of education	Frequency	Percent
Diploma	9	16.4
Bachelor Degree	28	50.9
Master degree	18	32.7
Working Experience	Frequency	Percent
Less than one year	1	1.8
1 to 3 year	31	56.4
4 to 6 years	17	30.9
7 and above	6	10.9
Total	55	100.0

Source: Research Findings, 2024

4.2 Descriptive Statistics Results for Transportation Management

Respondents were asked to rate their level of agreement for each variable that measured transportation management. The responses were collected using a five-point Likert scale questionnaire, where 5 indicated a strong agreement and 1 indicated a strong disagreement. The mean scores were calculated using SPSS and presented in Table 3 to provide a summary of the average responses for each item.

Table 3: Descriptive statistics of transportation management

Statement	Mean	Std. deviation	Interpretations
The current transportation management system rarely ensures on-time delivery of medical supplies.	3.490	1.386	Neutral
The current transportation management ensures swift transit times for medical supplies	3.218	1.227	Neutral
The transportation costs are well-managed, resulting in a high level of efficiency.	4.309	1.289	Agree

Source: Field data, 2024

Table 3 reveals mixed perceptions of the transportation management system's effectiveness in ensuring timely delivery of medical supplies. Respondents are neutral about the system's ability to ensure on-time delivery, with a mean score of 3.490 and significant variation in opinions (standard deviation of 1.386). A similar neutral stance is observed regarding the system's ability to ensure swift transit times, with a slightly lower mean of 3.218 and less variability (standard deviation of 1.227). However, respondents agree that transportation costs are well-managed, as indicated by a higher mean score of 4.309. These findings suggest that while transportation costs are efficiently managed, the system's effectiveness in ensuring timely and fast delivery could be improved to enhance overall service delivery in public hospitals.

These findings align with those of other studies, a similar neutral stance on transportation management effectiveness was observed in a study by Karanja (2020), which found that public hospitals in Kenya experienced moderate efficiency in supply chain logistics, with respondents highlighting delays in medical supplies despite cost-efficient management. In contrast, a study by Musa and Mwenda (2019) on Tanzanian public healthcare systems reported stronger agreement on the effectiveness of transportation management in ensuring both timely delivery and cost-efficiency, with higher mean scores and less variation in responses. This suggests that while transportation cost management tends to perform well across different contexts, the effectiveness in ensuring timely delivery varies, with some healthcare systems achieving better outcomes than others.

4.3 Inferential Statistics Results for Transportation Management

This section presents the inferential statistics results regarding to transportation management for time delivery of medical supplies in public hospital. Therefore, the multiple linear

regression analysis was applied to test the significant relationship between independent variables (On time delivery rate, transit time and transport cost efficiency) and dependent variable (time delivery of medical supplies in public hospital). The results presented in Table 8 demonstrate a favorable effect of transportation management and time delivery of medical supplies in public hospital. The adjusted R^2 value of 0.71 indicates that components related to transportation management, such as on time delivery rate, transit time and transport cost efficiency, account for 77% of the variability observed in time delivery of medical supplies in public hospital... Furthermore, the F-value reveals that the independent variables, namely on time delivery rate, transit time and transport cost efficiency predict the dependent variable (time delivery of medical supplies in public hospital) with statistical significance, as indicated by a p-value of less than 0.05.

Table 4: Summary of Regression Coefficients of transportation management

Variables	Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.
	B	Std. Error	Beta		
(Constant)	0.694	0.386		1.797	0.078
On time delivery rate	0.141	0.190	0.196	2.742	0.041
Transit time	0.275	0.199	0.338	1.383	0.023
Transport cost efficiency	0.328	0.160	0.423	2.058	0.045
Dependent Variable: Time delivery of medical supplies					
Adjusted R squared = 0.71					
F-value =2.81, p-value= 0.04					

Source: Field data, 2024

Moreover, the results presented in Table 4 demonstrate that on time delivery rate has a positive and significant relationship with time delivery of medical supplies in public hospital ($\beta=0.141$, $p\text{-value} < 0.05$). These findings suggest that a one-unit increase in time delivery rate within Medical Store Department can lead to a 14.1% increase in time delivery of medical supplies in public hospital.

Furthermore, according to the results presented in Table 4, there is a significant and positive relationship between transit time and time delivery of medical supplies in public hospital ($\beta=0.275$ and $p\text{-value} < 0.05$). These findings suggest that a one-unit increase in transit time within Medical Store Department can lead to a 27.5% increase time delivery of medical supplies in public hospital.

Additionally, the results presented in Table 4 indicated that, there is a significant and positive relationship between transport cost efficiency and time delivery of medical supplies in public hospital ($\beta=0.328$ and $p\text{-value} < 0.05$). These findings suggest that a one-unit increase in

transport cost efficiency within Medical Store Department can lead to a 32.8% increase time delivery of medical supplies in public hospital.

5.0 Conclusion and Recommendations

5.1 Introduction

This chapter provides a concise summary of the key findings, conclusions, and recommendations regarding the determinants of timely delivery of medical supplies in public hospitals using the Medical Store Department (MSD). It is divided into three distinct sections. The first section outlines the summary of findings, highlighting the major discoveries of the study. In the following section, conclusions are drawn based on each specific objective. The third section presents recommendations and identifies areas for further research.

5.1 Summary of the Findings

The findings related to influence transportation management for time delivery of medical supplies in public hospital, the findings indicate that respondents perceive the current transportation management system for medical supplies as neutral in terms of ensuring on-time delivery and swift transit times, with notable variability in opinions. However, they agree that transportation costs are well-managed. These results suggest that while cost efficiency is recognized, there are perceived shortcomings in delivery punctuality and transit speed, highlighting areas for improvement. Enhancing these aspects could lead to better service delivery in public hospitals, thereby improving patient care and operational efficiency.

The findings related to the influence of warehouse management for time delivery of medical supplies in public hospital, the findings revealed that, respondents generally disagreed with the statement that preventing stock outs ensures timely delivery, suggesting that stock outs are not seen as a significant factor. Conversely, there was strong agreement that optimal inventory turnover and streamlined order processing are crucial for the rapid and consistent delivery of medical supplies. These findings imply that public hospitals should focus on optimizing inventory turnover and improving order processing to enhance supply chain efficiency and ensure prompt delivery of medical supplies.

The findings related to the influence of compliance to distribution for time delivery of medical supplies in public hospital. The findings show strong agreement that delivery schedules are generally adhered to, ensuring punctuality, as indicated by the high mean score and low variability. Additionally, respondents agree that order fulfillment processes are reliable and accurate. There is also a general agreement, with slightly more variability, that returns are infrequent, suggesting effective quality control measures. These findings imply that strict adherence to delivery schedules, high accuracy in order fulfillment, and robust quality control are crucial for the timely delivery of medical supplies in public hospitals.

5.2 Conclusion

The study found that, transportation management in terms of on time delivery rate, transit time and transport cost efficiency were positive and significant related to timely delivery of medical supplies in public hospital. The study concludes that, transport management in Medical Store

Department (MSD) was important determinants that influence the timely delivery of medical supplies in public hospital.

Moreover, the study found that, warehouse management in terms of on inventory turnover and order processing time were positive and significant related to timely delivery of medical supplies in public hospital. The study concludes that, warehouse management in Medical Store Department (MSD) was important determinants that influence the timely delivery of medical supplies in public hospital.

Furthermore, the study found that, compliance to distribution in terms of Compliance with delivery schedules, accuracy of order fulfillment and return rate were positive and significant related to timely delivery of medical supplies in public hospital. The study concludes that, compliance to distribution in Medical Store Department (MSD) was important determinants that influence the timely delivery of medical supplies in public hospital.

5.3 Recommendations

Based on the findings, the study recommends that: To enhance the timely delivery of medical supplies, MSD should prioritize improving transportation management. This includes investing in reliable logistics partners, optimizing delivery schedules, and implementing advanced tracking systems to monitor transit times and delivery efficiency. Additionally, training staff on best practices for cost-effective transport management can further boost performance in this area.

Moreover, to ensure efficient warehouse management, MSD should focus on reducing inventory turnover time and streamlining order processing. Implementing automated inventory management systems, conducting regular inventory audits, and employing data analytics to forecast demand can help maintain optimal stock levels and expedite order processing. Staff training on inventory best practices and process optimization can also contribute to improved warehouse management.

Furthermore, MSD should enhance compliance to distribution by strictly adhering to delivery schedules, ensuring high accuracy in order fulfillment, and minimizing return rates. This can be achieved by adopting robust quality control measures, using technology to track and manage deliveries, and maintaining clear communication channels with all stakeholders involved in the distribution process. Regular training and performance reviews can help maintain high standards of compliance and ensure the timely delivery of medical supplies.

5.4 Area for Further Study

Similar studies should be conducted in other areas to explore the factors that contribute to the timely delivery of medical supplies in public hospitals, in order to generalize the findings.

Another study should examine the role of human resource capacity, including the training and skills of personnel involved in the supply chain management of medical supplies, in ensuring timely delivery. This area of research could focus on the effectiveness of training programs,

the availability of skilled personnel, the impact of staff shortages or turnover, and strategies for enhancing the capabilities of the workforce to improve supply chain performance in the context of medical supply delivery.

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Determining How Inventory Management Influences Customer Satisfaction at the Selected Health Centers, Dodoma Region

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Abstract

This study investigates the persistent challenges in inventory management at health centers in the Dodoma region, which significantly impact customer satisfaction. Inefficient practices, such as inadequate stock levels and poor tracking systems, often lead to stock outs and delays in service delivery, adversely affecting patient care. Utilizing the supply chain management, the research aims to evaluate how these inventory management practices influence customer satisfaction. A cross-sectional design was adopted, surveying 250 individuals with 83 respondents selected through simple random and purposive sampling. The analysis employed descriptive statistics, revealing a significant relationship between effective inventory management and customer satisfaction. The findings suggest that enhancing inventory tracking systems and optimizing stock levels can significantly improve service delivery and patient satisfaction in health centers. The study concludes that effective inventory management is crucial for enhancing customer satisfaction in the Dodoma region's healthcare sector.

Keywords: *Inventory Management, Customer Satisfaction, Healthcare Sector, Supply Chain Management, Dodoma Region*

1.0 Introduction

Inventory management plays a vital role in determining customer satisfaction in the pharmaceutical logistics sector, as it directly affects product availability, delivery speed, and overall service quality. Effective inventory management ensures that pharmaceutical products are adequately stocked, reducing the risk of shortages that can cause delays and dissatisfaction (Ahsan & Rahman, 2017). It also helps avoid overstocking, which can lead to waste, especially with products that have a short shelf life, like medicines.

In developed nations like the USA, UK, and Germany, efficient inventory management in pharmaceutical logistics significantly boosts customer satisfaction. Advanced technologies such as real-time tracking, automated stock monitoring, and data analytics allow for precise demand forecasting, reducing stockouts and ensuring prompt deliveries (John et al., 2020; Ghomrassi & Tigu, 2017). These countries also benefit from well-established infrastructure and regulatory frameworks that streamline inventory processes and ensure product availability, which is crucial for meeting customer expectations in the healthcare sector (Ahsan & Rahman, 2017).

Across the African continent, inventory management practices in the pharmaceutical sector are less advanced compared to developed nations. Issues such as poor demand forecasting, inadequate infrastructure, and limited access to technology contribute to frequent stockouts and delivery delays, negatively impacting customer satisfaction (Opati, 2018). Many African countries struggle with inconsistent supply chains, often exacerbated by weak regulatory oversight and a lack of real-time tracking systems, leading to inefficiencies in inventory control (Kagaruki, 2019).

In East Africa, nations like Kenya, Uganda, and Ethiopia experience similar challenges. The region's pharmaceutical logistics sector is characterized by fragmented supply chains, limited storage capacity, and inefficient inventory systems. These factors contribute to frequent product shortages and delays in delivery, directly affecting customer satisfaction (Odiwuor, 2020). However, countries are increasingly investing in better inventory management systems, with a focus on improving demand forecasting and distribution channels (Alemkere, 2019).

In Tanzania, the pharmaceutical logistics sector faces persistent challenges in inventory management. Despite recent investments in improving supply chain operations, poor inventory tracking, inconsistent stock levels, and limited storage facilities continue to hinder customer satisfaction (Mahmud, 2020). Stockouts of essential medicines, delays in distribution, and issues with product availability remain prevalent, indicating the need for more efficient inventory management practices. Addressing these challenges through technology adoption, better forecasting, and enhanced storage solutions could significantly improve customer experiences in Tanzania (Kagaruki, 2019). Overall, optimizing inventory management across all these contexts through the use of technology, better demand forecasting, and improved infrastructure can enhance customer satisfaction by ensuring timely delivery and product availability.

2.0 Literature Review

2.1 Theoretical Literature

2.1.1 Supply Chain Management Theory (SCM)

Supply Chain Management (SCM) theory has evolved over time, with key contributions from scholars like Lambert, Cooper, and Lamb, who helped define SCM in the 1980s and 1990s (Ooi et al., 2019). SCM focuses on the deliberate coordination of sourcing, procurement, and

logistics to streamline processes and improve efficiency across the entire supply chain (Ghoumrassi & Tigu, 2017). Effective SCM reduces waste, enhances risk management, and ensures timely delivery of products or services, thus improving customer satisfaction (John et al., 2020).

Supply Chain Management theory has been widely applied in various sectors, including retail, manufacturing, and pharmaceutical logistics, where it has proven instrumental in achieving cost reduction and efficiency. It emphasizes the integration of global logistics systems and aligning supply with demand to generate value for businesses (Arsanam, 2018). However, the theory faces criticism due to the inherent complexity of global supply chains and external dependencies like geopolitical factors, which can disrupt operations (Taddesse, 2017).

Linking Supply Chain Management theory to this study, it becomes evident that in pharmaceutical logistics, effective supply chain management is crucial for improving customer satisfaction. Efficient inventory management, transportation, and order processing are essential for ensuring timely delivery and meeting customer expectations in Tanzania and beyond (Mahmud, 2020; Kagaruki, 2019).

2.3 Empirical Literature

Srinivas and Rao (2018) investigated inventory management's role in customer satisfaction within the retail sector in India. The study demonstrated that effective inventory management, including maintaining optimal stock levels, accurate demand forecasting, and timely replenishment, directly influenced customer satisfaction by reducing stockouts and improving service levels.

Ayele (2020) explored the impact of an integrated pharmaceutical logistics system (IPLS) on logistics performance and user satisfaction in Ethiopia. The study found that improved inventory management through IPLS led to higher customer satisfaction, primarily due to reduced delays in medicine availability and more accurate inventory levels.

Mahmud (2020) focused on inventory management practices in Tanzania's pharmaceutical sector, revealing that efficient inventory systems at medical facilities ensured consistent availability of essential drugs, significantly impacting patient satisfaction and reducing the time spent waiting for prescriptions.

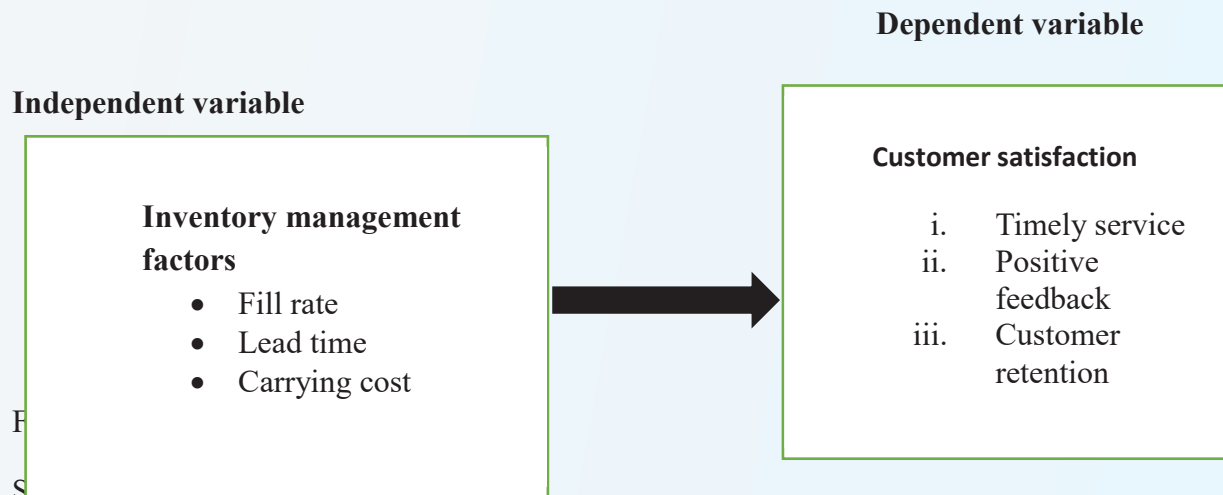
Opati (2018) analyzed the logistics of medical supplies in Kenyan public health facilities. The research highlighted that poor inventory management practices, such as inadequate stock control and inaccurate record-keeping, led to frequent stockouts, adversely affecting patient satisfaction and trust in healthcare services.

Kurniawan (2023) examined the relationship between inventory management and customer satisfaction in a pharmaceutical setting in Indonesia. The study showed that maintaining

accurate inventory records and promptly restocking products were critical to ensuring product availability, thereby enhancing customer satisfaction and loyalty.

2.4 Conceptual Framework

This study was guided by independent and dependent variables indicating relationship between them. From that point of view, the independent variable is inventory management factors while dependent variable is customer satisfaction.



3.0 Method

3.1 Research Design

A cross-sectional research design was adopted, capturing data at a specific point in time to analyze customer satisfaction with pharmaceutical logistics services. This design enables the identification of relationships between logistics factors and customer satisfaction, providing a comprehensive snapshot of current service performance.

3.2 Research Approach

The study employed a quantitative research approach, focusing on the collection of numerical data for statistical analysis. Quantitative research, as described by Bryman and Bell (2015), provides objectivity, reducing biases linked to subjective interpretation. This approach is crucial for understanding the relationship between logistics service factors such as delivery time, accuracy, and availability and customer satisfaction, allowing for the application of statistical tests to determine the significance of these relationships.

3.3 Study Area

The study was conducted in five districts of Dodoma Region. The selection was based on the region's logistical challenges in healthcare service delivery, particularly concerning pharmaceutical logistics. These districts were selected for their geographic representation and

to capture diverse logistical challenges affecting customer satisfaction with pharmaceutical services in rural and urban settings.

3.4 Study Population

The study population included 250 health officers working in 25 health centers within the selected districts of Dodoma. These officers were chosen due to their direct involvement with pharmaceutical logistics and service delivery, making them key informants for assessing logistics efficiency and customer satisfaction.

3.5 Sample Size

Using the Yamane formula, the sample size was determined to be 83 respondents. This sample was selected to ensure sufficient representation across different health centers and to provide reliable insights into customer satisfaction factors within the logistics services framework.

3.6 Data Collection Instruments

Data were collected using structured questionnaires. The questionnaires focused on gathering quantitative data related to delivery speed, order accuracy, and stock availability in pharmaceutical logistics. The collected data were then analyzed using descriptive statistics and multiple linear regression to explore the impact of logistics factors on customer satisfaction, ensuring a thorough examination of the service quality.

3.7 Sampling Techniques

A combination of simple random sampling and purposive sampling was used. Simple random sampling was employed for operational staff to ensure every member of the population had an equal chance of selection, ensuring a representative sample. Purposive sampling targeted senior staff to ensure that key decision-makers provided valuable insights into strategic logistics issues affecting customer satisfaction.

3.8 Validity and Reliability

Validity refers to the degree to which the research instrument accurately reflects the concept it is intended to measure (Cohen et al., 2014). To enhance validity, the research tools were reviewed by experts, including the study supervisor, ensuring that the data collection instruments were appropriate and effective for capturing relevant information.

3.8.2 Reliability of Data

Reliability refers to the consistency of a measurement tool in producing stable and accurate results (Alvi, 2016). Cronbach's Alpha was used to test the internal consistency of the research variables, with a reliability coefficient of 0.7 or above being considered acceptable. This test ensures that the measurement of variables such as delivery accuracy and customer satisfaction was reliable and consistent.

Table 1: Reliability Statistics

Variables	Cronbach's Alpha
Delivery Accuracy	0.805
Source: Field Data, 2024	

3.9 Data Analysis

Data were analyzed using descriptive analysis

4.0 Results

4.1 Descriptive Analysis

This study aims to delve into how different inventory management strategies and practices contribute to enhancing customer satisfaction within the pharmaceutical logistics context. Through exploring these dynamics through quantitative analysis, particularly using multiple regression techniques, this research seeks to identify which aspects of inventory management most significantly influence customer satisfaction levels. Understanding these factors not only provides actionable insights for pharmaceutical logistics providers but also contributes to enhancing overall service quality and customer experience in the healthcare supply chain.

The analysis of the data reveals moderate levels of satisfaction across all key areas of distributor service, including fill rate, lead time, and carrying costs. The mean scores, ranging from 3.49 to 3.72, suggest that while most respondents are generally satisfied with the distributor's performance, there are areas for improvement. Notably, lead time received the highest level of satisfaction, with a mean score of 3.72, indicating that the time taken to process and deliver orders is generally acceptable. However, the relatively high standard deviations, particularly for fill rate and carrying costs, point to variability in customer experiences, suggesting inconsistencies in service delivery. Improving consistency in restocking speed, pricing, and overall fulfillment times could help enhance customer satisfaction further.

Statement	N	Minimum	Maximum	Mean	Std. Deviation
I am satisfied with the speed at which products are restocked when they are out of stock.	83	1	5	3.49	1.13
The distributor's fill rate ensures that I receive the medications I need on time and without errors.	83	1	5	3.65	1.07

The time it takes for the pharmaceutical distributor to process and deliver my orders is reasonable.	83	1	5	3.72	1.05
I am satisfied with the speed at which the distributor fulfills my orders.	83	1	5	3.68	1.09
The pharmaceutical distributor I use effectively manages their inventory costs to keep prices competitive.	83	1	5	3.60	1.12
I am satisfied with the pricing of medications at the distributor.	83	1	5	3.55	1.15

5.0 Discussion

The analysis of customer satisfaction regarding the speed at which products are restocked revealed a mean score of 3.49, indicating moderate satisfaction. However, the high standard deviation of 1.13 suggests considerable variability in respondents' experiences. This inconsistency could stem from supply chain disruptions or inefficiencies that disrupt the timely replenishment of stock. Effective restocking practices are essential in the pharmaceutical sector to ensure that healthcare providers have access to necessary medications without delays (Sweeney & Soutar, 2020; Simangunsong et al., 2021). Addressing these inconsistencies is crucial for enhancing overall customer satisfaction, as it directly impacts the ability of healthcare providers to deliver timely patient care.

Satisfaction with the distributor's fill rate garnered a mean score of 3.65, which reflects a moderate level of contentment regarding the availability of medications on time and without errors. The standard deviation of 1.07 indicates variability in experiences among respondents, suggesting that some customers encounter issues with order fulfillment. A high fill rate is pivotal in the pharmaceutical industry as it directly affects patient care and medication adherence (Chong et al., 2019). Enhancing the fill rate through improved inventory practices can significantly impact customer satisfaction and ensure that healthcare providers can rely on distributors to meet their medication needs efficiently.

The highest satisfaction level was reported for lead time, with a mean score of 3.72. This finding emphasizes the importance of timely processing and delivery of orders in fostering customer satisfaction. Shorter lead times are linked to improved customer experiences and loyalty within the pharmaceutical logistics sector (Mason et al., 2020). Despite the favorable score, there remains room for improvement. Ongoing efforts to streamline lead times, such as optimizing order processing and transportation logistics, can further enhance customer satisfaction and reinforce the distributor's reliability as a partner in healthcare.

Respondents rated their satisfaction with order fulfillment speed at 3.68, indicating a generally favorable perception. However, the standard deviation of 1.09 suggests inconsistencies in fulfillment performance that could detract from overall customer satisfaction. Effective order fulfillment is vital for meeting customer expectations and maintaining a competitive advantage in pharmaceutical logistics (Gupta & Singh, 2021). By improving fulfillment processes, distributors can not only meet customer demands more reliably but also strengthen relationships with healthcare providers, ultimately leading to improved service quality.

Satisfaction regarding the distributor's management of inventory costs received a mean score of 3.60, while pricing satisfaction was slightly lower at 3.55. These scores indicate a general appreciation for competitive pricing but also highlight areas for potential improvement. Effective management of inventory costs can enhance pricing strategies and improve customer perceptions of value (Nguyen & Cao, 2022). By optimizing inventory management practices, distributors can better align pricing with customer expectations and increase overall satisfaction, ensuring that healthcare providers can access necessary medications at competitive prices without compromising quality.

6.0 Conclusion and Recommendations

This study highlights the essential role of effective inventory management strategies in enhancing customer satisfaction within the pharmaceutical logistics sector. The findings indicate moderate satisfaction levels across key service dimensions such as fill rate, lead time, and order fulfillment speed, with the highest satisfaction related to lead time. However, the observed variability in customer experiences, evidenced by high standard deviations in fill rates and carrying costs, suggests that inconsistencies in service delivery must be addressed.

To improve satisfaction, it is recommended that pharmaceutical distributors optimize restocking practices through better inventory monitoring and demand forecasting, enhance fill rate accuracy via improved order fulfillment processes, streamline lead time by adopting automated systems, ensure consistency in order fulfillment through standard operating procedures, and evaluate pricing strategies to remain competitive. By implementing these strategies, pharmaceutical logistics providers can enhance service quality and ultimately improve customer satisfaction in the healthcare supply chain.

7.0 Areas for Further Studies

Although this study sheds light on the impact of inventory management practices on customer satisfaction within pharmaceutical logistics, further research is recommended to explore additional dimensions of this relationship. Future studies could examine the influence of integrating advanced technologies, such as artificial intelligence and real-time data analytics, on inventory management effectiveness and customer satisfaction.

8.0 Limitation

The study was limited by the scope of its focus on the Dodoma Region, which may not reflect the procurement practices and challenges faced by other regions or sectors in Tanzania. Furthermore, data collection was constrained by the availability and responsiveness of

participants, which could have influenced the representativeness of the findings. The cross-sectional nature of the study also means that changes over time were not captured, and future longitudinal studies could provide deeper insights into how procurement practices evolve and impact lead time management.

9.0 Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper. All efforts were made to ensure that the research process and the presentation of findings were objective and free from any external influences or biases that could compromise the integrity of the study. The views expressed in this paper are solely those of the authors and do not necessarily reflect the positions of the organizations or individuals involved.

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The Effect of Budgeting Practices on the Public Procurement Performance of LGAs In Dodoma.

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Abstract:

This study investigated the effects of budgeting practices on public procurement performance within local government authorities in Tanzania, focusing on Kongwa and Mpwapwa Districts Councils. A mixed-methods approach was adopted, combining qualitative and quantitative data collection methods for a comprehensive analysis. The study included total population of 191 of employees working in Kongwa and Mpwapwa Districts Councils. Respondents for surveys were selected using simple random sampling, while key informants such as finance officers and procurement officers were purposively sampled. The sample size for the questionnaire surveys and interviews was determined based on the population size and desired level of confidence. Data was collected through structured questionnaire surveys and semi-structured interviews. Descriptive, multiple linear regression analysis was utilized for quantitative data, while content analysis was employed for qualitative data. The findings revealed significant relationships between budgeting practices and public procurement performance, with implications for enhancing efficiency and effectiveness in local government procurement processes. The results suggest that financial reporting, budget planning, and expenditure control practices significantly influence public procurement performance in LGAs in Dodoma. The study recommend to strengthen Financial Reporting Mechanisms: This may involve providing training and resources to finance departments, establishing clear reporting guidelines, and implementing systems for real-time financial data management. It is further recommended to improve Budget Planning and Monitoring by developing budgets that are aligned with strategic objectives and based on realistic revenue projections and expenditure estimates.

Keywords; *Budgeting Practices; Public Procurement Performance; Local Government Authorities*

1.0 Introduction

The dynamic global landscape in recent years has witnessed a pronounced acknowledgment of the pivotal role played by effective budgeting practices in shaping the performance of public sectors worldwide (Lapuente & Van de Walle, 2020; Adam et al., 2021; World Bank, 2020; Andrews, 2018). This heightened recognition is propelled by the increasing demands for efficient resource allocation and the challenges posed by globalization (Adam et al., 2021; Lapuente & Van de Walle, 2020; Moynihan, 2018). International bodies, prominently the World Bank, underscore the paramount importance of robust budgeting practices as a fundamental cornerstone for achieving sustainable development goals on a global scale (Adam et al., 2021; World Bank, 2020; Hood, 2019). The intricate interplay between budgeting mechanisms and the overall success of public sector initiatives has become a focus of extensive research and policy discourse, reflecting the urgency to establish governance frameworks that ensure transparency, accountability, and responsible resource management (Adam et al., 2021; Lapuente & Van de Walle, 2020; Moynihan, 2018).

African governments grapple with the intricate challenge of balancing resource allocation amidst pressing development needs (Fourie & Malan, 2020; Kapika et al., 2019; Mo Ibrahim Foundation, 2020). Stakeholders within the African context increasingly recognize the centrality of budgeting practices in fostering accountable and transparent governance (Fourie & Malan, 2020; Kapika et al., 2019; Kimuyu, 2017). In the midst of varied socio-economic and political landscapes, the harmonization of budgeting practices emerges as a common thread in the pursuit of sustainable development across the African continent (Fourie & Malan, 2020; Kapika et al., 2019; Mo Ibrahim Foundation, 2020).

Within the distinctive dynamics of the East African region, governments face unique challenges in their pursuit of sustainable development (Kenny, 2017; Ondabu et al., 2021; Mwenda, 2019). The imperative for sound budgeting practices is magnified as these nations strive to optimize resource utilization (Kenny, 2017; Ondabu et al., 2021; Mwenda, 2019). Consequently, the scrutiny on the performance of procurement processes intensifies due to the far-reaching ramifications of inadequate adherence to established protocols (Kakwezi & Nyeko, 2019; Ondabu et al., 2021; Mwenda, 2019).

In the specific context of Tanzania, persistent concerns have been raised regarding their capacity to effectively manage finances and execute procurement processes (Pasape & Godson, 2022; Matto, 2021; Kimuyu, 2017). Budgeting has been subjected to issues including, inadequate budget allocation, mismanagement, and failure to adhere to procurement plan. Despite recent reforms in the public procurement system, including the establishment of the Public Procurement Regulatory Authority (PPRA) and the adoption of the Public Procurement Act of 2011, challenges endure (Pasape & Godson, 2022; Matto, 2021; Mwenda, 2019). Delayed insufficient budgeting practices, and limited capacity within local government authorities remain significant obstacles to efficient public service delivery (Pasape & Godson, 2022; Matto, 2021; Kimuyu, 2017). Proper budgeting ensures availability of fund, cost effectiveness, and timely execution of the project activities.

A comprehensive understanding of the tie to budgeting practice by Tanzanian local government authorities emerges from a study conducted in South Africa, revealing issues akin to those encountered in Tanzania (Fourie & Malan, 2020; Kimuyu, 2017; Ondabu et al., 2021). Challenges especially under-spending of budgets, and a lack of transparency in public procurement were identified as formidable obstacles (Fourie & Malan, 2020; Kimuyu, 2017; Ondabu et al., 2021). Despite reforms and initiatives in the public procurement system and efforts to enhance transparency and accountability, substantial hurdles remain (Pasape & Godson, 2022; Matto, 2021; Kimuyu, 2017). Delayed procurement processes, corruption, and inadequate budgeting practices within local government authorities have the potential to hinder efficient public service delivery (Pasape & Godson, 2022; Matto, 2021; Kimuyu, 2017).

The 2020 report from the Controller and Auditor General (CAG) highlighted inadequate and inefficient budgeting practices in Local Government Authorities in Tanzania, including Kongwa and Mpwapwa District councils. This has led to delay in project implementation, budget overruns and service delays. This is resulted into substantial loss when a contract is breached and low-quality of services or goods with high cost. Studies conducted by David - Barrett & Fazekas 2020; Fazekas & Blum 2021; Lapuente & Van de Walle 2020; Matto 2021; Ruhago et al. 2023).

Also, elsewhere studies focus on challenges facing procurement performance in local Government Authorities, passage & Godson (2022) Amin (2005), Fazekas & Blum (2021a), and Matto (2021); factors affecting public procurement performance, Ketemaw, (2020); Procurement practice in parastatal organization, Mwaipopo (2017) and found out that procurement officers are competent in a wide variety of generic procurement but financial resources and supporting facilities are the hindrance factors towards procurement function; assessing the influence of staff competence on performance of procurement management Unit, Eliah and Ahumani (2020)

Therefore, there is a lack of studies focusing on the link between budgeting practice and public procurement Performance. It is in this regard that a study on assessing the effect of budgeting practice practices on Public Procurement Performance in Local Government Authorities.

2.0 Literature Review

Theoretical Review

Agency Theory was propounded by Michael C. Jensen and William H. Meckling in 1976. It is a fundamental theory in the field of economics and organizational studies. Agency Theory addresses the relationship between principals (owners or stakeholders) and agents (individuals or entities hired to perform tasks on behalf of the principals). The theory assumes that there is a natural conflict of interest between these two parties due to divergent goals and information asymmetry. Principals delegate authority to agents to act on their behalf, and the challenge lies in aligning the interests of both parties. Agency Theory suggests that the introduction of monitoring mechanisms, contracts, and incentives can help mitigate the principal-agent

conflict and ensure that agents act in the best interest of the principals.

Numerous scholars have applied Agency Theory in various contexts. For instance, Fama and Jensen (1983) applied the theory to corporate finance, emphasizing the role of information asymmetry. Eisenhardt (1989) extended the theory to strategic management, focusing on the governance mechanisms in large corporations. In the context of this study, researchers like Mjema (2018) have employed Agency Theory to understand the relationship between principals (local government authorities) and agents (those involved in budgeting practices and public procurement). Mjema's work, in particular, explored the application of Agency Theory to revenue mobilization practices at Local Government Authorities (LGAs) in Tanzania.

Agency Theory is highly relevant to this study as it provides a lens through which to examine the relationship between local government authorities (principals) and the entities responsible for budgeting practices and public procurement (agents) within Kongwa and Mpwapwa Districts Councils. The theory's emphasis on mitigating conflicts of interest aligns with the study's focus on understanding how budgeting practices influence public procurement performance. By applying Agency Theory, this study can analyze the mechanisms put in place by local government authorities to align the interests of stakeholders involved in financial management and procurement, shedding light on potential challenges and solutions within the principal-agent relationship.

Empirical Literature Review

The procurement process is a critical aspect of organizational operations, encompassing the acquisition of goods and services necessary for sustaining and advancing the core mission. Nonetheless, for Local Government Authorities in Tanzania, the efficiency and effectiveness of procurement operations hold substantial implications for economic growth and public welfare (Fazekas & Blum, 2021a). However, the manner in which financial resources are allocated and managed through budgeting practices plays a pivotal role in shaping procurement outcomes.

The budgeting practices employed by organizations, both public and private, hold power over resource allocation and expenditure patterns. However, Kakwezi (2019) ascertain that traditional budgeting methodologies, with their historical focus, compete with more contemporary approaches like zero-based budgeting, which emphasize a thorough re-evaluation of every expense. Thus, understanding the prevalent budgeting paradigms is essential to comprehending how financial decisions impact the procurement process in the Local Government Authorities.

Studies elucidate that a pivotal aspect of the budgeting-procurement nexus lies in the alignment between an organization's strategic objectives and its procurement strategies and budgets, as financial blueprints, must mirror the overarching goals of an entity (Changalima, Mushi, & Mwaiseje, 2020; Kakwezi & Nyeko, 2019). In Tanzania, where diverse sections in Local Government coexist, the extent to which budgets reflect section specific priorities

significantly influences procurement performance. Budgeting, as a tool, extends beyond mere resource allocation; it encompasses monitoring and control Practices vital for financial stewardship (Fazekas & Blum, 2021b). How rigorously LGAs adhere to budgetary constraints directly impacts procurement efficiency. Striking a balance between fiscal prudence and procurement expediency is a delicate dance.

Adjepong and Anane (2022), aimed at assessing the factors affecting procurement performance in the public. Procurement planning and staff competency were the key variables used to assess procurement performance in the Asokwa and Oforikrom Municipal Assemblies due to their recognition in the public procurement Act 914 of Ghana in Section 21 under part 3 for procurement planning and staff competency also addressed in Section 18(3). The findings of the study revealed that procurement planning and staff competency affected procurement performance. In addition, all staff competencies listed provided a mean score within the range of 4.00 and above which implies that they all affect procurement performance. The researcher recommended future studies using same factors as variables of measure for a different case area to serve as variation and addition to knowledge. It was also suggested that other factors including budget or resource allocation, political interference, procurement procedures, contract management, quality of items produced, time delivery or lead time and many more be used as variables of measuring procurement performance in future studies.

INDEPENDENT VARIABLE

DEPENDENT VARIABLE

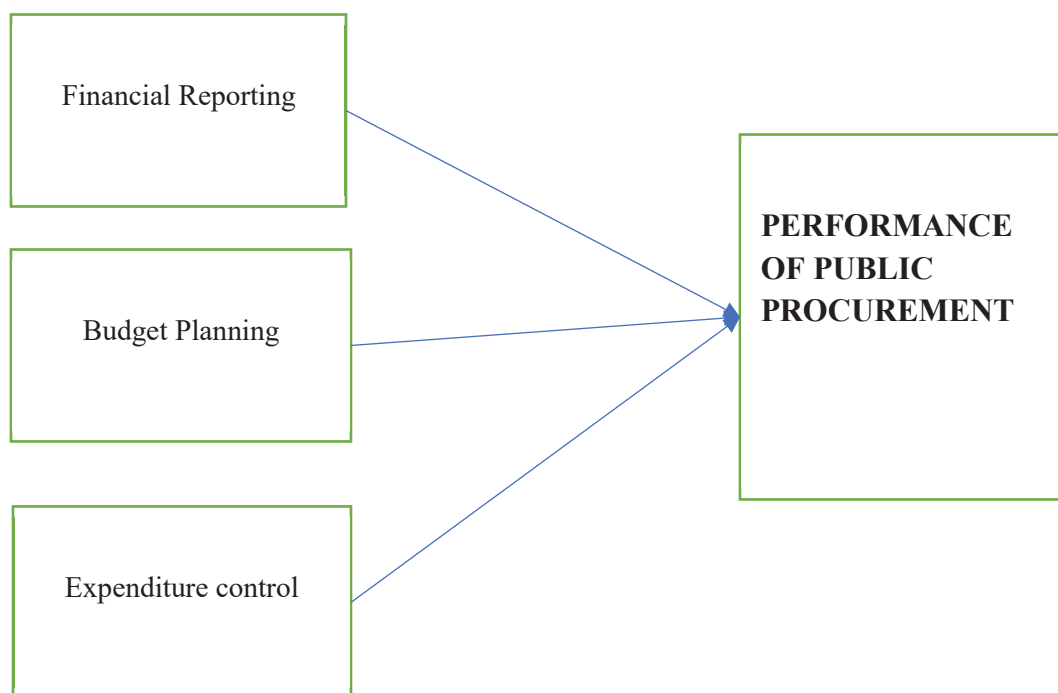


Figure 2.1: Conceptual Framework**Source: Researcher's Design (2023)****3.0 Material and Methods**

This study adopted a mixed-methods research approach to comprehensively investigate the effects of financial control practices on public procurement performance in local government authorities, focusing on Kongwa and Mpwapwa Districts Councils in Tanzania. The qualitative dimension involved interview to the senior management officers related to financial control practices and public procurement, On the quantitative side, structured questionnaires were administered to key stakeholders within the local government authorities, including finance officers, procurement officers, and end users.

A cross-sectional research design was used to capture a snapshot of the relationship between financial control practices and public procurement performance within local government authorities in Kongwa and Mpwapwa Districts Councils in Tanzania. The cross-sectional approach involved collecting data at a single point in time, allowing for a simultaneous examination of various factors. The Dodoma region chosen for its significance as the capital city of Tanzania, where a multitude of administrative activities occurred (Changalima et al., 2020). Within Dodoma, the research focused on employees working in two specific councils: Kongwa and Mpwapwa Districts because the chosen districts offered a diverse array of economic conditions, geographical features, and population demographics.

The study employed a dual sampling strategy, utilizing simple random sampling for respondents and purposive sampling for key informants. In selecting respondents, a simple random sampling method was employed, ensuring an equal opportunity for every employee within Kongwa and Mpwapwa Districts Councils to be included in the sample.

The computed sample size from the population of 1911 employees was approximately 129 using Yamane's formula; 60 of Mpwapwa, and 69 of Kongwa. A structured questionnaire was administered to employees within Kongwa and Mpwapwa Districts Councils using simple random sampling. While, interviews were conducted with key informants, including finance officers and procurement officers, using a semi-structured approach.

For quantitative data analysis, descriptive analysis was deemed appropriate for demographic and variables description. On the qualitative data, content analysis technique was used to analyze data obtained from key informant interviews, focus group discussions, and document reviews. The combined use of descriptive analysis and regression analysis for quantitative data and content analysis for qualitative data ensured a comprehensive examination of both data types, facilitating a holistic understanding of the intricacies between financial control practices and public procurement performance within Kongwa and Mpwapwa Districts Councils.

4.0 Findings and Discussion

Description of the respondents' Demographic Characteristics

In this section, we delve into the demographic characteristics of the respondents who participated in the study. Understanding the profile of the participants provides valuable context for interpreting the subsequent findings related to financial control practices and public procurement performance. Table 1 presents a detailed breakdown of the demographic data, offering insights into the composition of the sample population.

Table 22: Demographic characteristics of respondents

Variables	Categories	Frequency	Percent (%)
Gender	Male	73	56.6
	Female	56	43.4
Age	18- 27 years	9	7.0
	28-37 years	48	37.2
	38-47 years	65	50.4
	48+ years and above	7	5.4
Education Level	No formal Education	0	0.0
	Certificate	2	1.6
	Diploma	38	29.5
	Bachelor degree	72	55.8
	Master's Degree	17	13.2
Working Experience	0-2 years	25	19.4
	3-5 years	78	60.5
	6-9 years	22	17.1
	10 years and above	4	3.1
Working departments	Procurement	15	11.6
	Business and Finance	16	12.4
	Administration	12	9.3
	Planning and statistics	9	6.9
	Education (primary and secondary)	13	10.07
	Community development and social welfare	9	6.9
	Health	11	8.5
	Land and natural resources	7	5.4
	Community development	6	4.6
	Agriculture, irrigation and Union	8	6.2
	Works and fire extinction	7	5.4
	Livestock and fisheries	9	6.9
	Water	7	5.4
	Total	129	100

Source: Field Data, 2024

The demographic characteristics of the respondents, as illustrated in Table 1, provide valuable insights into the composition of the sample population involved in the study. Firstly, regarding

gender distribution, the majority of respondents were male, accounting for 56.6% of the total sample, while female respondents constituted 43.4%. This gender disproportionality reflects a common trend observed in many organizational settings, where male representation tends to be higher, particularly in roles associated with finance and procurement. However, it's important to note that efforts toward gender diversity and inclusivity within these sectors remain crucial for fostering equitable opportunities and perspectives (Fourie & Malan, 2020).

Moving on to age distribution, the data reveals a varied spread across different age groups. The largest proportion of respondents falls within the age bracket of 38-47 years, comprising 50.4% of the sample. This finding suggests that a significant portion of the workforce involved in financial management and procurement within the local government authorities belongs to the middle-age category. Additionally, the distribution indicates a relatively stable workforce in terms of age, with only a small percentage falling into the younger age group (18-27 years) and a similarly small percentage in the older age group (48+ years). Such age distribution patterns could have implications for workforce dynamics, including knowledge transfer, succession planning, and organizational resilience.

Education level is another critical demographic factor analyzed in the study. The majority of respondents possess a bachelor's degree, representing 55.8% of the sample, followed by those with a diploma at 29.5%. This distribution underscores the importance of higher education qualifications in roles related to financial control and procurement, where specialized knowledge and skills are often required. However, it's noteworthy that a significant proportion of respondents hold diploma qualifications, indicating a diverse educational background within the workforce. This diversity may contribute to a multifaceted approach to problem-solving and decision-making in financial management processes (Changalima et al., 2020).

Furthermore, examining the respondents' working experience provides insights into their professional tenure within the local government authorities. The data shows that the majority of respondents have between 3 to 5 years of working experience, constituting 60.5% of the sample. This suggests a workforce with moderate to relatively extensive experience in their respective roles. However, it's interesting to note the presence of respondents with less than 2 years of experience (19.4%), indicating the inclusion of relatively junior staff in the study. Conversely, a smaller proportion of respondents have more than 10 years of experience (3.1%), highlighting the presence of seasoned professionals who may bring valuable insights and expertise to the research (Cooper & Schindler, 2011).

In terms of working departments, findings from the study revealed that respondents were distributed into different departments as shown in the table above. It was found that out of 129 respondents 15 (11.6%) works in procurement department, 16 (12.4%) work in business and finance, 12 (9.3%) were found working in administration and human resources department and 9 (6.9%) work in planning and statistics department. In addition, 13 respondents (10.07%) work in education (primary and secondary), 9 (6.9%) work in community development and social welfare, 11 (8.5%) were working in health department, 7 (5.4%) work in land and natural resources, 6 (4.6%) were found working in community development and social welfare and 8

respondents (6.2%) were working in agriculture and union. Furthermore, 7 respondents (5.4%) were working in works and fire extinction department, 9 (6.9%) were working in livestock and fisheries and 7 (5.4%) were working in water depart. This means that procurement department had more respondents selected for the study followed by business and finance department.

Demographic characteristics of the respondents paint a picture of a workforce predominantly composed of middle-aged, educated professionals with moderate to extensive working experience in financial management and procurement roles within the local government authorities. While gender disparities persist, efforts toward greater inclusivity and diversity remain imperative. Additionally, the diverse educational backgrounds and varied levels of experience among respondents underscore the richness of perspectives and potential challenges inherent in addressing issues related to financial control practices and public procurement performance.

Results on Budgeting Practices

Table 2 presents summary statistics of budgeting practices, including mean, standard deviation (SD), minimum, and maximum values.

Table 2. Summary Statistics of Budgeting Practices

Budget Practices	Mean	SD	Min	Max
Financial Reporting	3.116	.442	2	5
Budget Planning	3.281	.117	1.6	5
Expenditure control	4.235	.327	2	5

The statistics in Table 2 offer valuable insights into the central tendency, variability, and range of scores for each practice. In the category of Budget Practices; Financial Reporting has a mean score of 3.116, with a standard deviation of 0.442. This indicates that, on average, respondents rated financial reporting around 3 out of 5, with scores ranging from 2 to 5. Budget Planning shows a slightly higher mean score of 3.281, with less variability (SD = 0.117), suggesting that respondents tended to rate Budget Planning more consistently higher, ranging from 1.6 to 5. Expenditure control, with a mean of 4.235 and SD of 0.327, received the highest average rating among Budget Practices, indicating stronger agreement or satisfaction with this aspect, with scores ranging from 2 to 5. Overall, these summary statistics provide a comprehensive overview of how respondents rated various budgeting practices. While some practices, such as Budget Planning and Expenditure control, received relatively higher average ratings. These insights can inform further analysis and decision-making regarding budgeting strategies and improvements within the organization.

Table 3. Summary Statistics of Public Procurement Performance

Public procurement performance	Mean	SD	Min	Max
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Value for Money	4.321	.543	3	5
Stakeholder satisfaction	3.231	.254	2	4
Compliance with rules	3.382	.342	2	5
Overall	3.844	.466	2.784	4.8

Source: Field Data (2024)

The summary statistics concerning various aspects of public procurement performance. Value for Money exhibits a relatively high mean score of 4.321, with a narrow standard deviation (.543), indicating that, on average, procurement processes are perceived as delivering good value. The minimum value of 3 suggests that there's consistency in achieving at least a satisfactory level of value, while the maximum value of 5 indicates instances where exceptional value is achieved.

Stakeholder Satisfaction has a lower mean score of 3.231, suggesting that while generally satisfactory, there may be room for improvement. The narrow standard deviation (.254) indicates that satisfaction levels are relatively consistent across different procurement instances.

Lastly, Compliance with Rules shows a mean score of 3.382, indicating a relatively high level of compliance with procurement rules and regulations. The moderate standard deviation (.342) suggests some variability in compliance levels across different procurement instances. In summary, the data suggest that while public procurement generally achieves good value for money and compliance with rules, there may be opportunities for improvement in stakeholder satisfaction, cost-saving efforts, and ensuring consistent supplier performance.

Association between the public financial Control Practices on public procurement performance of LGAs.

The Pearson correlation coefficients and their corresponding p-values indicate the association between public financial control practices and the performance of local government authorities (LGAs) in public procurement, with a significance level set at 0.05. Overall, the results suggest a strong positive association between public financial control practices and the performance of LGAs in public procurement. For Budget Practices, all three variables - Financial Reporting, Budget Planning, and Expenditure control - exhibit high positive correlations with public procurement performance, ranging from 0.779 to 0.851, all with p-values of 0.00. This indicates that as the scores for these financial control practices increase, the performance of LGAs in public procurement also tends to increase significantly.

Table 4. Pearson correlation showing the Association between the public financial Control Practices on public procurement performance of LGAs.

Budget Practices	Public procurement performance	
	Correlation	P-value
Financial Reporting	0.788	0.00

Budget Planning	0.851	0.00
Expenditure control	0.779	0.00

Source: Field Data (2024)

Overall, the findings highlight the importance of effective budgeting practices in enhancing the performance of LGAs in public procurement activities. The strong positive correlations observed suggest that improvements in budgeting mechanism, can contribute significantly to the efficiency and effectiveness of public procurement processes within LGAs. These results can inform policymakers and stakeholders in local government finance about the critical role of budgeting practices in driving performance improvements in public procurement, potentially guiding resource allocation and decision-making to prioritize areas where enhancements are most needed.

Linear Multiple Regression

The results of a linear multiple regression analysis examining the effect of budgeting practices on the public procurement performance of Local Government Authorities (LGAs) in Dodoma are presented in Table 5.

Table 5. Linear multiple regression to show the effect of budgeting practices on the public procurement performance of LGAs in Dodoma.

Public procurement performance	Coef.	St.Err.	t-value	p-value	[95% Conf. Interval]
Financial Reporting	1.394	0.022	63.36	.000	0.543 7.663
Budget Planning	1.004	.072	13.94	.002	1.213 4.162
Expenditure control	1.604	.088	18.23	.000	1.744 4.046
Constant	3.401	.263	12.93	.000	0.277 2.112

The beta coefficients indicate the estimated effect of each budgeting practice variable on public procurement performance, holding other variables constant. Firstly, for Financial Reporting, the coefficient of 1.394 suggests that for every one-unit increase in financial reporting practices, public procurement performance is estimated to increase by 1.394 units. This coefficient is statistically significant at the 0.05 level, with a t-value of 63.36 and a p-value of 0.000. The 95% confidence interval for this coefficient ranges from 0.543 to 7.663, indicating

a high degree of certainty in its estimated effect. Similarly, for Budget Planning, the coefficient of 1.004 suggests that for every one-unit increase in budget planning practices, public procurement performance is estimated to increase by 1.004 units. This coefficient is also statistically significant at the 0.05 level, with a t-value of 13.94 and a p-value of 0.002. The 95% confidence interval for this coefficient ranges from 1.213 to 4.162. Moreover, for Expenditure Control, the coefficient of 1.604 suggests that for every one-unit increase in expenditure control practices, public procurement performance is estimated to increase by 1.604 units. This coefficient is statistically significant at the 0.05 level, with a t-value of 18.23 and a p-value of 0.000. The 95% confidence interval for this coefficient ranges from 1.744 to 4.046. The constant term represents the estimated public procurement performance when all budgeting practice variables are zero. In this case, the constant term is 3.401, indicating the baseline level of public procurement performance. This constant term is also statistically significant at the 0.05 level, with a t-value of 12.93 and a p-value of 0.000.

Table 6. Model Goodness of Fit

Mean	3.844	SD dependent var	.466
dependent var			
R-squared	0.744	Number of obs	129
F-test	134.062	Prob > F	0.000

The R-squared value of 0.744 indicates that approximately 74.4% of the variance in public procurement performance is explained by the budgeting practice variables included in the model. The F-test statistic of 134.062 is highly significant (p-value = 0.000), suggesting that the overall regression model is a good fit for the data.

The results suggest that financial reporting, budget planning, and expenditure control practices significantly influence public procurement performance in LGAs in Dodoma. These findings are in line with what was found by Isroilov et al. (2020) whereby financial control practices especially budgeting was found to be significantly influencing the procurement practices. Furthermore these findings are also confirming what was by Kikavets and Tsaregradskaya (2023) who found that the effectiveness of public procurement activities largely depends on budgeting process whereby the extent to which financial control is effective it allows public procurement process to be effective. Budget planning, when aligned with organizational objectives, ensures that procurement activities are adequately funded and strategically timed, thereby optimizing resource allocation and minimizing inefficiencies.

Furthermore, these quantitative findings on effect of budgeting practices on the public procurement performance of LGAs are supported with the findings from interviews whereby interviewee argued that whenever there is a poor budgeting, procurement activities also fails. When probed on the role of budgeting in enhancing procurement activities at Dodoma, one respondent had this to say;

Well, you know procurement activities largely depends on budgeting. If budgeting activities are well planned and budgeted accordingly procurement activities become easy, timely and more effective. We procurement officers, we buy what has been budgeted and allocated. (P2).

From these findings it is obvious that the performance of procurement function in any organization depends on institutional budgeting activity. Failure to have proper budgeting plans hinder effective procurement practices. Organizations which fail to have effective budgeting practices experience poor procurement practices and hence poor procurement performance.

It was also learned during the interview that most local government authorities including Kongwa and Mpwapwa face serious problem of budget allocation whereby budget planning is no longer a problem. It was stated that, most of procurement activities which have budgeted in a specific financial year fail to be implemented due to low cash flow and therefore minimal allocation. During the interview one respondent argued that;

In many local authorities, including Dodoma, our procurement performance is affected by budget allocation. You may find all activities are well budgeted but no procurement activity is undertaken as the resources are scarce and therefore few procurement activities are allocated fund and conducted timely. (P5).

Similar argument was raised by one head of department who said that;

The issue has moved from poor budget planning to the availability of funds. We have good number of procurement arrangements which have been budgeted but the problem is cash flow. Sometimes, our revenues fail to meet our needs and disbursement from central government may delay something which affect our procurement plan. (P1).

The problem of limited financial resources was also found by Ghosh (2019) to hinder the effective implementation of procurement plan. In this study it was found that failure of budgeted resources to be allocated due to low cash flow affects negatively procurement activities.

Furthermore, financial reporting within the framework of budgeting ensures transparency and accountability in the allocation and utilization of funds. Evidence suggests that a clear and accurate financial reporting facilitates better decision-making and enhances stakeholder trust (Kikavets and Tsaregradskaya, 2023). Moreover, effective expenditure control mechanisms are crucial for preventing overspending and misuse of resources. When budgets are meticulously managed, procurement processes can operate within predefined financial limits, promoting fiscal discipline and achieving better overall performance outcomes. During the interview it was learned that, proper control of expenditure enhance procurement activities as it firstly ensure resources availability and at the same time help to minimize the procurement of unused, unwanted and low quality service or goods. When responding to a probing question on how expenditure control affect procurement activities, one respondent argued that;

Good procurement activities requires stable financial control mechanisms especially expenditures. When expenditures are controlled and monitored, it enhance the availability of enough financial resources to cutter procurement needs and at the same time good expenditure control acts as a controlling mechanism to procurement activities as it help to avoid unnecessary procurement of irrelevant and low quality goods and or services (P4)

These findings provide valuable insights for policymakers and practitioners aiming to enhance public procurement processes in the region. The findings provides a clear insight on what is happening in local authorities, Dodoma being a case study. In most cases, budget is the pillar for smooth procurement activities but, funds availability is the key towards effective procurement activity. With the availability of the enough budget and cash flow, procurement activities are likely to move smooth and therefore ensure the provision of goods and services to the general public. As stated by Abdullahi and Mohamud (2023), procurement activities are the pillar for the organization performance and therefore its effectiveness is an important element in enhancing organization competitive advantage

5.0 Conclusion

Objective of this paper sought to assess the effect of budgeting practices on public procurement performance. The linear multiple regression analysis revealed the results suggest that financial reporting, budget planning, and expenditure control practices significantly influence public procurement performance in LGAs in Dodoma. These findings provide valuable insights for policymakers and practitioners aiming to enhance public procurement processes in the region. These results are in line with previous research by Matto (2021) and Changelima et al. (2020), which emphasized the importance of strategic budgeting in enhancing procurement effectiveness and resource allocation within local government settings.

In conclusion, this study investigated the interplay between financial control practices and public procurement performance within Local Government Authorities (LGAs) in Tanzania, focusing on Kongwa and Mpwapwa Districts Councils. Through a mixed-methods approach encompassing surveys and interviews analysis, the study examined the effects of budgeting practices, internal control measures, and revenue mobilization strategies on procurement outcomes.

6.0 Recommendations

Based on the findings of this study, the following recommendations are directed to the Government, particularly the President's Office - Regional Administration and Local Governments (PO-RALG):

Strengthen Financial Reporting Mechanisms: PO-RALG should institute measures to ensure regular and timely preparation of financial reports by Local Government Authorities (LGAs). This may involve providing training and resources to finance departments, establishing clear reporting guidelines, and implementing systems for real-time financial data management.

Improve Budget Planning and Monitoring: PO-RALG should encourage LGAs to develop budgets aligned with strategic objectives and based on realistic revenue projections and expenditure estimates. Additionally, mechanisms for continuous monitoring and evaluation of budget execution should be strengthened to address variances and ensure optimal resource allocation.

Promote Stakeholder Engagement: PO-RALG should facilitate inclusive budget planning processes that involve input from various stakeholders, including citizens, oversight bodies, and community representatives. By promoting transparency and participation, LGAs can build trust, legitimacy, and ownership of budgetary decisions among stakeholders.

7.0 Areas for Further Study

Based on the findings and limitations of this study which adopted a case study of two district councils, future studies could explore variations in financial control practices and procurement performance across different regions of Tanzania to identify regional disparities, contextual factors, and best practices that influence procurement outcomes.

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Impacts of Financial Terms from Banks on Mini-Hydroelectric Projects Accessing Rural Energy Agency Credit in South Highland, Tanzania

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Abstract

The Rural Energy Agency (REA) focuses on improving access to modern energy services in rural areas by implementing solutions such as grid extensions and off-grid Renewable Energy solutions. It funds rural energy projects through the Rural Energy Fund, providing grants and soft loans (Through Project Participating Banks) to cover capital expenses. This study examined the Impacts of Financial Terms from Project Participating Banks on Mini-hydroelectric Projects Accessing Rural Energy Agency Credit in South Highland, Tanzania. The whole study was conducted basing on significant level of 5% (0.05). Using quantitative methods and employing the Statistical Package for Social Sciences (SPSS) and Stata, we analyzed data through descriptive statistics and inferential statistics, including the Multiple Logistic Regression Model. Descriptive statistics provided demographic insights into the respondents, while inferential statistics identified significant associations between the financial terms offered by Banks and access to Credit. Chi-square tests and logistic regression analysis highlighted significant relationships, offering valuable insights for improving access to Credit for mini-hydroelectric projects. Having found that, financial terms offered by the Participating Banks have great relationship with access to REA's Credit; hence need to be relooked in order to increase its access. Lastly, the study looked into areas which need further studies including identifying new Renewable energy project financing in Tanzania to accelerate it.

Keywords: *Hydro-electric Project, Credit, Rural Energy Agency and Participating Banks*

Introduction

The sun, geothermal energy from within the ground, wind, biomass from plants, and hydropower from flowing water are the five main sources of renewable energy in the world (Ritchie, 2023). Global investments in renewable energy are expected to cut greenhouse gas

emissions associated with energy use by about one-third by 2050, according to Gielen *et al.* (2019). To this end, by 2050, the proportion of renewable energy in the world's energy mix must rise from roughly 15% of primary energy supply in 2015 to roughly 66%.

The number of individuals without access to electricity fell from 1.14 billion in 2010 to 675 million in 2021 on a global scale. The main cause of this reduction was Asia, where the deficit decreased from 516 million in 2010 to 69 million in 2021. Due to its constantly growing population, Africa only had a slight decrease in its un-electrified population during the same period, going from 591 million to 586 million. 660 million people, mostly in Sub-Saharan Africa, are predicted to still lack access in 2030 according to the 2023 Tracking SDG7 Report (United Nations, 2020). Energy efficiency keeps becoming better, renewable energy is gaining significant traction, and access to electricity in developing nations has started to pick up speed (Gielen et al. 2019).

In Africa, accessing financing for green energy projects in the private sector is hindered by significant challenges, with high borrowing costs being a major obstacle. Inderst and Stewart (2014) highlight those political and economic concerns in developing countries lead to an increase in borrowing costs by 2% to 6%. While South Africa has allocated \$160 million annually for solar projects through the Integrated National Electrification Program, this funding is contingent upon projects becoming self-funded within a specific timeframe, posing challenges for some private initiatives (Willcox & Cooper, 2018). Although commercial banks, export Credit agencies, development finance institutions, and various investment funds have provided funding, including equity investments from technology funds and international companies like Google, these efforts have not been adequate to fully support clean energy projects.

In Tanzania, the Rural Energy Agency (REA) is responsible for promoting and facilitating the availability of modern energy services to rural areas. REA works with various stakeholders, including public and private sectors, cooperatives, and community-based organizations as project developers (International Trade Administration, 2023). REA also works with multilateral and bilateral development partners like the World Bank, Swedish International Development Cooperation Agency (SIDA), Norad/Norway, African Development Bank Group (AfDB), The French Development Agency (AFD), European Union (EU) and Department for International Development (DFID) (African Development Bank, 2022). The Rural Energy Agency (**REA**) focuses on improving energy services in rural areas by implementing solutions such as mini-grids and off-grid renewable energy solutions. It funds rural energy projects through the Rural Energy Fund, providing grants and concessional credit to cover capital expenses. The legislation underpinning rural energy is the Rural Energy Act 2005 (Clyde & Co, 2023).

Tanzania has an abundance of renewable energy resources, including geothermal, solar, wind, biomass, and hydropower. Not all of this potential has been used to its fullest. According to the Tanzania National Development Vision 2025 (African Development Bank, 2015), if these renewable resources are used effectively, they could greatly increase Tanzania's energy supply

and bring the nation closer to becoming a middle-income nation. Tanzania must lessen its dependency on biofuels and diversify its sources of electricity. Therefore, natural gas accounts for 48% of Tanzania's electrical generation, with hydro (31%), petroleum (18%), solar (1%), and biofuels (1%), following in order. Power shortages are frequently caused by the nation's historical reliance on its grid connected hydropower plants as well as the current droughts. TANESCO hired Emergency Power Producers (EPP) to fill the shortfall in the nation's electricity supply (International Trade Administration, 2023). However, Luhwago (2024) stated that Dr. Doto Biteko, the deputy prime minister and minister of energy, stated that the government needs to make a conscious effort to invest in alternative power generation sources in order to keep up with the nation's growing need for electricity.

REA or other government agencies have separate programs or partnerships focused on grant funding, technical assistance, or subsidies for renewable energy projects (Rural Energy, 2024). These initiatives can help address different needs and financial constraints that may not be suitable for Credit facilities. REA in cooperation with the World Bank allocated USD 45 Million USD to be used for provision of long-term concessional debt for eligible private sector-led renewable energy projects in particularly Mini-hydroelectric Projects. Since the initiation of the Program in 2016, there has been a poor uptake of loans from the project participating Banks by the developers despite the provision of pre-loan supports such as matching grants, which is used for pre-investment studies, and preparation of Bankable Documents as among the pre-requisites for accessing Credit (Bank of Tanzania, 2023).

This study intends to find out on the impacts of financial terms from participating Banks on access to REA's Credit for mini-hydroelectric projects in South Highland Tanzania which are the main contributor of Renewable Energy in Tanzania

Literature Review

Theoretical Framework

The principal-Agent theory is an agency model which was developed by economists Jensen and Meckling in 1976 that describe the existing relationship between principals and agents within the business. The Principal-agent theory is concerned with resolving problems that arise in agency relationship between two parties; principals such as stakeholders and principals' agents such as executives in the company (Gailmard, 2012).

Agency theory explores the relationships between principals (e.g., project developers) and agents (e.g., Rural Energy Agency). Sarakikya, H. (2018). Agency theory is a branch of economics and management that explores the relationship between a principal (e.g., a company's owner or shareholder) and an agent (e.g., a manager or employee) who is hired to perform tasks on behalf of the principal. The theory proposed by Michael Jensen and William Meckling is often Credit for their seminal work in the late 1970s, particularly with their paper titled "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure" (1976).

This theory is relevant to the study because was used to determine the impact of financial terms from the participating Banks for accessing the Credit for Mini-Hydroelectric Projects in South Highland, Tanzania. In an agency relationship, the principal (Banks) delegates tasks to the agent (project developers), and there is a need for information flow and monitoring. The financial terms can be seen as mechanisms to align the interests of the principal and the agent, ensuring that the agent provides the necessary information and complies with agency objectives (Meckling, 1976)

Therefore, agency theory provides a lens through which one can analyze the principal-agent relationships, information flow, and mechanisms used to align the interests of the Participating Banks and Mini-Hydroelectric Project developers in South Highland, Tanzania. The theory emphasizes the importance of designing structures (financial requirements) to minimize agency costs and enhance the effectiveness of the relationship.

Empirical Literature

Tanzania Renewable Energy Association (TAREA) (2020) reports that a study on cooperative methods for improving access to funding for renewable energy was carried out. Financial institutions such as CRDB, EQUITY Bank, MCB, NBC, and TIB Development Bank were among the participants in the study. The SAGCOT Center, the Elico Foundation, and specialists for renewable energy were also present during the visit. It was discovered that although they lack the necessary data, financial institutions are eager to get involved in financing renewable energy (RE). Stakeholders, particularly financial institutions, need to have more conversations, training sessions, and seminars. There will be mutual benefits from more collaborations between financial institutions and RE-enterprises.

Al-Qudah *et al.* (2020) conducted the study about the effect of credit facilities granted by commercial banks on the Jordanian economy. The positivist concept has been incorporated into the research study's technique since it aids in confirming the accuracy of data obtained through mathematical deductions. In order to provide extensive explanations of the obtained data in addition to charts and graphs, a descriptive research design has been employed. It has been determined that credit ratings have a major impact on the economy and that commercial banks play a major role in the Jordanian economy. The study's findings also showed that there is a strong correlation between Jordan's commercial banks and financial institutions and the improvement of the country's credit facilities.

Osebo (2017) conducted the study about factors affecting access to credit by using proportionate stratified random sampling study selected 244 MSEs in hosanna towns. A semi-structured questionnaire and interviews have been employed as methods to collect data. Tests of the hypotheses and identification of the key variables influencing credit availability from formal financial institutions were conducted using binary logistic regression and descriptive analysis. As a result of the study, MSEs' access to credit is significantly impacted by a number of criteria, including the operator's age, educational attainment, and possession of fixed assets, employment size, lending method, and loan repayment length.

Research Gap

The gap that was observed is the Institutional Difference Gap. The studies haven't exploited much on the differences posed when dealing with different financial institutions particularly when dealing with financing access requirements. In Tanzania, accessing finance requirements for commercial Banks are different from those experienced when accessing finance in Investment (Development Banks).

Conceptual Framework

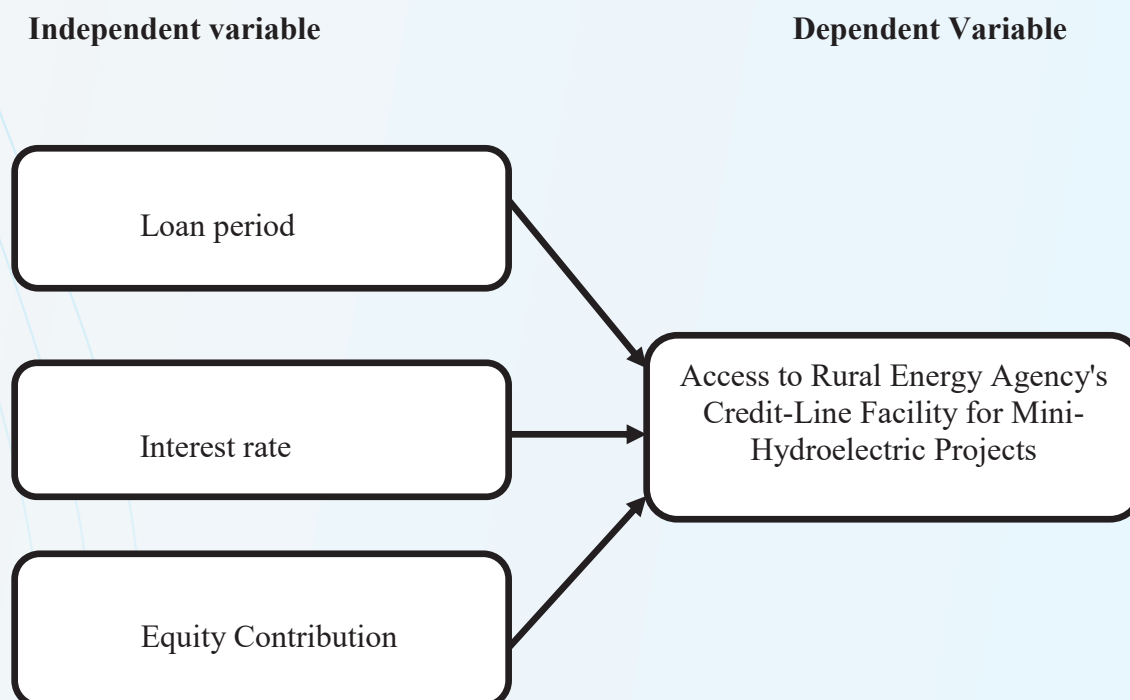
A conceptual framework is a visual or written representation of the key concepts, variables, and relationships that are under study. It provides a structured way to organize and understand the complex interplay between different elements in a research study. In the context of this study on impacts of Banks terms for accessing the REA's Credit for mini-hydroelectric projects, the conceptual framework includes:

Dependent Variable: Access to Rural Energy Agency's Credit for Mini-Hydroelectric Projects

Independent Variable: Loan Period, Interest Rate, and Equity Contribution

The relationship of the variables of the study can be conceptualized by the following framework;

Figure 1: Conceptual Framework



Methodology

Research design

Research design entails a blue print or framework for data collection process. There are different types of research design such as case study, cross-sectional, survey, experimental, and longitudinal design (Myers *et al.*, 2013). The study used a cross-sectional research design. Without influencing or modifying any of the variables, a cross-sectional research design examines correlations between them. The direction and/or degree of the relationship between two or more variables are reflected in a correlation. A correlation may have a positive or negative direction (Lau, 2017). Finding links, describing these associations, and then making predictions are frequently the objectives of correlational research.

Sample and sample size

In research, it is often not appropriate or feasible to recruit the entire population of interest (Patton, 2017). Instead, researchers recruit a sample from the population of interest to include in their study. A selected group of some elements from the totality of the population is known as the sample (Dai, Liu & Hu, 2014). It is from this sample that something is known and said about the whole population. This study adopted Yamane's formula to identify the sample size from the target population (Yamane, 1967) as below;

$$n = N/(1+N(e)^2)$$

Where;

n = Sample size

N = Population

e = Level of precision of sampling of error which is 5%

Therefore:

*95% confidence level and $p = 0.05$ are assumed

$$n = \frac{137}{1 + 137(0.05)^2}$$

$$n = 102$$

Therefore, this study gathered data from 102 respondents.

Sampling Technique

Sampling is the process of selecting a representative sample of individuals from the population of interest (Kamangar & Islami, 2013). Sampling is an important tool for studies because the population of interest usually consists of too many individuals for any research project to include as participants. A good sample is a representation of the population of interest and is fair enough to answer the research question (Dai, Liu & Hu, 2014). This study used simple random sampling method to select the representatives of the population. Simple random sampling is a type of probability sampling in which the researcher randomly selects a subset of participants from a population. Each member of the population has an equal chance of being selected. Data is then collected from as large a percentage as possible of this random subset. The selections of respondents were developed under the following below equation;

$$P = 1 - \{(N-1)/N\} \dots\dots\dots (1)$$

Data Collection Method

This study uses primary data collected through survey questionnaire. The questionnaire method is a widely used technique for gathering primary data in research and data collection activities. It involves the creation and administration of a structured set of questions to individuals or respondents to collect information on specific topics or research objectives Cooper and Schindler (2019). This method is particularly useful when you want to gather quantitative data or opinions from a large number of people. Likert scale questions used to collect quantitative data

Data Analysis

The study employed quantitative methods to analyze data. The data collected using the questionnaires coded and analyzed with the help of the Statistical Package for Social Sciences (SPSS) Version 20 and Stata 17. Data analysis constitutes both descriptive and inferential statistics. Descriptive statistics focus on measures of distribution (frequencies and percentages), measures of central tendencies (means), and measures of variation (standard deviations). On the other hand, inferential statistics captured multiple logistic regressions.

This study adopts a multiple logistic regression model to examine the relationship between Banks Terms) to rural energy agency's Credit in Southern Highland Zone, Tanzania.

The multiple logistic regression models help to assess the effect of Banks Terms) on the performance of the Credit.

$$\text{logit}[\pi(x)] = \log\left(\frac{\pi(x)}{1-\pi(x)}\right) = \beta_0 + \beta_1 x_1 + \dots + \beta_p x_p \dots\dots\dots (2)$$

Whereby

$\pi(x)$ Represent the likelihood of Access to Credit funding for renewable energy projects.

x_i 's Represent set of independent variables (loan period, interest rate and Equity contribution)

β_i 's Represent parameters of respective independent variables.

Reliability and Validity

Reliability

Data reliability refers to a collection of techniques aiming at ensuring the consistency of scale data (Drost, 2011). The reliability of the data in this study was evaluated using Cronbach alpha, as well as composite reliability in which data quality was measured to determine internal consistency (Abowitz and Toole, 2010; Hair *et al.*, 2009). This suggests a moderate level of internal consistency among items related to the loan period. Interest rates (0.724): Similar to loan period, this indicates moderate internal consistency among items measuring interest rates. Equity contribution (0.845): This shows a good level of internal consistency among items related to the equity contribution. Overall (0.821): The overall Cronbach's Alpha for all items combined is very high (above 0.8), indicating excellent internal consistency reliability for the entire scale of 45 items. In summary, most of your scales demonstrate acceptable to good internal consistency, with the overall scale showing very high internal consistency reliability.

Table 23: Overall Reliability Statistics

Variables	Cronbach's Alpha	N of Items
Loan period	0.748	5
Interest rate	0.724	5
Equity contribution	0.845	5
Overall	0.821	15

Source: (Field data, 2024).

Data validity

To address the issue of validity, the researcher conducts a pilot study to make sure the data collection methods yield valid information. Questionnaires and interview questions try to check on the correctness of the wording, whether the questions measure what they are supposed to

measure, and if there are any biases, as well as knowing if the respondents understood the questions as the researcher intended. From the pilot study and improvements made after the pilot study, the tools were used for data collection Seymour, (2019).

Finding and Discussion

This section presents the findings and discussions regarding the effect of Bank Terms on the performance of the Credit. The results are obtained from descriptive statistics and inferential statistics. The demographic characteristics of the respondents, associations between the effect of Banks Terms on the performance of the Credit a case of Mini-hydroelectric projects in South Highland, Tanzania, and the influence factors affecting access to rural energy agency's Credit a case of Mini-hydroelectric projects in South Highland, Tanzania.

Association between Financial Terms and Accessing the REA's Credit for Mini-Hydroelectric Projects

Table 3 examines the association between Financial Terms and access to Credit for mini-hydroelectric projects. It analyzes three variables related to loan period, interest rate and Equity contribution. We'll use a significance level of 0.05 to determine if there's a statistically significant relationship between each variable and access to the Credit. Loan Period: P-Value (0.002) is much less than 0.05. This suggests a very strong statistically significant association between loan period and access to Credit Facilities. Banks offering longer loan repayment periods are attractive to developers applying for credit. Interest Rate: P-value (0.001) is much less than 0.05. This indicates a very strong statistically significant association between interest rate and access to Credit. Developers applying for loans were very much attracted to Banks offering lower interest rates. Equity contribution: P-value (0.001) is much less than 0.05. This indicates a very strong statistically significant association between equity Contribution and access to Credit. Lower equity contribution in more attractive and higher chance of Credit access, particularly for applicants with limited financial resources.

Table 3: Association between Financial Terms from Banks for accessing the Credit for Mini-Hydroelectric Projects

Variable	Not having access to Credit	Access to Credit	Chi-square	P-Value
<i>Loan period</i>			38.1133	0.002
No	35(66.04)	18(33.96)		
Yes	35(71.43)	14(28.57)		
<i>Interest rate</i>			42.9814	0.001
No	27(65.85)	14(34.15)		
Yes	43(70.49)	18(29.51)		

Equity contribution			62.64	0.001
No	24(60)	16(40)		
Yes	46(74.19)	16(25.81)		

Source: Fied data (2024).

The financial Terms for Accessing the REA's Credit for Mini-Hydroelectric Projects

This table shows the results of a multiple logistic regression analysis examining the influence of financial terms on access to REA's Credit for mini-hydroelectric projects. We'll analyze the coefficients, odds ratios, z-statistics, and p-values to understand the relationships between these financial terms and access to REA's Credit. Loan Period (Yes vs. No): OR (2.4435) is greater than 1, suggesting Banks offering with longer loan periods have nearly 2.5 times the odds of obtaining REA's Credit compared to those with shorter periods. P-value (0.027) is less than 0.05, indicating a statistically significant relationship. Loan period is positively linked to REA's Credit access. Interest Rate (Yes vs. No): OR (6.1504) is much greater than 1, suggesting Banks with lower interest rates have over 6 times the odds of attracting developers to access REA's Credit compared to those with higher interest rates. P-value (0.003) is much less than 0.05, indicating a very statistically significant relationship. Banks offering Lower interest rates are strongly attractive to developers hence, higher chance of Credit to be accessed. Equity contribution (Yes vs. No): OR (3.0414) is greater than 1, suggesting lower equity contribution are associated with over 3 times the odds of obtaining Credit. P-value (0.830) is much greater than 0.05, indicating this relationship is not statistically significant at the 0.05 level. The equity contribution might not be a major factor based on this analysis. Additional Points (same as Table 4): Constant: The constant term (-.542048) doesn't have a direct interpretation. Number of Observations & Chi-Square: These values indicate the sample size (102) and the overall model fit (significant based on the Chi-square value and p-value). Pseudo R-Square (0.545): This value suggests the model explains a moderate to good portion of the variance in the access to REA's Credit outcome. Overall, the analysis suggests that loan period and interest rate are significant factors influencing access to Credit for mini-hydroelectric projects. Banks offering longer loan periods and lower interest rates are very attractive to developers hence have a big chance to lend the REA's Credit. The equity contribution might not be a statistically significant factor based on this model.

Table 4: Multiple Logistic Regression Analysis

Employee Motivation	Coef.	Odds Ratio	z	P>|z|
No (base outcome)				
<i>Loan period</i>				
Yes	.8896	2.4435	4.58	0.027

No (Reference)					
<i>Interest rate</i>					
Yes	.9772	6.1504	4.12	0.003	
No (Reference)					
<i>Equity contribution</i>					
Yes	.9922	3.0414	3.21	0.830	
No (Reference)					
Constant		-.542048	3.1321		
Number of observations = 102 LR Chi2(3) = 97.975					
Prob> Chi2 = 0.000		Pseudo R2 = 0.545			
Source: Authors compilation from STATA 17					

Conclusion and Recommendation

Conclusion

The study explored factors that are attributable to Project Participating Banks including loan period, Interest Rates offered by the Banks and the equity contribution requirements. The Study investigates the association between the period that banks offer to the lender to exhaust the loan where it was found that the longer the loan periods the better and attract more lenders to access the credit. Due to the nature of the Mini-hydroelectric projects, longer loan period offers flexibilities on return on investment. Further, the study investigates the association between the interest rate on the loan and Credit access. Lower interest rates translate to lower overall loan costs, making projects more financially viable and increasing their chances of approval. Further to the above, the research analyzes the impact of the equity required by most of financing lenders. While the findings suggest the equity contribution might not be a statistically significant factor, it's still relevant to consider, especially for applicants with limited financial resources, the lower the equity contribution the higher the chance of accessing the Credit.

Recommendations

Based on the findings, the study recommends that, favorable loan terms is another area to be revisited where Project Participating Banks could advocate for longer loan periods and lower interest rates in provision of the REA's Credit. REA has to look possibility of providing incentives such as grants in order to help developers raise the required equity requirements. Further, Banks should revise their debt-equity ratios to lower the equity contribution especially

for the project developers with limited financial resources. This would make the loans more accessible and financially viable for mini-hydropower projects.

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The Influence of Method of Procurement on Timely Delivery of Water Construction Projects in Duwasa

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Abstract

The main purpose of the paper was to examine the influence of method of procurement on timely delivery of water construction projects in DUWASA. This study involved the effect of three methods namely, manually, electronically and contracting out methods of procurement on timely delivery of water construction projects. The study employed explanatory sequential design as mechanism to obtain appropriate data from the study area. The population of the study was 59 staff from DUWASA in the Dodoma City Council from which a sample size of 51 employees was selected through the use simple random sampling. Both interview and questionnaire were used as tool for collecting data and analyzed by using descriptive frequency distribution analysis and liner regression with the help of Statistical Package for Social Sciences (SPSS) version 20. The study found out that, of the three methods of procurements, manually, contracting out and electronic one, two of them (Electronic methods and contracting out methods) showed a positive and statistically significant relationship. This was determined through analysis, as the p-value for the two methods was less than 0.05. The results suggested that there is a positive and substantial correlation between electronic and contracting out methods on timely delivery of the water construction project and procurement audit performance. The study concluded that electronic and contracting out are the most effective methods of procurement in ensuring timely completion of the public project (water projects). The study recommended that government should prioritize the use of effective procurement planning techniques to achieve timely delivery of the projects. Also, policy makers need to promote effective procurement policies in order to deliver the public project in time.

Key words: *Procurement, Timely Delivery, Contracting out, Electronic and Projects*

1.1 Introduction

Procurement planning is the process by which a business chooses what to buy, when to acquire it, and from whom. During the procurement planning process, the procurement method is allocated and the expectations for meeting the procurement needs are decided. Another way to define procurement planning is as the method used by businesses, both public and private, to schedule their purchasing activities for a specific time frame (AO Ogwang, 2017). The impact of procurement planning on service delivery is substantial, so in order to satisfy customers and gain a competitive edge in the market, organizations must leverage procurement planning to lighten their workload and focus on internal operations (Lawino, 2023).

Regulation 121 of Tanzania's Public Procurement Act 2011 (URT, 2011) grants procuring entities the power to oversee and control any procurement of goods and services and work that abides by the precise quantities and quality specified in the contract as well as to monitor the progress and prompt completion of work per the terms. Government spending on art purchases accounts for a sizable portion of total revenue. However poor contract management can seriously hamper the government's efforts to guarantee that the populace receives on timely public services, as value for money may not be properly attained (Mutoro, et al 2018).

1.2 Problem

Effective procurement planning enhances the performance of public procurement projects (Malike et al, 2018). For instance, Yudoko (2023) shows that effective procurement planning improves efficiency by minimising delays, reducing costs, and ensuring timely access to equipment, services, and materials.

Despite investing billions of monies in these projects, especially in Dodoma city, the Tanzanian government has attempted to establish a regulatory framework for easy management of procurement projects (Bwire, 2022). However, the projects continue to face challenges due to qualified opinions, substandard works, and service delays (Cag, 2023; PPRA, 2022). Additionally, PPRA (2022) reports that contract management is still inadequate, despite 60% of procurement being for work. Despite the widely recognized importance of planning as a strategic tool for improving construction project delays, many project teams neglect sound planning strategies (PPRA, 2023). The main challenges in water projects are time-overrun construction contracts, poor selection methods, and procurement performed without tender board approval. The Nzunguni water supply project commenced on August 11, 2023, with an intended completion date of January 15, 2024, yet it remains unfinished as of this writing (Masanja, 2023; PPRA, 2022). Studies by Mashenene and George (2020) highlighted the importance of performance-focused pre-contract management. The Public Procurement Act of 2011 highlighted that contractor selection criteria, contract budget, and quality plan were all statistically significant and positively correlated with the timely delivery of procurement projects. As a result, the current study aims to investigate how procurement planning affects the timely delivery of water projects in Dodoma City.

2.1 Relevant Review

In the study by Omolo, & Ndeto, (2023) the performance of building contracts in Ugandan local governments was evaluated concerning the effects of procurement planning processes, which significantly impacted how well construction contracts performed. The study found that the performance of construction contracts is significantly impacted by the fact that funds are not always delivered for contracts in a timely manner. The study came to the conclusion that the performance of construction contracts in District Local Governments in Uganda is significantly impacted by procurement planning, contract monitoring, and administration.

In their 2015 research, Ji et al. examined the factors that influence the accuracy of estimating final contract price at the pre-contract stage in New Zealand. This research examined the key factors to address the lack of understanding. Analysed were 150 responses from professional members of the New Zealand Institute of Quantity Surveyors using a multi-attribute method. The results revealed 37 elements that may impact the ultimate contract price, with the three most crucial factors being insufficient or deficient bidding documentation, challenging design and construction, and comprehensive project information. Supplementary project-related, client, contractor, design consultant, and tendering conditions, along with internal and external matters, were recorded. Concordance analysis revealed a significant degree of agreement in the rank-ordering of the factors specified by the survey respondents in terms of their relative significance. Critical performance audit indicators at the PCS were identified as a result of the study's evaluation of Tanzania's present CPP auditing procedures (Aloyce et al., 2024). Based on the findings, practitioners audit the performance of projects in a variety of ways, which affects how the audit results are interpreted. This includes omitting some measurements at stages, measuring some items only, or combining some measures across stages of a project. According to study results, the top significant indicators at the planning stage are procurement plans, budgets, and feasibility studies, while at the design stage they are client needs, contract papers, and specifications. The most important factors during the procurement stage are thought to be the appropriateness of the procurement procedure, the evaluation process, the contract award, and the capacity and competency of the chosen contractor with reference to project size and complexity.

According to the study by Konzo (2020) the main essence of this study was to assess of the causes for delay in completion of road construction projects in Tanzania. The study had three specific objectives which were the key guide throughout the report. The specific objectives were assessing the design/ specifications delay causes in road construction projects, the management delay causes in road construction projects. Case study design was adopted in this study. The study involved engineers, consultants, contractors, procurement officers as well as financial officers. Convenient sampling technique was utilized to recruit 49 respondents as sample size. The study data was obtained through questionnaires, interview as well as documentary review. Data analysis was done through descriptive analysis as well as regression modal. It is concluded that poor specifications or designs have direct impact on the completion of road construction projects whereas it can be caused by failure of consultants to make significant actual investigation of the site. Also, delays can be caused when improper definitions of the essence of the road project. Moreover, changes in the scope of road project also led to delays in the construction of road construction projects. Changes of scope can be

caused by increase in the distance of the road to be constructed, changes of funding as well as change in the interest of the road project as well as changes of demand of the population.

3.1 Methods

This study employed a mixed-methods research approach and adopted an explanatory sequential design. The researcher obtained a study sample through stratified sampling and purposive sampling technique. The sampling process resulted in the collection of respondents from various sectors such as procurement unit, accounting and finance, environmental engineer, civil engineer, planning and coordination, environment management and sanitation unit. This study was conducted in the Dodoma City Council as it was identified to have big number of water projects yet to be completed in time.

Data collection processes were done using questionnaires and interview; the primary data collection entailed getting information straight from the participants. Conversely, Questionnaires served as the primary data gathering tool, providing quantitative insights on the influence of method of procurement on timely delivery of water construction projects in DUWASA while interviews were used to compliment the results obtained from the structured questionnaire and were employed to key informants. Questionnaires have the advantage of being economical, impartial, and giving respondents enough time to respond. The questionnaire utilized a five-score Likert scale, identifying the extremes of strongly disagree and strongly agree. Interviews were done with key informants who were the heads of the department namely (procurement unit, accounting and finance, environmental engineer, civil engineer, planning and coordination

environment management and sanitation unit) to provide experienced and detailed information, the interview was used in collection of qualitative data. This method was important for the researcher because it allowed for the acquisition of multiple data points. An interview assists a researcher in gathering data and formulates a detailed conclusion. Then, for the interview, a researcher used an interview guide as a tool. Data analysis involved, looking over, classifying, adding up, or reorganizing the information gathered for a study to answer the original research question. In this work, the researcher analyzed data gathered from a statistical population on influence of method of procurement. Preparing, organizing, and reporting are the components of data analysis, as stated in Kothari (2004). To ascertain response frequencies and perform percentage-based comparisons, the gathered data were subjected to analysis utilizing SPSS Version 20 and descriptive statistics. Data were coded, entered and presented in the form of texts, charts, and tables. Both descriptive and inferential statistics were employed in this study whereby frequencies, percent, mean, Standard Deviation, and regression analyses were performed. Furthermore, the following regression equations of logistic regressions were used as a mathematical model to show the influence of risk management, methods of procurement and monitoring management on timely delivery

$$Y-1 = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon \dots\dots\dots (1)$$

Where:

Y= Timely delivery (Timely, Untimely)

X₁ = Manually

X₂ = Electronically

X₃ = Contracting out

Qualitative data was analyzed by using the thematic analysis approach suggested by Braun and Crack (2006). The thematic analysis approach suggested six major phases which include: data familiarization, generating initial codes, searching for themes, reviewing themes, defining and naming themes and report production. It is worthwhile to note that the findings that were generated after analysis was presented using the participants' verbatim quotes to increase the credibility of the findings of the study.

4. RESULTS

The collected data indicated the following results (see the results in Table 1).

Table 1: Coefficients

	B	S.E.	Wald	df	Sig.	Exp(B)
Electronically	1.407	.600	5.501	1	.019	4.082
Manually	-.239	.595	.162	1	.687	.787
Contracting out	.907	.455	3.977	1	.046	2.476
Constant	-7.050	3.309	4.539	1	.033	.001

Source: Field Data (2024).

The findings as presented Table 1 revealed that contracting out has positive significant influence on timely delivery ($\beta=0.907$), and statistically significant of 5% (p-value=0.046). This means that 1 unit increasing of contracting out increases the timely delivery of water construction projects in DUWASA by 0.907 times. This also has been indicated by odd ratio of 2.476 implying that having organization with contracting out in water construction projects is 2.476 times likely to increase the timely delivery of water construction projects in DUWASA than having organization with no contracting out.

The findings from table 1 prompted the researcher to conduct an interview session with the head of department psudonamed HOD3 of department A, who was interviewed to comment on the influence of risk management techniques on ensuring on timely delivery of water construction projects in DUWASA

“.....risk management helps in Identifying potential risks early in the project and allows for proactive planning, one more thing I do not forget, risk management helps in assessing financial, safety, environmental, and timeline risks. In fact, the project teams can develop mitigation strategies by using risks management.....” (HOD3, 03/02/2024).

All in all, the analyzed data from the field at department suggested that the gran chart is known by HOD3 and the uses of it is explicitly clear to heads of department as shown in (Table 1). When the head of department symbolized by (HOD4) of department pseudo named C was interviewed about the varying influence of risk management techniques on ensuring on timely delivery of water construction projects in DUWASA, the head of department had the following words to say;

“.....It influences clear communication, whenever the risks management is being done properly, it ensures there is effective communication among stakeholders ensures everyone is aware of risks and their potential impact. Transparency helps prevent delays caused by misunderstandings or misaligned expectations.....” (HOD4, 04/2024).

Discussion of the findings

Contracting enables more efficient resource allocation, ensuring that the necessary equipment and staff are accessible when needed. Contracting enables improved resource allocation, ensuring that the appropriate tools and staff are accessible when needed. To incentivize prompt completion, contracts may include measures that control risks, such as fines for delays. Proper financial management within contracts ensures that money is available when needed, avoiding delays due to financial limitations. Electronic procurement systems provide greater communication among stakeholders, such as suppliers, contractors, and project managers. This ensures prompt resolution of any issues, thereby preventing delays. Electronic procurement procedures have a considerable impact on the timely delivery of water projects. Electronic procurement systems simplify the procurement process by automating tasks like bid solicitation, assessment, and contract administration. This saves time while doing these chores, compared to traditional paper-based techniques. These technologies improve openness by creating a clear audit trail for all procurement activity. This decreases the probability of delays caused by disagreements or corruption, ensuring that projects stay on track.

These results were in line with those of Ji *et al.* (2015) who revealed that, contract out leads to the timely delivery of contraction projects. This finding resonates with empirical study on influence of risks management in Tanzania underscoring the importance of acknowledging the role played by the risks management on project delivery (Alzoubi, 2022).

5. Conclusion, Implications, and the Area for Further Research

Based on the study's findings, it is possible to concludes DUWASA implements procurement planning methodologies to ensure that water construction projects are completed on time. This suggests that organizations that implement electronic procurement systems for water construction projects are more likely to enhance the timely delivery of water construction projects in DUWASA than those that do not. This suggests that organizations that contract out water construction projects are more likely to improve the timely completion of water construction projects in DUWASA than those that do not.

Implications

The research study conducted at Dodoma City Council focusing on DUWASA. Findings revealed that procurement and contracting out planning methods positively influence timely delivery of the project. Therefore, the study made recommendation to the research recommends that policymakers priorities the implementation of policies that promote effective procurement policies to increase the public sector's utilization of procurement planning.

To develop suitable solutions, the DUWASA should establish a unit to evaluate required procurement strategy and the challenges associated with implementing it. Professionals with relevant experience and expertise should work in the unit to oversee procurement planning activities and ensure that water contracts are delivered on schedule.

The study demonstrates that procurement planning on timely delivery has a substantial impact on an organization's performance. Consequently, practitioners must implement the planning that the organization has mandated to enhance the operations' effectiveness and, as a result, the timely delivery of services.

Areas of Further Studies

At the DUWASA, the research examined the impact of procurement planning on on-time delivery. The researchers recommend that additional research be conducted to evaluate the challenges associated with the implementation of procurement planning in the private sector, given the significant influence that procurement planning has on the expeditious delivery of public services and the timely procurement of services.

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The Impact of Logistic Information System on The Efficiency of Healthcare Service Delivery in Dodoma city, Tanzania.

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Abstract

The study investigates the impact of logistic information system components on the efficiency of healthcare service delivery in Dodoma City, Tanzania. The study adopted mixed research approach, with convergent parallel method that helped the researcher to collect both qualitative and quantitative data concurrently. Questionnaire and Interview were used in the collection of data. Interview data was analyzed thematically, whereas questionnaire data was firstly, analyzed descriptively where frequency and percentage were developed, then logistic regression and Chi-square test were used to examine the relationship and association between independent variables and the efficiency of healthcare service delivery. The study involved three healthcare centres namely Benjamin Mkapa Hospital, Dodoma Regional Referral Hospital, and Makole Hospital, with a sample size of 211 selected both purposively and simple random techniques. Results of the study revealed that Inventory management significantly enhances efficiency in the performance of healthcare service delivery. Also, the findings further revealed a significant contribution of effective supplier management, demand forecasting and regulatory compliance in enhancing service delivery outcomes 0.05 level of significance.

Key words: *Logistic information system, Inventory managements, Supplier Management, Demand Forecasting, Regulatory Compliance and Health care service delivery performance*

1.0 Introduction

The Logistics Information Systems (LIS) have emerged as a transformative tool in healthcare management, that significantly enhancing service delivery efficiency worldwide. By integrating advanced technologies with supply chain processes, LIS optimize inventory management and streamline logistics, thereby improving patient outcomes (Ivanov, 2023). This is particularly important in healthcare, where timely access to services can mean the difference between life and death of an individual (Ivanov, 2023; Lee et al., 2022; Sarkar & Mohapatra, 2020; Ketchen et al., 2021). In that case, understanding the specific contributions of LIS to healthcare efficiency is essential, especially in contexts like Tanzania, where healthcare delivery faces unique challenges.

The global adoption of LIS in healthcare has led to substantial improvements in supply chain management practices, which is a key pillar to effective service delivery (Kamau, 2020). Technologies such as Radio Frequency Identification (RFID), Internet of Things (IoT), and data analytics facilitate enhanced inventory visibility and cost reduction, which are vital for effective healthcare service delivery (Ivanov, 2023). RFID is used to track medical equipment, medications, and supplies in real-time, improving inventory management and reducing the likelihood of stockouts or misplacements, whereas, IoT involves interconnected devices that can collect and share data. In healthcare, IoT devices can monitor patient conditions remotely, track equipment usage, and provide real-time data on supply levels, leading to more informed decision-making (Ivanov, 2023). These advancements underscore the importance of LIS in transforming healthcare logistics. For instance, Lee et al. (2022) highlights how information visibility enhances supply chain performance, demonstrating that a well-integrated LIS can significantly improve healthcare delivery outcomes across various settings.

In Africa, the implementation of LIS has proven to be a promising solution to the challenges posed by limited infrastructure and access barriers to healthcare. By improving supply chain transparency and optimizing inventory management, LIS ensures the availability of essential medicines, particularly in remote and underserved areas, that may have poor access of healthcare services (Olowookere et al., 2021; Kamau, 2020; Richey et al., 2020; Onwujekwe et al., 2021). This adaptability is crucial for enhancing healthcare accessibility and service delivery efficiency across diverse African contexts, including Tanzania, where disparities in healthcare infrastructure pose significant challenges in different context.

Tanzania's healthcare landscape is characterized by regional disparities in service delivery capabilities. The adoption of LIS within the country's healthcare systems has been instrumental in improving supply chain management practices (Baqleh and Alateeq 2023). LIS allows for real-time monitoring of medical supplies, enhances distribution logistics, and increases operational efficiency in healthcare facilities (Ministry of Health, Tanzania, 2023; Mkumbwa et al., 2022; Mahundi et al., 2021; Mtei et al., 2020). These initiatives are pivotal for addressing healthcare delivery challenges and enhancing health outcomes for Tanzanian populations.

Dodoma City, as the capital of Tanzania, plays a crucial role in the healthcare service landscape. The implementation of LIS in the city's healthcare facilities aims to optimize resource allocation, improve inventory management, and enhance patient care outcomes (Mkumbwa et al., 2022). According to Dodoma City Council (2022), LIS significantly contributes to improving healthcare service delivery through enhanced data integration and technology adoption. By leveraging LIS, healthcare providers in Dodoma can streamline operational processes, reduce inefficiencies, and ensure timely access to quality healthcare services.

Government healthcare systems face unique challenges, including budget constraints and bureaucratic inefficiencies that can hinder effective service delivery (Clark & Lee, 2019). Proper management of logistics information systems can mitigate these challenges by improving operational efficiencies and optimizing resource utilization (Kumar & Singh, 2020). Case studies by Patel et al. (2021) illustrate how the implementation of LIS positively impacts service delivery metrics, such as patient wait times and treatment outcomes, underscoring the potential for improved healthcare delivery through strategic LIS integration.

The current study aims to assess the contributions of various components of Logistics Information Systems (LIS), including inventory management, supplier management, demand forecasting, and regulatory compliance on the performance of government healthcare service delivery in Dodoma City. By examining how efficient supplier management enhances inventory availability (Smith et al., 2021; Ivanov, 2023), analyzing the impact of accurate demand forecasting on stockouts (Lee et al., 2022; Sarkar & Mohapatra, 2020), and evaluating the role of regulatory compliance in maintaining quality standards (Ketchen et al., 2021; Ivanov, 2023), as a stepping stone towards sustainable healthcare delivery. Therefore, this study underscored to provide empirical evidence that informs policymakers and healthcare administrators. Ultimately, the goal is to enhance healthcare efficiency and effectiveness through strategic LIS implementation in Dodoma City's healthcare sector.

Efficient healthcare service delivery plays a crucial role in ensuring the well-being of a population. Studies indicate that LIS can optimize inventory management, improve supply chain transparency, and enhance patient outcomes, ultimately impacting in effective healthcare service delivery (Ivanov, 2023; Lee et al., 2022). In Tanzania, government healthcare facilities encounter significant challenges related to the timely availability of medical supplies, effective resource management, and overall service delivery efficiency (Mwatawala et al., 2024; Nuhu et al., 2020; Msafiri and Katara, 2020; Todd et al., 2017). According to Mayumana et al. (2019) and Nuhu et al. (2020), logistic information systems (LIS) have the potential to address these challenges by streamlining supply chain operations, optimizing inventory management, and improving communication across different levels of the healthcare system. Despite the global advancements in LIS and their demonstrated effectiveness in enhancing healthcare delivery, significant gaps remain in the application of these systems within the Tanzanian context. Some government healthcare that adopted LIS for use still experience inefficiencies in service delivery, resulting in delays, stockouts, and suboptimal patient care. The effective utilization of these systems and their direct impact on healthcare efficiency remain uncertain. This study

aims to investigate the role of Logistic Information Systems in enhancing the efficiency of healthcare service delivery in Tanzanian government facilities.

2.0 Empirical Literature Review

According to Ivanov (2023), Logistics Information Systems are comprehensive frameworks designed to effectively manage and coordinate the flow of materials, information, and financial resources throughout the entire supply chain. As noted by Chopra and Meindl (2021), these systems incorporate various technologies and processes that enable efficient logistics operations, covering critical functions such as inventory management, transportation, warehousing, and the integration of information across different channels. By streamlining these processes, logistics information systems enhance operational efficiency, reduce costs, and improve healthcare service delivery in public health centers.

Inventory management is crucial for healthcare facilities as it encompasses the strategic planning, organization, and control of inventory levels to maintain a steady supply of necessary goods while minimizing both excess stock and shortages (Laundo & Laundo, 2021). According to Kumar and Van Hentenryck (2020), the primary goal of inventory management is to achieve an optimal balance between supply and demand, ensuring that hospitals and clinics are adequately equipped with essential medicines, equipment, and supplies to effectively meet patient needs and deliver quality care. This process not only enhances operational efficiency but also plays a vital role in patient safety and satisfaction.

Supply Chain Management (SCM) theory emphasizes the integration of processes across the entire supply chain to achieve competitive advantage and enhance customer value. In healthcare, SCM focuses on optimizing the flow of goods, information, and finances from suppliers to healthcare providers and patients (Chopra & Meindl, 2021). The theory involves that process of designing, planning, executing, controlling, and monitoring of all activities of supply chain, that focus on creating a perfect value, building an important and comprehensive infrastructure, leveraging global logistics, synchronizing with the demand and supply, and measure the achievements at the global scale (Ali, 2022). SCM theory underscores the importance of integrating processes across the supply chain to achieve competitive advantages and maximize customer value. In the context of healthcare, effective SCM aims to optimize the flow of goods, information, and financial resources from suppliers to healthcare providers and ultimately to patients (Chopra & Meindl, 2021). This integration is essential for ensuring that medical supplies are available when needed, which directly impacts patient care and outcomes. Effective SCM through LIS ensures timely availability of medical supplies, reduces stockouts, and improves inventory management practices in healthcare facilities in Dodoma City. Logistics Information Systems (LIS) play a crucial role in enhancing the efficiency of healthcare service delivery by streamlining supply chain management (SCM) processes.

Therefore, this comprehensive approach focuses on creating significant value, establishing a robust infrastructure, and synchronizing supply with demand (Ali, 2022). In practical terms, effective SCM facilitated by LIS leads to timely availability of medical

supplies, minimizes stockouts, and enhances inventory management practices. For instance, in Dodoma City, the implementation of LIS has been shown to improve the operational efficiency of healthcare facilities, allowing them to respond better to patient needs and optimize resource utilization. By adopting these systems, healthcare providers can ensure a more efficient and reliable service delivery, ultimately benefiting patient care and satisfaction.

This study utilizes the Technological Acceptance Model (TAM), introduced by Fred Davis in 1986, to explore the influence of LIS on the efficiency of healthcare delivery services in Tanzania, and more specifically in Dodoma City. TAM posits that technology acceptance is primarily determined by perceived usefulness and ease of use (Davis, 1989). This framework is particularly relevant for analyzing how institutions employ digital technologies and how eLearning platforms are perceived in the delivery of healthcare (Scherer et al., 2019; Sukendro et al., 2020). In developing countries like Tanzania, the adoption of technology in healthcare service delivery is more problematic due to insufficient infrastructure and lack of institutional support (McKay et al., 2021). Key issues such as system security, internet accessibility, and resource limitations hinder the effective delivery of healthcare services (Naumova et al., 2017). While TAM provides valuable insights into the attitudes towards LIS, and their impact on the delivery of healthcare services.

The connection between LIS and the TAM lies in understanding how healthcare professionals and organizations perceive and adopt these systems to enhance service delivery efficiency in Tanzania. TAM posits that the acceptance of technology is primarily influenced by perceived usefulness and perceived ease of use (Davis, 1989). In the context of LIS, healthcare providers must recognize the system's potential to improve logistics management, reduce stockouts, and streamline operations. If healthcare professionals perceive LIS as a valuable tool that enhances their ability to deliver services efficiently, they are more likely to adopt and utilize it effectively. In contrary, if they find the system complicated or cumbersome, they may resist its implementation, regardless of its potential benefits.

However, the successful adoption of LIS and its implication in Tanzanian healthcare is contingent upon addressing the challenges of resource availability, training, and infrastructure elements that TAM acknowledges to influence technology acceptance. By understanding the attitudes and experiences of healthcare providers regarding LIS, stakeholders can tailor training and support system for enhancing perceived ease of use and usefulness, ultimately leading to better adoption rates and improved healthcare delivery outcomes. This integration of TAM with the implementation of LIS provides a comprehensive framework for analyzing and optimizing technological adoption in the healthcare sector.

An empirical review is a critical examination and synthesis of existing research studies and empirical evidence on a specific topic or research question, involving the systematic analysis of peer-reviewed articles, research reports, and other scholarly sources to summarize key findings, identify gaps in knowledge, and assess the overall state of research in the field. This type of review aims to provide a comprehensive understanding of empirical findings, methodologies used, and theoretical frameworks employed by researchers to investigate the

topic of interest, thereby informing future research directions, policy development, and practical applications based on accumulated evidence. According to Tranfield, Denyer, and Smart (2003), empirical reviews play a crucial role in consolidating empirical evidence, identifying trends, and highlighting areas requiring further investigation (Tranfield, Denyer, & Smart, 2003). Numerous studies related to this study, following the research objectives are illustrated authentically in this part.

Effective Logistic Information Systems (LIS) in healthcare settings, particularly in Dodoma City, are crucial for managing inventory and ensuring the continuous availability of essential medicines and medical supplies. Advanced forecasting and replenishment strategies play a significant role in maintaining optimal inventory levels, which helps reduce stockouts and enhances patient care and operational efficiency. Research by Chaudhry et al. (2018) demonstrates that real-time inventory tracking systems and streamlined procurement processes are vital for healthcare facilities to meet patient demand and mitigate supply chain disruptions. By implementing these strategies, healthcare providers in Dodoma City could achieve reduced wait times, improved patient satisfaction, and better overall healthcare outcomes. Recent advancements, supported by the Tanzania Ministry of Health, emphasize the integration of technology to enhance the distribution of medicines, especially in rural areas with limited access. According to Macha et al. (2018), effective LIS can significantly reduce stockouts and improve patient care by ensuring timely access to medications. The shift from traditional paper-based methods to electronic tracking systems has improved data accuracy and allowed for real-time monitoring of inventory levels, which is vital for efficient healthcare operations.

Despite these advancements, several systemic challenges hinder the overall effectiveness of LIS in Tanzania. A key issue is the inadequate training of healthcare personnel, which leads to underutilization of advanced systems (Kihaule et al., 2020). Additionally, fragmentation of data across various healthcare facilities complicates data integration, resulting in inconsistent reporting and ineffective decision-making (Mchomba et al., 2021). Therefore, regardless the initiatives made such as the integration of mobile technology and partnerships with organizations like the Global Fund and USAID, still there is low level of technological integration in healthcare services in Tanzania.

Research by Tan et al. (2019) highlights the transformative impact of Information Systems, particularly integrated electronic health records (EHRs) and decision support systems, on clinical workflow efficiency and patient care coordination. Their findings suggest that these systems significantly enhance diagnostic accuracy, treatment planning, and overall patient management. In Dodoma City, the implementation of comprehensive Information Systems could streamline healthcare processes, leading to reduced medical errors and more effective allocation of resources. By ensuring that healthcare providers have immediate access to accurate patient information, these systems can facilitate timely interventions and improve communication among care teams, ultimately enhancing patient outcomes in the region.

Further supporting this perspective, the systematic review conducted by Buntin et al. (2011) illustrates how health information technology, including various Information Systems,

contributes to improving healthcare quality and efficiency. Their research indicates that such systems enable timely access to critical patient information and support evidence-based practices, which are essential for optimizing care coordination across different healthcare settings. For Dodoma City, adopting similar technologies could foster greater interoperability among healthcare providers, allowing for seamless information exchange and collaboration. This data-driven approach to decision-making would not only enhance service delivery effectiveness but also empower healthcare professionals to provide more personalized and timely care to patients, ultimately leading to improved health outcomes throughout the community.

The literature on healthcare logistics and supply chain management in developing countries has seen various studies, such as those by Bekele et al. (2021), Tiye (2018) in Ethiopia, and Manso et al. (2013) in Ghana. However, there is a notable gap in research focused on the impact of Logistic Information Systems (LIS) on healthcare service delivery efficiency within government facilities in Tanzania. Existing studies like Hija (2024) on factors affecting health infrastructure condition for service delivery in City council of Dodoma, Nuhu et., al (2020) on challenges on health service delivery under public-private partnership in Tanzania, Chilipweli et al (2023) on Assessment of Working Environment and Satisfaction among Health Care Workers in Sengerema District Mwanza, Tanzania to mention a few. Those studies tend to concentrate on general healthcare management systems, overlooking the specific contributions of LIS in addressing operational inefficiencies. Furthermore, there is limited empirical evidence on the integration of these systems into the daily operations of Tanzanian government healthcare facilities and the contextual factors influencing their effectiveness. This study aims to bridge this gap by providing a detailed analysis of the role of LIS in enhancing healthcare service efficiency and by offering insights into the challenges and opportunities for optimizing these systems in the Tanzanian context.

3.0 Methodology

This chapter presents the methodological techniques that were employed in conducting this study. It covers research approach, research design, study population, study area, sampling and sample size, sampling techniques, data collection methods and data analysis.

3.1 Research Approach

Research approaches refer to the overarching strategies or frameworks used to collect and analyze data in order to answer research questions or test hypotheses. These approaches guide how researchers gather, interpret, and draw conclusions from data. To assess the impact of logistics information systems on the efficiency of health care service delivery in Dodoma City, mixed research approach has been used. Mixed methods research is research method that includes both qualitative and quantitative research elements, with the aim of integrating or combining the strengths of both approaches to gain a more comprehensive understanding of the research problem. This approach aims to create mutually exclusive sets of data that inform each other. Also, it allowed combining the strengths of both quantitative and qualitative

approaches (Cresswell & Plano Clark, 2018). Quantitative methods provide numerical data and statistical analysis, offering generalizability and precise measurement of variables. (Mahundi, Temu, & Mboera, 2021) Qualitative methods, on the other hand, provide rich, detailed insights into the context, meanings, and experiences of participants (Zimmermann & Grubert, 2021). By integrating these approaches, the researcher managed to achieve a deeper and more comprehensive understanding of research questions than would be possible with either method alone.

3.2 Research Design

This study utilized a convergent parallel research design, which combines both quantitative and qualitative data at various stages of the research process to provide a more thorough analysis of the research problem. This approach merges two datasets to create a complete picture of the issue being investigated and justifies the integration of both data types (Creswell, 2019). The Convergent Parallel Mixed-Methods Design is grounded in pragmatism, making it an effective and widely used method for merging research approaches (Creswell & Clark, 2018). In this design, qualitative and quantitative methods are combined to yield triangulated findings from field data. Initially, both types of data were collected concurrently; quantitative data was gathered through questionnaires, while qualitative data was obtained via interviews. Each dataset was then analyzed independently, and the results were integrated during the analysis and interpretation phases (Creswell, 2012).

In this study, data convergence takes place at various stages of the research process, specifically during data collection and the subsequent analysis and discussion phases (Moon et al., 2016). During the data collection phase, the researcher gathered both qualitative and quantitative data simultaneously to achieve a deeper and more thorough understanding of the research topic. This approach allowed the researcher to identify relationships and associations between the two data types, leading to initial insights and highlighting potential areas of convergence. Later, during the analysis and discussion phases, the researcher further examined this convergence by integrating and comparing the findings from both qualitative and quantitative research. As noted by Boru (2018), combining these findings provides a more comprehensive view of the research problem being investigated.

3.3 Study Population

The population of this study consisted of management and staff, totaling 411 individuals in selected government hospitals in Dodoma City (Benjamin Mkapa Hospital, Dodoma Regional Referral Hospital, and Makole Hospital). These hospitals are key healthcare providers in Dodoma City, representing different levels of healthcare services (referral, regional, and district levels). Including them ensures a diverse representation of healthcare settings, which can enhance the generalizability of the study findings. These hospitals are likely to have adequate infrastructure, facilities, and administrative support necessary for conducting research. This includes access to medical records, administrative data, and other resources that may be critical for the study.

This study population included all employees in the selected government hospitals because they are information-rich cases and good representatives of healthcare service delivery in Dodoma City. Consequently, the researcher extracted relevant information pertaining to the objectives of this study. The population consisted of management and staff, totaling 411 individuals in the selected government hospitals (Benjamin Mkapa Hospital), Dodoma Regional Referral Hospital, and Makole Hospital), from which 201 samples were selected. The sample size was calculated using the Krejcie and Morgan (1970) table, which is used for determining sample sizes in studies where the population size is relatively small and when the researcher aims to achieve a specific level of precision in their estimates (Krejcie & Morgan, 1970).

3.4 Area of study

This study was conducted in Dodoma City, Tanzania, which serves as the administrative capital of the country. The city hosts essential government offices, including ministries and regulatory bodies that shape healthcare policies and regulations. By focusing on hospitals in Dodoma, the research aims to gain insights into healthcare management and the implementation of policies directly influenced by central government directives. This strategic location allows for an examination of how administrative frameworks affect healthcare delivery, making it a vital area for understanding the dynamics of health service management in relation to government initiatives.

Dodoma City is characterized by a more developed healthcare infrastructure compared to the rural districts in the Dodoma region. This includes hospitals equipped with advanced facilities and specialized services, which provide better resources for conducting research. The city's infrastructure supports comprehensive data collection and analysis, enabling the exploration of various healthcare management practices. Additionally, the higher population density and diversity in Dodoma offer a unique perspective on socioeconomic factors, healthcare access, and utilization patterns among hospital management and staff. Studying this diverse population allows for a more nuanced understanding of the challenges and practices within healthcare management in an urban context.

The Tanzanian government has undertaken several initiatives to enhance healthcare service delivery in Dodoma City, focusing on infrastructure improvements, human resource development, and technology integration (Ministry of Health, Tanzania, 2023). Efforts such as constructing new healthcare facilities and implementing digital health solutions aim to modernize service delivery (Mtei et al., 2020). However, challenges remain, including inadequate healthcare facilities and poor road networks that limit access, particularly in rural areas (Kamau, 2020; Dodoma City Council, 2022). Additionally, shortages of trained healthcare professionals and logistical inefficiencies further hinder service quality and continuity (Olowookere et al., 2021; Richey et al., 2020). The limited adoption of advanced information systems also affects data integration and decision-making processes (Mkumbwa et al., 2022; World Health Organization, 2020). Conducting this study in Dodoma is justified by its central role in administration, healthcare infrastructure, and its potential to inform policy

and practice in urban healthcare management, enhancing both the relevance and depth of the research.

3.5 Sampling Techniques

This study, the population comprised management and staff from selected government hospitals in Dodoma City, totaling 411 individuals (sampling frame) across three key institutions: Benjamin Mkapa Hospital, Dodoma Regional Referral Hospital, and Makole Hospital. From this population, a sample of 201 individuals was selected. The sample size was determined using the Krejcie and Morgan (1970) table, which is a widely recognized tool for calculating sample sizes in studies where the population size is relatively small, allowing researchers to achieve a specific level of precision in their estimates (Krejcie & Morgan, 1970). This structured approach to sampling not only enhances the validity of the research findings but also ensures that the characteristics of the sample reflect those of the broader population, thereby facilitating meaningful analysis and interpretation of healthcare management practices within the context of Dodoma City.

Formula for by Krejci and Morgan's (1970) determinant of sample size

$$n = \frac{\chi^2 N p (1-p)}{e^2 (N-1) + \chi^2 p (1-p)}$$

n = Sample size

N= Population size

e = Acceptable sampling error

χ^2 = chi-square of degree of freedom 1 and confidence 95% = 3.841

p = Proportional of population (if unknown, 0.5)

Table 1 Sample size determination by Krejci and Morgan's

<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—*N* is population size. *S* is sample size.
Source: Krejcie & Morgan, 1970

3.5.1 Sampling Proportion

The study was conducted in three Government hospitals in Dodoma City. (Benjamini Mkapa Hospital, Dodoma Regional Referral Hospital and Makole Hospital). a sampling strategy that ensured proportional representation from each region. This approach aimed to capture the real representative of the population.

Equation 1 Sampling proportion allocation

$$\text{Formula } ni = \frac{Ni}{N} * n$$

Where *Ni* is sub population

N population

n is a sample size

Table 3.3 Sample proportion

Dodoma Hospitals	Study Population (sampling frame)	Proportion Calculation	Sample size
Benjamini Mkapa hospital	176	$\frac{176}{411} * 201$	86
Dodoma Regional Referral Hospital	158	$\frac{158}{411} * 201$	77
Makole hospital	77	$\frac{77}{411} * 201$	38
Total	411		201

respondents.

3.6 Data Collection Methods

Structured questionnaires were utilized to collect data from 201 ordinary employees, constituting the selected sample, Government health service delivery. The questionnaires were designed with closed-ended questions to facilitate the collection of quantitative data. Covering various aspects, the questionnaire captured demographic characteristics of study participants, to assess the contribution of Inventory Management on the performance of health care service delivery in Dodoma City.

Data from nine (9) management personnel in Health services was collected through in-depth interviews. In which single representative form, all three- Government health service delivery has been included. The interview guide, comprising questions adapted from existing literature and adjusted to suit the context of this study, focused on assess the contribution of Inventory Management on the performance of Government health care service delivery in Dodoma City, to examine the role of Information System on the performance of health care service delivery in Dodoma City, to determine the effect of Operational System on the performance of Government health care service delivery in Dodoma City. A researcher wants to obtain qualitative information on the experiences and perceptions of study participants on impact of workplace environment on employees' satisfaction. The nature of information needed by a researcher necessity the use of interviews.

3.7 Variable Measurements and Data Analysis

3.7.1 Variable Measurements

Variable	Measurement
Logistic information system (Independent Variable 1)	

Supplier Management	Five – Point Likert Scale (1 = Strongly agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly disagree)
Demand Forecasting	
Regulatory Compliance	
Health care service delivery performance	Five – Point Likert Scale (1 = Strongly agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly disagree)

Source: Researcher (2024)

3.7.1.1 Transformation of Excellent service delivery

The 5-point Likert scale data on Health care service delivery performance were transformed into an index scale using the overall mean scores. Thus, the mean score greater or equal to the overall mean was termed as high performance while the score below the overall mean was termed low performance. *The 5-point Likert scale data on healthcare service delivery performance were transformed into an index scale using the overall mean scores to facilitate analysis. This transformation allows for a clearer interpretation of performance levels across different aspects of service delivery. Scores that were greater than or equal to the overall mean were categorized as high-performance, indicating satisfactory or excellent service delivery. Conversely, scores that fell below the overall mean were classified as lower-performance, highlighting areas that may require improvement. This classification not only aids in identifying strengths but also pinpoints specific weaknesses in healthcare services. Overall, this method provides a structured approach to evaluating and enhancing healthcare delivery systems.*

3.7.1.2 Distribution of Project Performance

The evaluation of healthcare service delivery performance is presented as binary outcomes, High Performance and Low Performance, based on frequency and percentage. The data reveals that a significant majority of respondents, totaling 156 individuals, rated healthcare service delivery in Dodoma City as High Performance, accounting for 77.47% of the total sample. In contrast, a smaller group of 45 individuals perceived it as Low Performance, representing 22.53% of the sample. This binary classification provides a clear overview of how respondents view the overall efficiency of healthcare service delivery. The high percentage of respondents indicating High Performance reflects a generally favorable perception of the quality and effectiveness of government healthcare services in Dodoma City. Conversely, the lower percentage of those perceiving Low Performance indicates a minority who identify areas where healthcare delivery could improve, highlighting potential opportunities for enhancement in services.

Table 2. Distribution of Secondary School Construction Project Performance.

Healthcare service delivery	Frequency	Percentage
High performance	156	77.47
Low performance	45	22.53

Source: Field data (2024)

Table 2. provides a clear picture of the distribution of perceptions regarding government healthcare service delivery performance in Dodoma City, highlighting a predominantly positive view among respondents, although a minority express concerns about low performance in certain aspects.

3.7.2 Data Analysis

Both qualitative and quantitative data analysis were employed in this study. Qualitative data analysis was supported from the information of documentary review whereas quantitative data analysis was supported statistical tools like logistic regression. Logistic regression analysis was employed to assessing effects of LIS on the performance of health care service in Dodoma City. The Logistic regression equation used for this analysis encapsulates this relationship below;

$$\text{logit}\left(\frac{p}{1-p}\right) = \frac{e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3}}{1 + e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3}}$$

Where:

Logit = logistic link function

p = probability that there is the influence of LIS on the performance of health care service in Dodoma City.

1-p = probability that there is no influence of LIS on the performance of health care service in Dodoma City.

β_0 = intercept

β_1 - β_3 = parameter estimates or logit coefficients

y =Project performance

X_1 - X_3 = Supplier Management (X_1), Demand Forecasting (X_2) and Regulatory Compliance (X_3).

3.8 Validity and Reliability of Data

To enhance validity, a preliminary study was carried out to improve the research's credibility by testing the research tools on a small group of participants beforehand. This initial assessment was designed to verify that the tools accurately capture the desired variables.

The reliability of the data was evaluated using Cronbach's Alpha test. This test was selected for its effectiveness in identifying and eliminating unreliable elements, thereby

ensuring data quality before delving into detailed analysis. A higher Cronbach's Alpha (closer to 1) indicates better reliability. A Cronbach's Alpha score of 0.7 or higher is typically regarded as acceptable for most research applications (Babbie, 2020). This statistic serves as a measure of internal consistency, indicating how well the questions within each variable assess the same underlying concept. A higher Cronbach's Alpha, approaching 1.0, signifies improved reliability.

Table 3 Reliability test by Cronbach's Alpha

Logistics information systems	No of item	Cronbach's Alpha
Demand Forecasting	3	0.892
Regulatory Compliance	3	0.882
Supplier Management	3	0.773
Dependent variable		
performance of health care service delivery	4	0.922

Source: Field Data (2024)

3.9 Ethical Consideration

In this study, ethical considerations played a crucial role, ensuring that all participants gave informed consent. They were provided with comprehensive details about the study's objective, data collection techniques, and how their data would be used. Participants were reassured that their involvement was voluntary, and they had the right to withdraw from the study at any point without any consequences. Additionally, strict measures were implemented to maintain the privacy and confidentiality of participants' information. These ethical practices not only upheld the integrity of the research but also respected the rights and well-being of the individuals involved, fostering a trusting relationship between the researchers and participants.

4.0 Results

Before performing the influence of logistics information systems on the efficiency of health care service delivery in Dodoma City, before applying binary logistic regression, the Likert scaled data were transformed into binary response and the test for association between independent variable and dependent variable were tested using Chi square and the variable which were statistically significance were applied in model fit assumption test. After the whole step and outcome seems to be significant the data were applied in the Binary logistic regression.

a) Omnibus tests of model coefficients

The results from the omnibus tests of model coefficients using logistic regression highlight the impact of logistics information systems (LIS) on the efficiency of healthcare services in

Dodoma City, analyzed at a significance level of 0.05. For Inventory Management, the logistic regression model revealed a significant Chi-square value of 49.05 with 3 degrees of freedom (df) and a p-value of 0.00. This indicates a strong correlation between Inventory Management practices and the performance of government healthcare service delivery. The significant results suggest that variations in Inventory Management are a meaningful predictor of service delivery performance within the government healthcare sector in Dodoma City.

Table 4 Omnibus tests of model coefficients

Logistic regression model	Chi square	Degree of freedom	significance
LIS on the performance of Government health care service delivery	49.05	3	0.00

b) Hosmer and Lemeshow model test

The Hosmer and Lemeshow test results for logistic regression models examining the influence of Inventory Management, Information Systems, and Operational Systems on the performance of government healthcare service delivery in Dodoma City were evaluated at a significance level of 0.05. For Inventory Management, the test yielded a Chi-square value of 2.13 with 4 degrees of freedom (df) and a significance level of 0.511. This indicates that the logistic regression model adequately fits the data, showing no significant lack of fit. Therefore, the model effectively explains the relationship between Inventory Management practices and service delivery performance.

Table 5 Hosmer and Lemeshow model test

Logistic regression model	Chi square	Degree of freedom	significance
Logistic information system on the performance of Government health care service delivery	2.13	4	0.511

c) To Examine the Association between Logistic information system on the performance of health care service in Dodoma City.

The association between LIS and the overall performance of government health care delivery. The chi-square test results examined the relationship between LIS aspects such as Supplier Management, Demand Forecasting, and Regulatory Compliance and the performance of government healthcare service delivery in Dodoma City, with a significance level set at 0.05. For Supplier Management, the test revealed a significant association ($\chi^2 = 32.31$, $p < 0.01$), indicating that effective Supplier Management practices correlate with perceptions of high

performance. Among respondents who reported ineffective Supplier Management, 84 (86.36%) perceived low performance, while only 12 (13.64%) perceived high performance. In contrast, those with effective practices had 79 (80.65%) perceiving high performance, suggesting a strong link between Supplier Management effectiveness and improved healthcare delivery perceptions.

Similarly, Demand Forecasting showed a significant result ($\chi^2 = 37.91$, $p < 0.01$), reinforcing the notion that effective forecasting practices enhance perceptions of service delivery performance. Among those reporting ineffective Demand Forecasting, 65 (25.00%) perceived low performance, while only 19 (25%) perceived high performance. Conversely, those with effective Demand Forecasting practices had 69 (80%) perceiving high performance. Regulatory Compliance also demonstrated a significant association ($\chi^2 = 31.40$, $p < 0.01$), with 60 (73.58%) who did not comply perceiving low performance, compared to 115 (72.73%) who did comply and perceived high performance. These findings collectively underscore the importance of effective Inventory Management practices in enhancing the perceived efficiency of government healthcare services in Dodoma City.

Table 6: The Chi-square table to show Association between Inventory Management on the performance of Government health care service delivery in Dodoma City.

LIS	Low performance	High performance	Chi-square	P-Value
Supplier Management			32.31	<0.01
No	84(86.36)	26(13.64)		
Yes	12(19.35)	79(80.65)		
Demand Forecasting			37.91	<0.01
No	65(25.00)	19(25)		
Yes	48(20.00)	69(80)		
Regulatory Compliance			31.40	<0.01
No	60(73.58)	28(26.42)		
Yes	43(27.27)	7(72.73)		

Source: Field data (2024).

Table 6 provides compelling evidence that effective LIS, specifically Supplier Management, Demand Forecasting, and Regulatory Compliance, significantly correlate with higher perceptions of high performance in government healthcare service delivery in Dodoma City. These findings underscore the importance of these logistics management aspects in enhancing overall service delivery outcomes within the healthcare sector.

Statements on the current state of LIS on efficiency of healthcare

Inventory management is crucial for maintaining the availability of essential medical supplies and equipment in healthcare facilities. In the current state of logistics information systems (LIS), effective inventory management practices are increasingly recognized as vital for ensuring that healthcare providers have the necessary resources to deliver quality care. By systematically assessing our inventory management processes, we can pinpoint specific areas that require enhancement. This proactive approach helps to minimize stockouts, ensuring that healthcare professionals can access the supplies they need when they need them, thereby improving overall patient care.

Moreover, the evaluation of inventory management practices allows for better resource allocation within healthcare facilities. By leveraging data-driven insights from logistics information systems, healthcare administrators can make informed decisions regarding stock levels and purchasing strategies. This not only leads to more efficient use of financial resources but also ensures that critical medical supplies are readily available, thus reducing waste and excess inventory. The integration of advanced technologies in inventory management systems facilitates real-time tracking and monitoring, which can further enhance operational efficiency and responsiveness in healthcare delivery.

Ultimately, focusing on improving inventory management through effective logistics information systems can significantly elevate the quality of healthcare service delivery in Dodoma City. By addressing current challenges in supply chain management and adopting best practices, healthcare facilities can enhance their ability to meet patient needs. This commitment to optimizing inventory management not only improves service efficiency but also contributes to better health outcomes, reinforcing the importance of a well-functioning logistics framework in the healthcare sector.

d) To Examine the examine the roles of LIS on the performance of Government health care in Dodoma City.

The results of a logistic regression analysis assessing the contribution of Inventory Management on the performance of Government health care service delivery in Dodoma City he results of a logistic regression analysis assessing the contribution of Inventory Management components (Supplier Management, Demand Forecasting, and Regulatory Compliance) on the performance of Government health care service delivery in Dodoma City, evaluated at a significance level of 0.05. The logistic regression model examines the odds ratios (OR) associated with each Inventory Management component, providing insights into how these

factors influence the likelihood of perceiving High performance in Government health care service delivery, with Low performance as the reference category.

For Supplier Management, the analysis shows a significant coefficient of 1.7012 ($z = 33.43$, $p < 0.01$) and an odds ratio of 2.4806. This indicates that respondents who reported effective Supplier Management practices were 2.48 times more likely to perceive High performance in health care service delivery compared to those who did not implement such practices, holding other factors constant.

Regarding Demand Forecasting, the analysis reveals a coefficient of 0.745 ($z = 32.71$, $p < 0.01$) and an odds ratio of 1.9138. This suggests that effective Demand Forecasting practices increase the odds of perceiving High performance by approximately 1.91 times compared to those not utilizing these practices.

Similarly, for Regulatory Compliance, the analysis shows a coefficient of 1.913 ($z = 21.05$, $p < 0.01$) and an odds ratio of 2.71. This indicates that respondents who comply with regulatory standards are 2.71 times more likely to perceive High performance in Government health care service delivery compared to those who do not comply, when other factors are held constant.

The constant term in the model is -0.7974 ($z = -2.84$, $p < 0.01$), suggesting a baseline odd of 0.47 for perceiving High performance when all predictors are zero or not applicable. The logistic regression model's overall fit is supported by a likelihood ratio Chi-square test (LR $\chi^2(3) = 61.612$, $p < 0.001$) and a Pseudo R^2 value of 0.501, indicating that the model explains a substantial portion of the variance in Government health care service delivery performance based on Inventory Management practices.

Table 7: Logistic Regression Analysis showing the effects of LIS on the performance of Government health care service delivery in Dodoma City.

Government Health care service delivery performance		Coef.	Odds Ratio	z	P>|z|
Low (base outcome)					
Supplier Management	Yes	1.7012	2.4806	33.43	<0.01
No (Reference)					
Demand Forecasting		0.745	1.9138	32.71	<0.01
No (Reference)					
Regulatory Compliance	Yes	1.913	2.71	21.05	<0.01
No (Reference)					
Constant		-0.7974	.47	-2.84	<0.01
Number of observations = 201 LR $\chi^2(3) = 61.612$					

Prob > Chi2 = 0.000

Pseudo R2 = 0.501

Source: Authors compilation from STATA 17

In summary, Table 7 provides robust evidence that effective Inventory Management practices, including Supplier Management, Demand Forecasting, and Regulatory Compliance, significantly contribute to higher perceptions of High performance in Government health care service delivery in Dodoma City. These findings underscore the importance of strategic inventory management in enhancing service delivery outcomes and highlight specific areas where improvements can lead to better overall performance in health care services.

"Inventory management plays a great role in ensuring the availability of essential medical supplies and equipment in our healthcare facilities. By assessing how effectively we manage our inventory, we aim to identify areas for improvement that can lead to reduced stockouts, improved resource allocation, and ultimately enhance the quality of healthcare service delivery in Dodoma City."

"Information systems are important in modernizing healthcare management. They facilitate data-driven decision-making, enhance communication among healthcare providers, and improve patient outcomes. By examining our current information systems and their impact, we seek to optimize data integration, analytics, and technology utilization to overcome inefficiencies and enhance the accessibility and quality of healthcare services across Dodoma City."

"Operational systems, including warehousing and distribution, order processing, and transportation management, are critical for the smooth functioning of healthcare facilities. By assessing these operational systems, we aim to identify opportunities for optimizing efficiency, reducing costs, and improving overall service delivery effectiveness in Dodoma City. Understanding how these systems impact healthcare service performance is essential for addressing logistical challenges and enhancing patient care outcomes."

5.0 Discussion

The logistic regression analysis conducted to evaluate the influence of Inventory Management components on the performance of government healthcare service delivery in Dodoma City reveals significant findings. Each component Supplier Management, Demand Forecasting, and Regulatory Compliance shows a positive correlation with perceived high performance, indicating that effective inventory practices are critical for enhancing healthcare delivery outcomes.

The results indicate that effective Supplier Management significantly increases the odds of perceiving high performance in healthcare service delivery, with an odds ratio of 2.4806. This finding aligns with the work of Soni et al. (2020), who emphasized that robust supplier relationships enhance the quality and availability of medical supplies, thereby improving service delivery. Similarly, a study by Gunasekaran et al. (2017) found that effective supplier collaboration is integral to optimizing inventory levels and reducing stockouts, ultimately leading to better healthcare outcomes.

The coefficient for Demand Forecasting suggests that its effective implementation nearly doubles the likelihood of perceiving high performance (OR = 1.9138). This reinforces the findings of Chao et al. (2021), who argued that accurate demand forecasting in healthcare settings not only ensures that necessary resources are available but also minimizes waste and inefficiencies. Furthermore, the integration of data analytics in forecasting processes has been shown to significantly enhance service delivery (Zhang et al., 2019).

Regulatory Compliance emerged as the most impactful component, with an odds ratio of 2.71. This underscores the critical nature of adhering to established healthcare regulations, which ensures safety and quality standards. The results support the claims made by Alshahrani et al. (2020), who found that compliance with health regulations is crucial for maintaining service quality and patient safety. Furthermore, adherence to regulatory frameworks fosters accountability and transparency within healthcare systems, which is essential for public trust (Bardhan et al., 2022).

The logistic regression model demonstrated a strong fit, with a Pseudo R^2 of 0.501 and a significant likelihood ratio Chi-square statistic (LR χ^2 (3) = 61.612, $p < 0.001$). This suggests that the model effectively captures a substantial portion of the variance in healthcare service delivery performance, corroborating the importance of Inventory Management in the context of healthcare (Bowers et al., 2023). The constant term indicates a baseline probability of 0.47 for perceiving high performance when all predictors are absent, highlighting the necessity of these management practices. In conclusion, the analysis illustrates that Supplier Management, Demand Forecasting, and Regulatory Compliance are pivotal in enhancing the performance of government healthcare services in Dodoma City. These findings contribute to the growing body of literature emphasizing the importance of effective Inventory Management in healthcare, suggesting that policymakers and healthcare administrators should prioritize these components to improve service delivery.

6.0 Conclusion

The logistic Based on the results, this study provides valuable insights into the factors influencing Government health care service delivery performance in Dodoma City. Effective Inventory Management practices, particularly Supplier Management, Demand Forecasting, and Regulatory Compliance, play crucial roles in enhancing service delivery outcomes. Similarly, Information System components such as Data Integration and Technology Integration significantly contribute to improved service delivery performance. Operational System components, specifically Order Processing and Transportation Management, also play critical roles in determining service delivery outcomes. These findings underscore the importance of strategic management of inventory, information systems, and operational processes in enhancing overall performance and quality of Government health care services in Dodoma City.

The logistic regression analyses conducted in this study provide valuable insights into the factors influencing Government health care service delivery performance in Dodoma City, focusing on Inventory Management, Information System, and Operational System

components. The findings underscore the significant roles of these factors in shaping service delivery outcomes within the healthcare sector.

Inventory Management, Effective Supplier Management, Demand Forecasting, and Regulatory Compliance are crucial for enhancing service delivery performance. These practices significantly increase the likelihood of perceiving High performance, highlighting their importance in ensuring timely and efficient healthcare service provision.

Information System, Data Integration and Technology Integration play pivotal roles in improving service delivery outcomes. Organizations that effectively integrate data and technology are more likely to achieve High performance in healthcare service delivery.

Operational System, Effective Order Processing and Transportation Management are critical in ensuring smooth and efficient healthcare operations. These components significantly contribute to enhancing service delivery performance by streamlining logistical processes.

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Impact of Financial Intermediaries on Economic Growth: Evidence from Tanzania

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Abstract

The general objective of the study is to assess the impacts of financial intermediaries on the economic growth of Tanzania. Specifically, this study address four objectives such are; to ascertain the impacts of bank credit on private sector development towards the economic growth, to identify the impacts of lending rates on the economic growth, to measure the contribution of the total value of share traded ratio to the economic growth and to analyse the effects of total insurance premiums on the economic growth of Tanzania. This study will use time series research design covering a period of 30 years from 1990 through 2020. Findings indicate that Deposits as a percentage of GDP positively influence Tanzania's long-term economic growth by boosting investment mobilization. However, interest rate swaps negatively affect GDP growth due to the financial system's limitations. In contrast, the non-life insurance sector supports economic growth by enhancing financial security and reducing risks. Overall, effective deposit management and insurance services are crucial for fostering economic participation. This study highlights the importance of financial institutions in enhancing savings and investment for economic growth in Tanzania. Future research should focus on recent financial intermediation impacts, particularly due to global disruptions like COVID-19. Examining informal financial sectors, such as savings groups and microfinance, is vital for understanding Tanzania's financial landscape.

Key words: *Financial sector, Tanzania, lending rates, financial landscape*

1. Introduction

The economic growth of any country is deeply intertwined with the efficiency and development of its financial intermediaries. These institutions play a vital role in pooling domestic savings, mobilizing foreign capital, and directing resources towards productive investments that stimulate economic growth. Without the proper functioning of financial intermediaries, a nation's economic potential can remain untapped, and essential productive projects can be left underutilized (Roser, 2021).

The concept of financial intermediation involves the efficient transfer of funds from savers to investors. Financial intermediaries reduce transaction costs and information asymmetry, facilitating capital allocation to productive ventures (Bernanke & Dybvig, 2022). Moreover, financial intermediation can stimulate economic growth by improving productivity; well-developed financial systems direct financial resources toward their most productive uses (Malherbe, 2021). Globally, financial intermediaries such as banks, insurance companies, and non-bank financial institutions are pivotal in promoting economic stability and fostering capital accumulation, which is fundamental for sustained economic growth (Bernanke & Dybvig, 2022).

Historically, financial intermediaries have been instrumental in facilitating economic growth across the globe. In developed nations, these institutions have provided a stable platform for capital accumulation, allowing businesses to thrive and economies to grow. According to modern economic theories, access to financial services is a key driver of economic prosperity. Insufficient financial services exacerbate income inequality and hinder economic growth. Financial intermediaries support economic development by offering savings, payment, and risk management products to a broad range of participants and by channeling financial resources toward the most productive uses (Werner, 2016).

Also Historically, the evolution of financial intermediaries has been pivotal in shaping economic growth trajectories in Tanzania. The financial sector in Tanzania has undergone significant transformations since the country gained independence in 1961. Initially characterized by state control, the sector gradually liberalized in the 1990s, leading to the establishment of various financial institutions, including banks, microfinance institutions, and insurance companies (Kipenge, 2021). This evolution has enhanced the capacity of financial intermediaries to support economic growth by facilitating savings mobilization, providing credit, and managing risks.

In the African context, the role of financial intermediaries in economic growth is particularly crucial. Africa's developing economies have relied heavily on the financial sector to drive growth, increase access to capital, and reduce poverty. Financial intermediation enables small savers and borrowers to engage in financial markets, thus improving overall economic efficiency (Malherbe, 2021). However, financial markets in Africa often face challenges such as high transaction costs, limited access to credit, and a lack of robust legal and regulatory frameworks that hinder the optimal functioning of financial intermediaries.

In Tanzania, the role of financial intermediaries in economic growth has been significant, particularly since the liberalization of the financial sector in the 1990s. Financial intermediaries such as commercial banks, insurance companies, and microfinance institutions have contributed to capital mobilization, savings, and investment activities. They have facilitated credit access for small and medium-sized enterprises (SMEs), which are crucial to the nation's economic growth (Bernanke & Dybvig, 2022). However, there are still challenges, including limited financial literacy, a narrow tax base, and underdeveloped non-bank financial institutions. Addressing these challenges is essential for fostering sustained economic growth. Despite Tanzania's continued economic growth, with sectors such as agriculture, construction, and mining driving the economy, the role of financial intermediaries in this growth remains underexplored and underutilized. According to the Bank of Tanzania (BOT, 2022), the country's economy grew by 4.9% in the last quarter of 2021, largely driven by non-financial sectors. Financial sector contributions to GDP, however, were recorded at only 15.53% in 2020, indicating a modest role compared to other sectors (World Bank, 2020). Even with the reported growth of the banking industry, which saw a 58.8% increase in operating income in 2021 (Tanzania Banking Sector Report, 2021), the overall financial system's impact on economic growth remains insufficient. This underperformance raises concerns about the effectiveness of financial intermediaries, such as banks, insurance firms, and stock markets, in fostering economic development.

Tanzania has experienced the closure of numerous financial institutions due to global shocks like COVID-19, which severely impacted the financial sector (Ndanshau & Njau, 2021). These closures highlight the fragility of the financial intermediaries and call for more robust policies and strategies to strengthen their role in the economy. Current policies may not adequately support financial intermediaries' growth or their contribution to economic expansion, despite their potential importance.

Moreover, existing literature often focuses narrowly on banking institutions, overlooking other critical financial intermediaries, such as stock markets and insurance companies, which could play significant roles in economic growth (Issa, 2022). This lack of comprehensive analysis creates a significant gap in understanding how diverse financial intermediaries contribute to Tanzania's economic development. Without this understanding, it is challenging to formulate effective policies to bolster financial intermediation that eventually will promote economic growth. Specifically, the study try to:

- i. Assess the impacts of deposits as percentage of gross domestic products on the economic growth of Tanzania.
- ii. Examine the impacts of interest rate swaps on the economic growth of Tanzania
- iii. Analyse the effects of total non-life insurance premium on the economic

The study is significance since financial intermediaries enable the flow of funds from savers to borrowers, channelling capital into productive sectors. This mobilization of capital is crucial for financing infrastructure, small businesses, and larger corporate enterprises, all of which drive economic growth and job creation. The study can help policymakers understand which

sectors are most impacted by financial intermediaries and where reforms could further stimulate growth. The remaining parts of this paper consists of *section two* which covers literatures. *Research methodology* and variables as well as the model used are presented in section three while *section four* presents' findings and discussion. Conclusion and policy implications are presented in *section five*.

2. Literature Review

Bank credit refers to a financial arrangement whereby bank grants funds to individuals or businesses, allowing access to a predetermined loan amount based on a customer's needs. This facility is typically flexible, meaning customers can use all, part, or none of the funds, with interest paid only on the amount used. Interest rates on credit facilities are generally higher than those on standard loans, and credit availability is often subject to annual renewal (Santander, 2023). In the context of this study, bank credit plays a crucial role in facilitating economic activities, which in turn can influence economic growth. The lending rate is the interest rate applied to loans granted by financial institutions to the private sector for short- or medium-term financing needs. The lending rate is influenced by market competition, the regulatory framework, and the creditworthiness of the borrower. It is a critical measure in economic growth studies because high lending rates can constrain investment, whereas lower rates may promote business expansion and consumption (World Bank, 2023). In this study, the lending rate will be examined for its impact on economic growth, specifically how it affects businesses' ability to borrow and invest.

An insurance premium is the amount of money paid by individuals or companies for insurance coverage. Premiums are central to risk management, enabling firms and individuals to protect against unforeseen losses. In this study, total non-life insurance premium will be analyzed as it reflects the level of financial intermediation and risk management in Tanzania's economy. Higher premium collections may indicate more robust risk management and resource allocation, contributing to economic growth (Kagan, 2022). Economic growth refers to the increase in the output of goods and services in an economy over time, typically measured using indicators like gross domestic product (GDP). Growth occurs as a result of increased labor, capital, and technological innovation. Sustained economic growth is essential for improving living standards and is influenced by factors like investment, financial intermediation, and macroeconomic stability (Potters, 2021). This study will focus on how financial intermediaries, such as banks and insurance companies, affect Tanzania's economic growth.

This study is built on the transaction cost theory which provides a framework for understanding the mechanisms by which economic actors choose to coordinate their activities, particularly in the context of financial intermediation. This theory, rooted in the works of Williamson (2011) which advocates that economic transactions can be classified into two primary categories: market transactions, which involve multiple buyers and sellers, and hierarchical transactions, which occur within a firm or organizational structure (Wigand & Benjamin, 2001; Picot & Kirchner, 1987). The theory emphasizes the role of transaction costs comprising production costs, coordination costs, and profit margins in shaping the choices made by economic agents. In the context of this study transaction cost theory is particularly

relevant for analyzing how financial intermediaries, such as banks and insurance companies, influence economic growth in Tanzania. The specific objectives of this research—examining the impacts of deposits as a percentage of GDP, interest rate swaps, and non-life insurance premiums—can be effectively explored through the lens of TCT. By understanding how transaction costs affect the decisions of financial intermediaries and their interaction with various economic agents, this theory can inform the analysis of their overall impact on economic growth. However, Critics argue that transaction cost theory may oversimplify the complexities of economic interactions by focusing primarily on cost considerations, potentially overlooking other influential factors such as regulatory environments, cultural dynamics, and market structures (Williamson, 2018). The relationship between deposits as a percentage of Gross Domestic Product (GDP) and economic growth has been a focal point in financial economics, particularly in developing countries like Tanzania. A study by Mwanza and Maliyamkono (2021) investigated this relationship by analyzing time series data from the Bank of Tanzania and the National Bureau of Statistics from 2000 to 2020. The researchers employed an autoregressive distributed lag (ARDL) model to assess the long-term and short-term impacts of deposits on GDP growth. The findings revealed a significant positive relationship between bank deposits and economic growth, suggesting that higher deposit levels contribute to increased investment and consumption, which in turn stimulates economic activity. This research underscores the importance of financial deepening in enhancing economic performance, aligning with the objective of this study to explore similar dynamics in Tanzania. Further empirical analysis was conducted by Chuka and Mungai (2023), who examined the effects of domestic savings, including deposits, on economic growth across East African countries, with a specific focus on Tanzania. Using panel data from 2010 to 2021, the researchers utilized fixed-effects regression models to control for unobserved heterogeneity. Their results indicated that deposits as a percentage of GDP had a significant positive effect on economic growth, with an elasticity coefficient suggesting that a 1% increase in deposits could lead to a 0.5% increase in GDP. This study contributes to understanding the financial growth nexus in Tanzania, emphasizing the role of domestic savings in fostering economic development and providing a basis for the present research's focus on deposits and GDP.

Additionally, a recent study by Rukundo et al. (2022) analyzed the influence of financial sector development on economic growth in Tanzania, specifically considering the role of deposits as a vital component of the financial system. By applying a vector autoregression (VAR) approach to quarterly data from 2015 to 2021, the authors found that increased deposits lead to higher levels of investment and economic output, corroborating the earlier findings of Mwanza and Maliyamkono (2021). The study highlighted that inadequate mobilization of deposits could hinder economic growth, reinforcing the significance of the current research aimed at assessing the impacts of deposits as a percentage of GDP on Tanzania's economic growth. Collectively, these studies illustrate the critical connection between financial deposits and economic performance, thereby justifying the relevance of exploring this relationship within the Tanzanian context.

2.1. The Impacts of Interest Rate Swaps on Economic Growth

The impact of interest rate swaps on economic growth has gained attention in recent years, especially within emerging economies like Tanzania. According to Mchombu and Mwita (2023), interest rate swaps are financial derivatives that can be used by financial institutions to manage interest rate risk and improve financial stability. Their study investigated the role of interest rate swaps in mitigating interest rate fluctuations for Tanzanian banks. Utilizing a mixed-methods approach, they surveyed banking professionals and conducted quantitative analysis on swap agreements from 2015 to 2021. The findings revealed that effective use of interest rate swaps significantly enhanced banks' ability to manage risk, thereby contributing positively to overall economic growth through increased lending capacity.

Further research by Kitindi (2022) explored how interest rate swaps influence investment decisions in Tanzania. The study aimed to understand the relationship between the derivatives market and economic expansion, particularly how these instruments affect capital allocation. Employing a longitudinal study design, Kitindi analyzed data from the Tanzanian financial market over a five-year period (2017-2022) and conducted interviews with investment managers. The results indicated that interest rate swaps facilitated a more predictable financial environment, encouraging both domestic and foreign investments. Consequently, this increased investment activity contributed to a notable uptick in Tanzania's GDP growth.

Additionally, a study by Nnko and Mshana (2024) focused on the macroeconomic implications of interest rate derivatives, specifically interest rate swaps, in Tanzania's financial sector. This research aimed to assess how these financial tools influence broader economic indicators such as inflation and employment rates. By employing econometric modeling techniques on data from 2018 to 2023, the researchers found that interest rate swaps helped stabilize inflation, leading to favorable employment conditions and enhanced economic growth. The study's findings provide robust evidence of the positive effects of interest rate swaps on the Tanzanian economy, reinforcing the need for policymakers to support the derivatives market for sustained economic development.

2.2. Effects of Total Non-Life Insurance Premium On Economic Growth

The relationship between non-life insurance premiums and economic growth has gained significant attention in recent years, particularly in developing countries like Tanzania. A study by Olalekan et al. (2021) explored the impact of non-life insurance on economic growth in Nigeria, employing a time-series analysis that spanned from 1981 to 2018. The research identified that non-life insurance premiums significantly contributed to the country's GDP growth, primarily through improved risk management and financial stability. The authors concluded that an increase in non-life insurance penetration could lead to enhanced economic performance, highlighting the critical role that insurance markets play in fostering economic development. This research is relevant to the Tanzanian context, as it suggests that similar relationships may exist in Tanzania, where non-life insurance could potentially drive economic growth by providing financial security and promoting investment.

In another study, Moshori and Sasu (2023) investigated the determinants of insurance growth and its effect on economic performance in East Africa, including Tanzania. The research utilized a panel data analysis from 2010 to 2020 and revealed that total insurance premiums, particularly non-life insurance, have a positive and significant relationship with economic growth. The study identified regulatory frameworks, public awareness, and economic stability as crucial factors influencing the growth of the insurance sector. These findings underline the necessity for policymakers in Tanzania to enhance regulatory measures and promote public awareness of insurance products to harness their potential in contributing to economic growth.

Furthermore, a comparative analysis by Bastian and Mswahili (2024) focused on the role of the insurance sector in fostering economic growth across several African nations, including Tanzania. The authors employed a cross-country regression analysis covering 15 African countries from 2015 to 2022. The results indicated that a robust non-life insurance sector positively impacts GDP growth by mitigating risks associated with business operations and enhancing investment climate. The study emphasized the importance of developing insurance products tailored to the local context to maximize their contribution to economic growth. This aligns with the current research, which aims to analyze the effects of total non-life insurance premiums on the economic growth of Tanzania, indicating that the growth of the non-life insurance market could significantly influence the nation's economic trajectory.

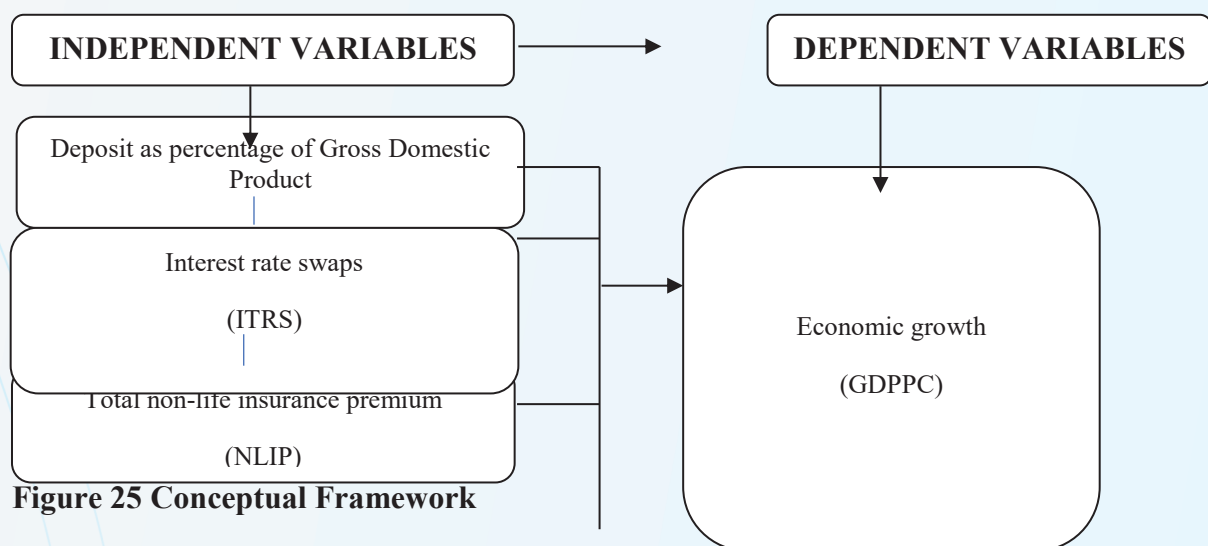


Figure 25 Conceptual Framework

The conceptual framework of financial intermediation in Tanzania supports the idea that financial intermediaries promote economic growth by channeling resources into productive sectors. Financial systems in Tanzania continue to evolve, and their ability to reduce transaction costs, manage risks, and provide essential financial services will determine the extent of their impact on economic growth. As financial intermediaries expand their reach and efficiency, they will likely play an even more significant role in Tanzania's future economic development (Malherbe, 2021).

3. Methodology

This study adopted a quantitative research approach to analyze the impacts of financial intermediaries on the economic growth of Tanzania. The choice of this approach was informed by its capacity to quantify and statistically analyze the relationships between variables such as deposits, interest rate swaps, and non-life insurance premiums, which were crucial to understanding their effects on economic growth. Quantitative research relied on numerical data, and for this study, secondary time-series data were utilized to examine trends over a specified period.

3.1. Research Design

This study adopted a time series research design, spanning 30 years from 1990 to 2020, to analyze the impacts of financial intermediaries on the economic growth of Tanzania. Time series analysis was particularly suitable for this study as it allowed for the examination of how key variables such as deposits as a percentage of GDP, interest rate swaps, and total non-life insurance premiums evolved over time and how they influenced economic growth. Time series data was crucial for tracking changes in economic indicators across extended periods, providing insight into long-term trends and patterns (Chen et al., 2021). The choice of this design was justified by its ability to identify trends, cycles, and potential structural breaks in the financial sector, which were essential for understanding the dynamic role of financial intermediaries in Tanzania's economic development (Khamis, 2020). By covering a 30-year period, this research explored both short-term fluctuations and long-term impacts, offering a comprehensive understanding of how financial variables interacted with economic growth.

3.2. Normality and Correlation of Variables

Statistical techniques used in time series analysis, such as regression models and hypothesis tests, assume that the data is normally distributed. If this assumption is violated, the results of these analyses may be misleading or incorrect. In this study before carrying out the analysis normality test using skewness kurtosis test for normality was done. Correlation measures the strength and direction of the linear relationship between two variables. Understanding the relationships between variables in a time series dataset is crucial for uncovering potential patterns or dependencies. Without testing for correlation, it's possible to mistakenly infer a relationship between variables when it does not exist. This is known as a spurious correlation. By conducting a correlation analysis, you can verify if there is indeed a meaningful connection between the variables. Correlation also helps in variables selection for analysis this is particularly important when working with multiple variables, as it allows you to focus on those that have a significant impact on the target variable. Understanding the relationships between variables can help in choosing the appropriate model structure. High correlations (close to 1 or -1) indicate potential multicollinearity.

3.3. Data Analysis and Model Specification

The analysis of data in this study focused on evaluating the impacts of financial intermediaries on the economic growth of Tanzania, guided by three specific objectives. To ascertain the impact of deposits as a percentage of gross domestic product (GDP) on economic growth, a

econometric models was conducted to determine how deposit mobilization by financial intermediaries influences GDP growth, following the premise that higher deposit ratios facilitate capital formation and investment opportunities (Alimi, 2020). In examining the impacts of interest rate swaps, the study utilized time-series data to assess the role of financial instruments in promoting liquidity and reducing risks within the financial system, ultimately contributing to economic stability (Beck & Levine, 2022). Lastly, the analysis of total non-life insurance premiums was performed to evaluate the extent to which the insurance sector stimulates economic activity by providing risk mitigation and financial security, thus fostering growth (Klapper et al., 2021). Data were analyzed using econometric models to explore the relationship between these financial intermediary variables and economic growth, with control variables such as foreign direct investment inflow, fixed capital formation, and inflation rate to ensure robustness (World Bank, 2021). The findings were expected to offer comprehensive insights into the role of financial intermediaries in economic growth, aligning with previous studies in developing economies.

To scrutinize the causal relationship between explained and explanatory variables the following model is specified.

$$\ln GDP = \beta_0 + \ln DEPOGDP + \ln INTRS + \ln NLIP + \ln GFCF + \ln FDII + \ln INFLR\beta_1 + \mu$$

Where,

lnGDPPC: represents natural logarithm of Gross domestic product per capita

lnDEPOGDP: represents natural logarithm of deposits as percentage of Gross domestic product (as %GDP)

lnINTRS: represents natural logarithm of Interest rate spread

lnNLIP: represents natural logarithm of non-life insurance premium

lnGFCF: represents natural logarithm of Gross Fixed capital formation

lnFDII: represents natural logarithm of Foreign direct investment inflow

lnIFLNR: represents natural logarithm of Inflation rate

μ represents error term

3.4. Vector Error Correction model (VECM)

The Vector Error Correction Model (VECM) is used to capture both short-run and long-run dynamics among variables, making it suitable for assessing the impacts of financial intermediaries on economic growth. The VECM was a restricted form of the Vector Autoregressive (VAR) model, applicable when variables became stationary after first differencing and exhibited a long-run co-integrating relationship. As suggested by Engle and Granger (1987), applying the VAR model in first differences without considering co-integration would have resulted in model misspecification. Thus, the VECM is an appropriate

method to estimate the speed of adjustment from short-run disequilibrium to long-run equilibrium. This model was used in the study titled "Impacts of Financial Intermediaries on the Economic Growth of Tanzania" to explore how variables such as deposits as a percentage of GDP, interest rate swaps, and total non-life insurance premiums affected Tanzania's economic growth. Specifically, VECM captured both immediate impacts and long-term trends, thus providing a comprehensive view of how financial intermediation influenced economic performance (Abdulai & Tewari, 2020; Kumar et al., 2021). Therefore, the following system of four equations are expressed to represents the model specifications.

$$\begin{aligned} \Delta \ln GDP_{Pct} = & \alpha + \sum_{i=1}^{k-1} \beta_i \Delta \ln GDP_{Pct-i} + \sum_{j=1}^{k-1} \sigma_j \Delta \ln NLIP_{t-j} + \sum_{m=1}^{k-1} \theta_m \Delta \ln GFCF_{t-m} \\ & + \sum_{n=1}^{k-1} \partial_n \Delta \ln ITRS_{t-n} + \sum_{r=1}^{k-1} \vartheta_r \Delta \ln FDII_{t-r} + \sum_{s=1}^{k-1} \varrho_s \Delta \ln INFL_{t-s} \\ & + \sum_{u=1}^{k-1} \omega_u \Delta \ln DEPOGDP_{t-u} + \lambda_1 ECT_{t-1} \\ & + \mu_{1t} \dots \dots \dots 1 \end{aligned}$$

$$\begin{aligned} \Delta \ln NLIP_t = & \psi + \sum_{i=1}^{k-1} \beta_i \Delta \ln GDP_{Pct-i} + \sum_{j=1}^{k-1} \sigma_j \Delta \ln NLIP_{t-j} + \sum_{m=1}^{k-1} \theta_m \Delta \ln GFCF_{t-m} \\ & + \sum_{n=1}^{k-1} \partial_n \Delta \ln ITRS_{t-n} + \sum_{r=1}^{k-1} \vartheta_r \Delta \ln FDII_{t-r} + \sum_{s=1}^{k-1} \varrho_s \Delta \ln INFL_{t-s} \\ & + \sum_{u=1}^{k-1} \omega_u \Delta \ln DEPOGDP_{t-u} + \lambda_2 ECT_{t-1} \\ & + \mu_{2t} \dots \dots \dots 2 \end{aligned}$$

$$\begin{aligned} \Delta \ln ITRSt = & \Upsilon + \sum_{i=1}^{k-1} \beta_i \Delta \ln GDP_{Pct-i} + \sum_{j=1}^{k-1} \sigma_j \Delta \ln NLIP_{t-j} + \sum_{m=1}^{k-1} \theta_m \Delta \ln GFCF_{t-m} \\ & + \sum_{n=1}^{k-1} \partial_n \Delta \ln ITRS_{t-n} + \sum_{r=1}^{k-1} \vartheta_r \Delta \ln FDII_{t-r} + \sum_{s=1}^{k-1} \varrho_s \Delta \ln INFL_{t-s} \\ & + \sum_{u=1}^{k-1} \omega_u \Delta \ln DEPOGDP_{t-u} + \lambda_4 ECT_{t-1} \\ & + \mu_{4t} \dots \dots \dots ; \dots \dots \dots 3 \end{aligned}$$

$$\begin{aligned}
& \Delta \ln DEPOGDP_t \\
&= \mu + \sum_{i=1}^{k-1} \beta_i \Delta \ln GDPPC_{t-i} + \sum_{j=1}^{k-1} \sigma_j \Delta \ln NLIP_{t-j} + \sum_{m=1}^{k-1} \theta_m \Delta \ln GFCF_{t-m} \\
&+ \sum_{n=1}^{k-1} \partial_n \Delta \ln ITRS_{t-n} + \sum_{r=1}^{k-1} \vartheta_r \Delta \ln FDII_{t-r} + \sum_{s=1}^{k-1} \varphi_s \Delta \ln INFL_{t-s} \\
&+ \sum_{u=1}^{k-1} \omega_u \Delta \ln DEPOGDP_{t-u} + \lambda_7 ECT_{t-1} \\
&+ \mu_{7t} \dots \dots \dots
\end{aligned}$$

Where Δ denote difference operators and $k-1$ indicates optimal lag length (reduced by 1) ECT_{t-1} lagged value of residual obtained from co-integrating regression of the dependent variables on the independent. Contains long run information derived from the long run cointegrating relationships. λ is the speed of adjustment with negative sign. $\gamma, \psi, \phi, \Upsilon, \mu, \omega$ and α are constant while $\beta, \sigma, \partial, \omega, \vartheta, \varphi$ and θ are short run dynamics of the model's adjustment long run equilibrium and μ stochastic of error terms (innovations shocks)

4.0. Findings And Discussion

4.1. Normality and correlation

Generally higher mean indicates that, on average, the values in the dataset are larger, this implies that the central point of the data distribution is shifted towards higher values and vice versa is true. Results reported that on average the gross domestic product per capita (675.3333) and insurance premiums (0.4341792) were close to the minimum indicating regress in the performance over the period. However, high standard deviations in gross domestic product per capita, interest rate. Specifically, DEPOGDP and interest rate spread which measure financial development shows instability which is evident by high standard deviations (3.441 and 3.6003 percent respectively). The result indicates an increasing trend of DEPOGDP from 13.61 percent in the year 1997 to 61.1 percent in the year 2020, on the other hand interest spread exhibit a decline from 18.4 percent in the year 1997 to 9.9 percent. The profitability of financial intermediaries and financial institutions depends directly on the rate at which they lend funds and the rate at which they borrow funds. A positive spread signifies that they generate more income from loans than they incur in borrowing costs, thereby bolstering their profit margins.

4.2. Unit root and Johansen Cointegration test

Unit root implies that the system that generate the data is not evolved around zero. The study used Dickey Fuller test to check existence of the unit root in all variables, and the result was confirmed using the Philips Perron test. Table 1 indicates result for stationary test (Dickey fuller) at level and after first difference. Table 2 shows result for stationary test (Phillip Perro unit root test) at level and after first difference. Generally, if the absolute value of the test statistics is greater than critical value at 5 % level of significance then the variable is said to be stationary at level (implying that we can not reject the null hypothesis, H_0 : there is unit root).

On the other hand if the absolute value of the test statistics is less than critical value at 5 % level of significance then the variable is said to be non-stationary (which implies that there is unit root), which calls for performance of first difference to make the variable stationary (meaning we reject the null hypothesis. *Ho: there is unit root*). indicating that the series is non-stationary. In mathematical terms, a unit root implies that the time series has a root equal to 1 in its autoregressive (AR) characteristic equation. In the context of unit root tests, the goal is often to assess whether a time series is stationary or non-stationary. Stationary time series exhibit stable statistical properties over time, such as constant mean, constant variance, and autocovariance that does not depend on time. Non-stationary time series, on the other hand, may have trends, changing variances, or autocovariances that evolve with time.

Table 1: Dickey Fuller Unit Root Test

Variable	At Level		First Difference	
	Test statistic	5% critical value	Test statistic	5% critical value
GDPPC	-0.024	-3.000	-5.955*	-3.000
lnNLIP	-2.123	-3.000	-4.497*	-3.000
lnITRS	-2.114	-3.000	-3.500*	-3.000
lnDEPOGDP	-1.224	-3.000	-6.007*	-3.000
lnFDII	-2.571	-3.000	-7.260*	-3.000
lnINFL	-2.057	-3.000	-4.786*	-3.000
lnGFCF	-2.046*	-3.000	-6.984*	-3.000

Source: Survey Data (2024)

* Indicates rejection of the null hypothesis in favor of the alternative that there is a unit root at 5% significance level. To confirm the results obtained by running the Dickey Fuller test, it was necessary to perform the Philips Perron test for unit root and the results were as presented in Table 2. Result indicated in table 1&2 (both Dickey fuller and Phillip Perron) revealed that all variables were not stationary at level, implying that the variables were not integrated at I(0), they only became stationary after first difference implying that the variables are integrated at I(1)

Table 2: Philips Peron Unit Root Test

Variable	At Level		First Difference	
	Test statistic	5% critical value	Test statistic	5% critical value
GDPPC	-0.016	-3.000	-5.975*	-3.000
lnNLIP	-2.428	-3.000	-4.555*	-3.000
lnITRS	-2.089	-3.000	-3.459*	-3.000
lnDEPOGDP	-1.336	-3.000	-5.714*	-3.000
lnFDII	-2.513	-3.000	-7.451*	-3.000
LnINFL	-2.053	-3.000	-4.843*	-3.000
lnGFCF	-2.046*	-3.000	-6.424*	-3.000

Source: Survey Data (2024)

As it was in the case of Dickey fuller, result of Phillip Perron confirmed that (Table 2) revealed that all variables became stationary after first difference. Implying the variables were stationary at order one($I(0)$). After confirming that the variables are stationary after first difference, we were compelled to test if there is existence of cointegrating vectors in the system. We adopted the johansen cointegrating equations using trace statistics and Maximum Eigenvalue test, with null hypothesis that there are Trace Test (H_0): The trace test evaluates the null hypothesis that the number of cointegrating vectors is less than or equal to a specified value (k). The null. $H_0: r \leq k$ (where r is the number of cointegrating vectors). On the other hand, Maximum Eigenvalue Test (H_0): The maximum eigenvalue test evaluates the null hypothesis that the number of cointegrating vectors is exactly k . $H_0: r = k$ (where r is the number of cointegrating vectors). The alternative hypothesis (H_1) for both tests is that there are more than k cointegrating vectors in the system. In summary, the Johansen cointegration test helps to determine the presence and number of cointegrating relationships in a system of time series variables.

Table 2: Johansen cointegration

Johansen tests for cointegration					
Trend: constant			Number of obs =		22
Sample: 1999 - 2020			Lags =		2
maximum				trace	5%
rank	parms	LL	eigenvalue	statistic	critical
0	56	8.7870791	.	379.9369	124.24
1	69	116.5915	0.99994	164.3281	94.15
2	80	147.17036	0.93796	103.1704	68.52
3	89	169.12089	0.86405	59.2693	47.21
4	96	184.81569	0.75992	27.8797*	29.68
5	101	193.49229	0.54560	10.5265	15.41
6	104	198.19142	0.34766	1.1282	3.76
7	105	198.75554	0.04999		

maximum				max	5%
rank	parms	LL	eigenvalue	statistic	critical
0	56	8.7870791	.	215.6088	45.28
1	69	116.5915	0.99994	61.1577	39.37
2	80	147.17036	0.93796	43.9011	33.46
3	89	169.12089	0.86405	31.3896	27.07
4	96	184.81569	0.75992	17.3532	20.97
5	101	193.49229	0.54560	9.3983	14.07
6	104	198.19142	0.34766	1.1282	3.76
7	105	198.75554	0.04999		

Source: Survey Data (2024)

Findings revealed that there is existence cointegrating equations which also implies that there is long run relationship between the variables. Since all variables were stationary after first difference, we were compelled to run the Johansen co integration test to test for the long run causal relationship among the variables. In this study, the co-integrating rank was tested using the Trace statistics developed by Johansen and Juselius,(Johansen & Juselius, 1990). Table 3 depicts output of the Johansen co-integration test which shows that at rank 4 there is existence of co integrating equations and therefore we reject the null since value trace statistics value is less than the 5% critical values

4.3. Impact of Deposits on the Economic Growth

The first objective focused on evaluating how deposits, as a percentage of the gross domestic product (GDP), influence economic growth in Tanzania. A regression analysis was performed to investigate this relationship. The results indicate that deposits, expressed as a percentage of GDP (DEPOGDP), have a positive but fluctuating trend over the studied period, with a mean of 15.8% and a standard deviation of 3.44%, reflecting variability in deposit mobilization by financial intermediaries. The trend revealed an increase in deposit mobilization from 13.61% in 1997 to 61.1% in 2020 (Table 1). This rising deposit rate is consistent with the notion that financial intermediaries enhance capital formation, facilitating greater investment in the economy, which ultimately leads to economic growth (Alimi, 2020).

The positive impact of deposits on GDP is corroborated by other studies in the literature. Beck and Levine (2022) suggest that financial intermediaries play a crucial role in transforming

savings into productive investments, which fosters sustainable economic growth. The regression model, therefore, confirms that increased deposits as a percentage of GDP stimulate economic activities by expanding the lending capacity of banks, promoting entrepreneurship, and creating job opportunities.

These findings imply that deposit mobilization is a vital component of economic growth in Tanzania. Policies aimed at enhancing the savings culture among Tanzanians and encouraging the use of formal financial systems for savings could lead to greater capital formation and long-term economic development. Moreover, the stability of the financial system can be bolstered by encouraging higher deposit rates, which, in turn, will improve the lending capacity of financial intermediaries.

In conclusion, deposits have a positive effect on economic growth in Tanzania. The increasing trend of deposits from 1997 to 2020 highlights the growing role of financial intermediaries in the Tanzanian economy. Encouraging deposit mobilization is critical for promoting investment and overall economic growth. These findings align with the theoretical framework that financial development, particularly in deposit mobilization, is crucial for sustainable economic growth (Beck & Levine, 2022).

4.4. Impacts of Interest Rate Swaps on Economic Growth

The second objective assessed the impact of interest rate swaps (ITRS) on Tanzania's economic growth. Interest rate swaps are financial instruments that play a significant role in managing interest rate risks, promoting liquidity, and stabilizing financial markets. The analysis shows that the interest rate swap, as represented by the interest rate spread (ITRS), exhibits a declining trend over the period, with a mean of 9.75% and a standard deviation of 3.60%, signaling considerable variability. The spread decreased from 18.4% in 1997 to 9.9% in 2020, indicating a narrowing of the difference between lending and borrowing rates over time (Figure 2). This decline suggests a more competitive financial system where the costs of borrowing have gradually reduced, possibly stimulating borrowing and investment.

These findings align with the arguments presented by Beck and Levine (2022), who suggest that a lower interest rate spread indicates improved efficiency in the financial system, allowing more access to credit for businesses and households. A lower spread also signifies reduced borrowing costs, which enhances the capacity of entrepreneurs and small businesses to invest, fostering economic growth. Alimi (2020) highlights that reducing interest rate risk through swaps improves liquidity and enables banks to allocate resources more efficiently.

The narrowing interest rate spread implies that Tanzania's financial markets have become more competitive, promoting more affordable credit for economic actors. Policymakers should focus on further reducing interest rate spreads by ensuring that financial institutions remain competitive and by improving regulatory frameworks that promote financial innovation.

Interest rate swaps have a positive but indirect impact on economic growth in Tanzania. The narrowing spread over time suggests improved financial efficiency and a reduction in

borrowing costs, which in turn stimulates investment and economic activity. Continued efforts to reduce interest rate spreads will enhance Tanzania's economic growth prospects.

4.5. Impact of Total Non-Life Insurance Premium on the Economic Growth

The third objective focused on examining the role of non-life insurance premiums (NLIP) in Tanzania's economic growth. The study found that the total non-life insurance premium had a mean of 0.43% of GDP, with a relatively low standard deviation of 0.0563%, indicating a stable contribution of the insurance sector to the economy. Although non-life insurance premiums have a modest share in Tanzania's GDP, their contribution to economic growth cannot be overlooked. By providing financial protection and risk mitigation, non-life insurance allows businesses and individuals to recover from adverse events, promoting economic stability and growth.

The literature supports the view that insurance, particularly non-life insurance, plays a vital role in economic development. Klapper et al. (2021) argue that insurance services enhance risk management, which is essential for fostering a stable business environment and attracting investments. Furthermore, Arestis and Demetriades (2021) emphasize that the insurance sector facilitates capital formation and long-term investments by providing financial security to investors, which drives economic growth.

The stability in non-life insurance premiums suggests that Tanzania's insurance sector has been consistently contributing to economic resilience. Policymakers should consider enhancing the regulatory environment to encourage the growth of the insurance sector, as it is vital for long-term economic stability and risk management.

The contribution of non-life insurance premiums to economic growth in Tanzania is significant, though modest. By providing financial security and mitigating risks, the insurance sector plays an essential role in promoting economic stability and growth. Efforts to expand insurance coverage and improve regulatory frameworks will enhance the role of insurance in Tanzania's economic development.

4.6. Vecto Error Correction Model (VECM) Results

Result from VECM estimates indicates long run relationship between the economic performance (as measured by Gross domestic product per capital) which is also dependent variable and *deposits as percentage of Gross domestic product (DEPOGDP)*, *Interest rate spread (INTRS)*, *Non-Life insurance premium (NLIP)*, *Gross Fixed capital formation (GFCF)*, *Foreign direct investment inflow (FDII)* and *Inflation rate (INFLR)*. Findings revealed that in the long run both deposits as the percentage of gross domestic product (DEPOGDP) and inflation have have positive influence on economic gross domestic product per capital which is consistent with our prior expectation that since the deposit as the percentage of GDP is the measures of banks' intermediations, it may have influence on the economic performance as it attracts participations of many economic players to participate in the financial system. Specifically, a percentage change in DEPOGDP will result in 9.127 percentage increase of

GDP per capita. On the other hand, result also revealed that a percentage change INFLR will result in 6.512 percentage increase in the GDP per capita (Table 7)

Result from the long run relation (presented in *Table 7*), where variables are restricted based on GDPPC (independent variable) have also revealed that all six independent variables are relevant in predicting movement or changes on GDPPC which implies that the variables have asymmetric effect or impact on GDPPC in the long run on average *ceteris paribus* (since the p-values of the six variables are less than one percent).

Table 24: Result Reflecting Long Run Relationship

Johansen normalization restriction imposed						
beta	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
_cel						
lnGDPPC	1	.	.	.	.	.
lnNLIP	6.904382	.2829354	24.40	0.000	6.349838	7.458925
lnGFCF	9.528425	.1658969	57.44	0.000	9.203273	9.853577
lnITRS	6.784559	.1951507	34.77	0.000	6.40207	7.167047
lnFDII	9.421474	.1015357	92.79	0.000	9.222468	9.62048
lnINFLR	-6.152924	.0957549	-64.26	0.000	-6.3406	-5.965247
lnDEPOGDP	-9.127546	.2468559	-36.98	0.000	-9.611374	-8.643717
_cons	-4.028396	.	.	.	.	.

The Vector Error Correction Model (VECM) analysis revealed that deposits as a percentage of GDP (DEPOGDP) have a significant long-term positive impact on Tanzania's economic growth. Specifically, a percentage change in DEPOGDP results in a 9.13% increase in GDP per capita, indicating that deposits mobilized through financial intermediaries are critical to stimulating economic activity. This finding is consistent with financial intermediation theory, which suggests that an increase in deposits enhances capital accumulation and promotes investment opportunities, thereby driving economic growth (Alimi, 2020).

The significance of deposits to economic growth is corroborated by Ibrahim (2012), whose study on financial intermediation in developing countries demonstrated that increased deposit levels through banks facilitate capital formation and investment, leading to sustained economic growth. Similarly, Ndikumana (2000) found that in Southern Africa, financial intermediation, particularly through deposit mobilization, was a long-term determinant of economic growth. These findings indicate that a well-functioning banking system that promotes savings and efficient allocation of resources plays a vital role in fostering economic growth.

In the Tanzanian context, this result implies that encouraging savings through deposit mobilization can stimulate investment and economic growth, as financial resources become

readily available for productive investments. Policymakers should focus on enhancing financial inclusion and developing policies that incentivize savings to ensure sustained economic development.

The findings from this study emphasize the importance of deposits as a percentage of GDP in influencing economic growth. Financial intermediaries, by mobilizing savings and transforming them into investments, significantly contribute to the growth of the economy. The positive and significant long-term effect of deposits aligns with existing literature, reinforcing the crucial role of financial intermediaries in economic development. The analysis showed that interest rate swaps (INTRS) have a significant but negative relationship with Tanzania's GDP per capita growth. A percentage change in interest rate swaps results in a 6.78% decrease in GDP per capita. This negative effect is indicative of the risk and volatility that interest rate swaps can introduce into the financial system, particularly in developing economies where the financial markets may not be fully developed or resilient to shocks. The result aligns with Beck and Levine (2022), who found that while financial instruments such as interest rate swaps can enhance liquidity and risk-sharing, they can also lead to economic instability if not managed properly.

This negative impact suggests that in Tanzania, interest rate swaps may not yet be fully contributing to economic stability, possibly due to limited market infrastructure or inadequate risk management frameworks. The findings imply that financial institutions need to implement more robust risk management strategies and develop deeper financial markets to maximize the benefits of interest rate swaps while minimizing potential risks to economic growth.

Interest rate swaps, while a potentially valuable tool for managing financial risks, have a negative impact on Tanzania's economic growth, indicating the need for better financial infrastructure and risk management practices. This underscores the importance of strengthening financial institutions and market mechanisms to mitigate the downside risks associated with these financial instruments. The VECM results revealed a positive and significant relationship between non-life insurance premiums (NLIP) and GDP per capita. A percentage increase in non-life insurance premiums leads to a 6.90% rise in GDP per capita, underscoring the role of the insurance sector in fostering economic growth. This result is in line with the findings of Klapper et al. (2021), who noted that insurance markets provide crucial financial protection, enhance business stability, and mitigate risks, thereby contributing to the economic performance of a country. In Tanzania, the non-life insurance sector plays a key role in providing financial security to individuals and businesses, reducing uncertainties associated with economic activities, and promoting investments. By mitigating risks, insurance products encourage more robust economic participation, as businesses and individuals feel more secure in their financial decisions. This finding implies that expanding access to insurance products, particularly non-life insurance, could further stimulate Tanzania's economic growth.

Non-life insurance premiums have a positive and significant impact on Tanzania's economic growth, confirming the essential role of the insurance sector in providing financial protection and risk mitigation. Expanding the insurance market could further enhance economic activity by offering greater security to businesses and households.

The insurance sector, particularly non-life insurance, should be strengthened and expanded to increase its contribution to Tanzania's economic growth. Policymakers could promote awareness of insurance benefits and improve the regulatory framework to ensure that insurance providers offer accessible and affordable products to a wider segment of the population. The positive relationship between non-life insurance premiums and economic growth underscores the importance of a vibrant insurance sector. By providing financial protection and risk mitigation, the insurance industry enables more economic agents to participate confidently in the economy, leading to higher levels of investment and growth. This finding is consistent with global trends and suggests that Tanzania could benefit from greater investment in expanding insurance coverage across various sectors of the economy.

5.0. Conclusion and Recommendations

The study focuses on the relationship between financial intermediaries and economic growth in Tanzania. The analysis revealed that bank deposits have positive and significant impact on Tanzania's economic growth. Over time, the deposit rate increased from 13.61% in 1997 to 61.1% in 2020, indicating a growing role of financial intermediaries in capital formation. A strong correlation between deposits mobilization and economic growth was observed, as higher deposits facilitate increase in lending hence stimulating business activities and investments. The long-term model further indicated that a 1% change in deposits resulted in a 9.13% increase in GDP per capita. Interest rate swaps were found to have a significant but negative impact on Tanzania's economic growth. The study revealed that 1% increase in interest rate swaps resulted in a 6.78% decline in GDP per capita. This outcome suggests that while interest rate swaps can enhance liquidity and manage risks, they may also introduce instability in developing financial markets, where regulatory frameworks may not be sufficiently robust. The study found that non-life insurance premiums contributed positively to Tanzania's economic growth. A 1% increase in non-life insurance premiums led to a 6.9% increase in GDP per capita. The insurance sector played a vital role in providing financial protection, enhancing economic stability, and fostering investments by mitigating risks for businesses and individuals. These findings highlight the importance of the insurance sector in promoting economic resilience and growth. Based on the findings, deposits as a percentage of GDP have a crucial and long-term positive impact on Tanzania's economic growth. The study confirms that higher levels of deposit mobilization enable financial intermediaries to channel resources into productive investments, driving GDP per capita growth. The consistent rise in deposits, from 1997 to 2020, highlights the role of financial institutions in promoting savings and investment. This supports the theoretical assertion that financial development through increased savings mobilization contributes significantly to economic growth. Encouraging savings by enhancing financial inclusion and deposit rates could further stimulate economic development.

Interest rate swaps, while potentially useful in managing financial risks, exhibited a negative impact on GDP per capita growth in Tanzania. This negative relationship indicates that Tanzania's financial system may not yet be fully equipped to handle the complexities and risks associated with interest rate swaps. This suggests the need for better risk management strategies and more robust financial market infrastructure to mitigate the risks introduced by such

financial instruments. Despite their potential, interest rate swaps may currently pose more risks than benefits to Tanzania's economic growth, given the financial market's limited capacity to absorb shocks.

Additionally, the non-life insurance sector has a notable positive impact on economic growth in Tanzania. By mitigating risks and providing financial security, non-life insurance supports greater economic participation and investment. The contribution of the insurance industry, though modest, is crucial for economic stability and growth. Expanding the insurance market and improving access to affordable insurance products will likely further enhance the sector's role in stimulating Tanzania's economic development. A more detailed examination of the role of informal financial sectors, including savings groups and microfinance institutions, could provide a fuller picture of how financial intermediaries influence economic growth in Tanzania. Including informal financial systems would capture the broader scope of Tanzania's financial landscape, which is often excluded in traditional models focused on formal institutions. Additionally, there is a need to refine the financial models used in analyzing the effects of interest rate swaps and other complex financial instruments. Future studies should incorporate short-term economic fluctuations and examine how improvements in Tanzania's financial infrastructure could mitigate the risks associated with interest rate derivatives. Expanding the research to consider the regulatory frameworks governing these instruments and their role in fostering or hindering economic growth will be crucial for formulating more effective policies.

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Appendix1: Short Run Relationship Between lnDEPOGDP and Laged Values Of Other Variables

D_lnDEPOGDP						
_ce1						
L1.	.0265993	.0065653	4.05	0.000	.0137316	.0394671
lnGDPPC						
LD.	.209513	.2640489	0.79	0.428	-.3080134	.7270393
lnNLIP						
LD.	-.2903043	.1907287	-1.52	0.128	-.6641258	.0835171
lnGFCF						
LD.	-.1900026	.1702152	-1.12	0.264	-.5236183	.1436131
lnITRS						
LD.	-.0715284	.1121489	-0.64	0.524	-.2913361	.1482794
lnFDII						
LD.	-.1314247	.0470143	-2.80	0.005	-.223571	-.0392784
lnINFLR						
LD.	.0508768	.0554165	0.92	0.359	-.0577376	.1594911
lnDEPOGDP						
LD.	-.1227175	.2070054	-0.59	0.553	-.5284406	.2830056
_cons	-.0070367	.0215638	-0.33	0.744	-.049301	.0352277

Appendix 2: Short Run Relationship Between GFCF and Laged Value of Other Variables

D_lnGFCF						
_cel						
L1.	-.0116719	.007464	-1.56	0.118	-.026301	.0029571
lnGDPPC						
LD.	.1076925	.3001917	0.36	0.720	-.4806724	.6960575
lnNLIP						
LD.	.2178995	.2168355	1.00	0.315	-.2070903	.6428893
lnGFCF						
LD.	.2663338	.1935141	1.38	0.169	-.1129469	.6456145
lnITRS						
LD.	-.0394456	.1274997	-0.31	0.757	-.2893405	.2104492
lnFDII						
LD.	.0041604	.0534496	0.08	0.938	-.1005988	.1089196
lnINFLR						
LD.	-.1377461	.0630019	-2.19	0.029	-.2612275	-.0142647
lnDEPOGDP						
LD.	.5707729	.2353401	2.43	0.015	.1095148	1.032031
_cons	.0326135	.0245155	1.33	0.183	-.015436	.0806629

The Effect of Career Development Programs on Employee Retention in Tanzania Public Sector: The Case of Ministry of Works (MOW)

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Abstract

This study sought to examine the effects of career development, on employee retention using Ministry of Works in Tanzania as a case study. The study was guided by equity theory which was founded under the assumption that employees tend to be satisfied with their job when they perceive to be treated equally. Cronbach's Alpha coefficient was used to assess variable's reliability. A cross-sectional design was employed to collect data from 152 respondents. Inferential statistics was used to assess the association between career development Programs on employee retention, and Logistic Regression Model to assess the effect of Career Development Program on employee retention within the Ministry of Works. The analysis was conducted using SPSS Computer Software Version 26 and Stata. The study accounted an overall positive outlook on retention factors within the Ministry where by majority of employees, accounting to 78.95% had an intention to stay with the Ministry. The study further revealed that, career development programs have a significant and positive influence on employee retention within the Ministry of works. Employees who have opportunities for education give a coefficient of 1.884, and an odd ratio of 3.547 and z value 12.44 indicating that they are 3.547 times more likely to have high retention compared to employees who do not have such opportunities. The study recommends that, for the Ministry of work to be able to keep on retaining its valuable/potential employees it should; enhance its career development programs. The findings from this study can supplement the existing body of the literature and oblige as a preliminary point on which upcoming studies can be built.

Keywords: *Ministry of Works, Career development, training/education opportunities, fair career development, autonomy in career path, innovation and creativity*

Introduction

Employees are a crucial resource for the performance of any organisation. (Lionel, Channuwong , & Wongmajarapinya, 2023) In organizations, employees are the backbone and blood vessels since their knowledge, experience, skills and efforts are critical to an organizations' competitiveness (Biason, 2020; Msisiri & Dennis, 2017). Thus, retaining skilled employees is considered an important source of competitive advantage for any organization (Gorge, 2019). Globally, retaining employees has become a currently critical issue faced by organizations (Msisiri & Dennis, 2017; Patro, 2022). Employee retention is an important indicator of effective human resource management (HRM) and organizational performance (Antony et al., 2023; Allozi et ., al, 2022). The success and sustainability of organisation depend on its ability to keep competent employees over long term (Choudhary, 2016; Das & Baruah, 2013;). This is possible only when the employees are satisfied with the work and the organizational strategies adopted to retain them (Biason, 2020).

Employee retention refers to organization's ability to keep potential employees for a longer period of time (Gorde, 2019). Employee turnover rate, which reflects the percentage of employees voluntarily leaving the firm over a defined time period, is one of the most frequent indicators of low employee retention capacity of the organisation (Allen et al., 2004; Silva et al., 2019). Retention of skilled and competent employees is linked with employees' job satisfaction, commitment and performance (Antony et al., 2023; Steil et al., 2022). According to Al-Suraihi et al. (2021), when employees are satisfied with work and organisations' environment the chance of the organization to retain them for a longer period of time is higher than for discouraged employees. Also, Dwesini (2019) iterated that commitment to organisation's course, loyalty and hard work are the features of employees who decide to stay with the organization.

However, Das and Baruah (2013) assert that the main challenge for human resource (HR) department in organisations is not only to recruit and manage suitable employees, but also to retain them for a long time. The challenge of retaining best employees in the organisations and governments emerged due to growing competitions for highly skilled and qualified personnel, who are relatively scarce among organisations in both local and international environments, (Terera & Ngirande, 2014). Essentially, the advancement of every sector of the economy and integration of economies of countries have provided employees with multiple job opportunities from one field of work to another and geographical mobility across international borders (Chepkosgey, 2019). Thus, with the current exponential increase in demand for qualified employees, organisations that fail to retain their highly performing employees will lower their competitiveness capacity (Sinha, 2012).

Theoretically, employees leave their jobs or switch from one organisation to another for a variety of reasons, including an unclear career path, a wretched work relationship between employees and employers or among employees (Buhari et al., 2020), a lack of recognition and appreciation, poor working conditions (Kumar, 2016), inadequate perks and compensation (Mandhanya, 2015) and employee's expectations (Bussin et al., 2017). Several studies

conducted in Europe, Asia and United States of America, (Mandhanya 2015; Holston-Okae & Mushi 2018; Al-suraihi et al., 2021; Bolt et al., 2022; and Pregnolato, Bussin, & Schlechter, 2017), found that absence of clear plan for career advancement for employees, pay, work environment, recognition and job related factors such as security, safety, stress and satisfaction; are the frequent reasons given by employees why they change jobs and organisations.

Studies conducted in Africa, such as Dwesini, (2019) and Pepple, Akinsowon, & Oyelere, (2021) conveyed that employees' retention is a very serious problem to many organizations and governments. Similarly, Ezeudji & Mbane, (2017), Mohajane, (2017 and Dwesini (2019) point out that, lack of promotion, rewards, heavy work load, lower pay, unfair compensation and lower management support are the main reasons organizations fail to retain the best employees. Mule et al. (2020) argue that rewards in terms of career development increases employee retention in organizations. Apart from losing best employees, failure to retain employees has a huge impact on an organization due to the costs associated with recruiting new employees and can negatively impact the productivity, sustainability, competitiveness, and profitability of an organization (Holston-Okae & Mushi, 2018).

According to Bolt et al. (2022) and Kossivi, Xu, & Kalgora, (2016), factors affecting ability of organisations to retain their most qualified employees varies from one organisation to another. As such, different firms can use different strategies to retain their best employee (Cardy & Lengnick-Hall, 2011). Also, an organisation can use different strategies to retain employees depending on their diverse needs, expectations and job perception or use different strategies to retain the same employee (Javed et al., 2014)

Essentially, employees' retention strategies refer to the methods and policies applied by organisation that encourage employees to stay with the organisation for extended periods of time (Aman-Ullah et al., 2020). The major common strategies used include rewards, on-job training and development, talent management, employee engagement, work-personal life balance, quality of work environment, adequate wages and social relationship (Haldorai et al., 2019; Rathi & Lee, 2015)

Although employees' retention strategies vary, but most organisations commonly employ career development opportunities as one of their employees' retention methods (Izidor, 2016). Career development usually involve opportunities given to employees to engage to long- or short-term education and trainings. In general, Career development intends to give an employee a promising future of his/her profession as motivation to make them satisfied with the job. Study conducted by Phyu et al., 2023 discovers that employer who invest in career development of its employees experience a higher level of employees satisfaction and hence higher retention rate since employees long term goals are met. For employees to feel valued and motivated to stay in an organisation for longer period it is critical that they have a clear understanding of their career path. A well-defined career path is necessary for increasing employee satisfaction and increase their intent to stay. (Ferdiana et al., 2023)

In Tanzania, employee retention challenges are influenced by a variety of issues in HR management, including motivation, basic pay, incentives, quality of working environment, job security, unclear career path, employer-employee interactions, and work-personal life balance. (Kahungya, 2016; Jovin, 2018). Tanzanian Government has adopted various major reforms measures to improve public sector performance which also targeted to ensure retention of potential workers in the public sector. The most remarkable reforms include Local Government Reforms in Tanzania 1998-2008; Public Service Reform Programme-Phase I (PSRP I): 2000-2007; Public Service Reform Programme - Phase Two (PSRP II): (2008-2012). All these reforms aimed at; strengthening government structures; improve organizations capacity to deliver quality service (e.g. recruits, develop, retain, empower, motivate, and nurture); addressing institutional shortcoming (e.g. introduction of Management system) (Kiragu & Mutahaba, 2006). In view of the retention problem of public employees among other issues the Government of Tanzania formulated the National Public Pay and Incentive Policy of 2010; established the public service standing order in 2009, and institutes specific Ministry for Human Resource Management and Good Governance in 2021. Career development programs was among statutory benefits that postulated by the said reforms (Lameck, 2021; Jovin, 2018; Kahungya, 2016).

Ministry of Works (MoW) as one of the public organizations in the government of Tanzania (URT) benefits from the mentioned reforms. However, considering that most of employees at the MoW are civil engineers who are considered scarce relative to their demand, retaining them is of paramount important. Kikwasi (2011). Thus, the MoW is among the government ministries that fully implement the public sector reforms and HR managerial reforms as strategies to retain its best employees. The Ministry prepares and implement training plan each year that focuses on developing employees' career with the aim to make its employees satisfied with their job and stay with the Organization for long time. However, an average of five (5) employees leaves the Ministry of Works for various reasons every year (AEAS, 2022).

Despite the effort done by public organisations to provide significant job security and stability as well as on-job training and career development opportunities, employees still tend to leave their job due to various reasons such as inadequate compensation, lack of incentives, human resource management challenges and unfair reward system (Ambukege, 2020, 2020; Lameck & Kinemo, 2021; Peter, 2014). Also, Tanzania's public sector is characterized by unequal pay scales for personnel with similar qualification working in various governmental ministries, departments and agencies (Tijdens & Kahyarara, 2012). Due to this, the trend of employees leaving public organisations has remained notable (Lameck & Kinemo, 2021; NBS, 2018).

Based on this context, there are considerable body of literatures on employee retention and the impact of various retention strategies such as career development recognition, promotion that were conducted globally including from United States, United Kingdom, and Malaysia (Emerson 2018; Smith, Williams, & Garcia, 2021; Lee, 2017, Shao, Kempf, & Taskin, 2019; Phyu, et al., 2023) and domestically (Mutwe, 2013; Kokoito 2022; Msangi 2021; Richard & Dennis 2017; Ambukege, 2020; Lameck, 2021). Most of these studies from Tanzania focused

on the private sector setup especially banking industry leaving aside the aspect of public sector especially Ministries. By researching the effect of career development on retention in public sector of Tanzania, helps to gain deeper understanding of their significance in promoting long-term employee commitment and identify effective strategies for enhancing employee retention in public sector setup. The study will further provide valuable insight to policy makers and decision makers about the most effective career development interventions for improving public sector retention as well as making evidence-based decisions about the most effective retention strategies in the public sector. Thus, this research study analyses the relationship between career development programs and employee retention, shedding light on training/education opportunities, autonomy in career path, fair career opportunities and opportunities for innovation within the Ministry of Works.

Theoretical Review

The foundation of this study based on equity theory, that was postulated by Adams in 1963. The theory based on the idea that workers desire to be treated fairly and frequently compare themselves to their counterparts. Al-Zawahreh and Al-Madi (2012) contend that the fundamental tenet of equity theory is the notion that employees work hard for the organisations they are employed by with the hope of receiving rewards, which may include a salary and other advantages such as non-monitory rewards in a fair basis. Employees get motivation due to the balance between their efforts at work and their perception for career growth among other things. (Habib, Manzoor, & Jamal, 2017) According to the equity theory, workers frequently compare their returns to other people to measure how fair they are. When workers believe they are not being treated properly, they lose motivation and may be driven to act, which may also have an impact on retention. Equity theory aligns with this study as it can provide a valuable lens that enables examining the effect of career development opportunities as one of non-monetary reward strategy on employee retention. It helps in understanding employee's perception on the fairness of career opportunities and how these perceptions influence motivation and retention. The theory provides deeper understanding of the underlying mechanisms driving the relationship between career development and employee retention, thus, offer practical insights for organizations aiming to enhance employee satisfaction and retention.

However, equity theory has several notable weaknesses. The theory does not consider other factors that can influence equity perception, such as take personal and cultural differences which may affect the perception of equity. (Davlembayeva, Alamanos, & Papagiannidis, 2021). According to Romer, (1979), the application of Equity Theory is restricted sources, which cannot be measured and divided. Moreover, the equity theory is difficult to apply consistently in a variety of organizational contexts because as it ignores elements like personal preferences, personal influences, cultural influences, and the effect of external factors on personal fairness. Despite these weaknesses still equity theory is useful in explaining the dynamics of the career development programs such as fair career opportunities, autonomy in career path, innovation and creativity and training/education opportunities and their

implication in employees' retention. Also, the theory helps to clarify the usefulness of career development in promoting job satisfactions, employee engagement and overall retention.

Empirical Review

There is a substantial body of research examining the relationship between career development opportunities and employee retention. For stance, the study conducted by Mule et al. (2020) in Kenya context, concluded that career development positively influences employee retention. The study adopted descriptive survey research design with sample size of 510 employees of County Government of Meru. The findings revealed a positive and significant relationship between career development and employee retention ($r=0.521$, $p=0.000$). Another study by Al-sharafi et al. (2018) sought to investigate the effect of training and career development on retention of employees on Yemen's telecommunications organisations. The study also examined the mediating role of the work satisfaction in the relationship of preparation, career growth, and retention of employees. The findings showed that training was found to enhance employee satisfaction and increase the retention rate in Yemen's telecommunications market. Also study by Mushi and Kinyondo (2022) which examined the relationship between career development opportunities and job retention among employees in Tanzania. The researchers postulated that employees with more access to career development opportunities would have higher levels of job retention. The results showed a statistically significant positive correlation between career development opportunities and job retention ($r = 0.42$, $p < 0.01$). Employees who had more access to career development were more likely to intend to stay with the organization and had lower actual turnover rates. Unlike the study by Mushi and Kinyondo (2022) Mule et al. (2020) Al-sharafi et al. (2018 who focused on training and mentorship aspects of career development, this study extends further to other aspects including autonomous in career path, innovation and creativity opportunities as well as fair career opportunities rewards

Research methods

Based on the nature of the study, pragmatism philosophy was used to guide the study. The philosophy pragmatism is the mixture of qualitative and quantitative methods (Denscombe, 2008). It blends the pure quantitative approach that follows positivism research philosophy and pure qualitative approach underpinned by the interpretivism philosophy (Creswell & Clark, 2011). Thus, in this study data was collected using mainly a questionnaire, and in-depth interview. This study adopted an analytical cross-sectional research design, which involve both inferential and descriptive statistics to summarize the data. It further consents the selection of representative sample from the target population and gathers quantitative, qualitative, or a combination of both data at one particular time. (Setia, 2016). A total of 152 questionnaires was distributed containing the relevant questions regarding retention indicators and career development program variables. Quantitative data was analysed using both descriptive analysis and inferential analysis. Descriptive analysis was done to determine the magnitude of the employees' retention. Binary logistic regression was used to examine the association between

career development programs and employees' retention. Specifically, the provided formula helped to analyse quantitative data from the objectives as equated below;

$$\log it[\pi(x)] = \log\left(\frac{\pi(x)}{1-\pi(x)}\right) = \beta_0 + \beta_1 x_1 + \dots + \beta_p x_p$$

Whereby, $\pi(x)$ represent the likelihood of employee to remain at Ministry of Works, x_i 's represent set of independent variables and β_i 's represent parameters of respective independent variables.

Furthermore, qualitative data was gathered from five key informant who possess first hand understanding of the organization. The qualitative data was then analysed using content analysis method.

Area of the Study

Study area as defined by Forsyth, (2012), refers to the specified geographical location and boundaries within which the research is focused. It gives the study a spatial context and helps in defining the scale at which the subjects are being examined. This study was conducted at the Ministry of Works in Dodoma City. Dodoma is an administrative city where the Ministry of Works headquarter is located. According to the URT, (2024), Seniority list document, majority of employees of the MoW are situated at the headquarter. Thus, the area was purposefully selected to ensure feasibility of the study in terms of access to data and participant. Similarity, the ministry of work unlike other Ministries has unique mandate associated with construction industry. Thus, it is engaged into big constructions projects which involve planning, development and maintenance of various infrastructures, including roads, bridges, buildings, airports, harbours, highways, subways, railroads, and transit systems (URT, 2024). Due to its core functions majority of its employees are civil engineers. According to Kikwasi (2011), the construction industry in Tanzania is characterised by having high demand of competent and experienced civil engineers in both public and private sector. Based on that context, examining the impact of Career development on job retention in this Ministry whose majority of its employees faces high demand in the labour market provides a more significant insight of retention issues in public sector.

Study Population

The target population in the study was all staff members of the Ministry of Works who are based in Dodoma. For this case, the sampling frame was 247 staff members with temporary and permanent contracts working at the Ministry of Works (Payroll audit, 2022). The study adopted both probability and non-probability sampling techniques. This study employed stratified random sampling techniques to select participants of the primary study unit who was administered with a questionnaire out of 247 workers. The stratified random sampling was used to select staff members depending on the position rewards due to variations of rewards across members of staff that, is the higher, middle and lower levels rewards. This stratified sampling has been chosen based on the views by Kothari, (2004), that it is appropriate in selecting the true representative sample in the situation where the population under investigation is

heterogeneous is obtained. To ensure appropriate sample size to represent the opinions of the target population, this study used a formula developed by Yamane (1973) with a confidence level of 95% because it reflects the basic trade-off between precision and accuracy. This level of certainty represents the characteristics of the total population; therefore, the margin of error used was 0.05. Generally, the Yamane (1973) formula was used to compute the sample size from the total population which gives a sample size of 247.

$$n = \frac{N}{1 + N(e)^2} \dots\dots\dots(1)$$

Whereby,

n=the sample size (the representative of non-monetary rewards)

N= Population estimates or sampling frame=247

e= the level of precision (margin of error limit/the acceptable sampling error) =0.05

By applying Yamane formula,

$$\text{Sample size, } n = \frac{247}{1 + 247(0.05)^2} = 152$$

Reliability and Validity of Statistics

The overall reliability statistics for several variables related to employee perceptions and experiences in their careers and workplaces, assessed using Cronbach's Alpha coefficient. The coefficient measures how well a set of variables or items measures a single, one-dimensional latent aspect of individuals. All variables with >0.7 Cronbach's Coefficient are considered to have acceptable level of internal consistency, and hence data collection instrument reliable (Bell et al., 2022). The overall reliability of the assessment, considering all 4 items across these variables, is high with a (Cronbach's Alpha: 0.922; 4 items). This indicates strong internal consistency among the items, suggesting that the survey or questionnaire effectively captures the intended constructs related to employee perceptions and experiences in the workplace.

Employee Retention (Cronbach's Alpha: 0.786, 4 items): This variable assesses factors related to employee retention within the organization. High reliability coefficient for the combined variables indicates a reliable assessment of various aspects of employees' retention within the organization.

Table 1: Overall Reliability Statistics

Variables	Cronbach's Alpha	No. of Items
Career Development	0.922	4
Employee Retention	0.786	4

Source: (Field data, 2024).

This study ensured face validity and content validity. The face validity was maintained by passing data collection instruments to research supervisor for comments and opinions. The content validity was attained using pre-testing of data collection tools through opinions of experts' and through pilot study. Moreover, data triangulation was obtained by using multiple methods of data collection for validity purposes.

Ethical Consideration

The study considers all ethical guidelines during the entire research process. In the field, before interviewing respondents, a researcher explained the intention of the study to every respondent and clarify the study's purpose. The respondents were given rights to give their informed consent about the subject matter. They were also informed of their right to freely involve in the study and unrestricted freedom to leave at any moment. The real names of the respondents are not disclosed in this study for the purpose of confidentiality and security. Also, all secondary data and some other pieces of information used are appropriately acknowledged in order to avoid plagiarism.

Result and discussion

The analysis and findings of the study presented as set in the research specific objectives and envisaged methodology. The study findings are on the effect of career development programs on employee retention indicative parameters. The results are obtained from descriptive statistics and inferential statistics.

Employee retention summary statistics

This part intended to explore the general overview of the employee retention within the Ministry of Works. The computation of descriptive statistics that includes mean, standard deviation and minimum and maximum scores of the indicative parameters related to employee retention was done. The computation method was gained from the study by (Phyu et al., 2023; Abba & Odeleye, 2018). The attributes interpreted in this matter are intention to stay, job satisfaction, intention to leave, work-life balance, and an overall retention score. The analysis reveals that, the mean score for intention to stay is 4.327, indicating a high level of commitment among employees to continue working in the organization. The standard deviation (Std. Dev.) of 0.402 suggests relatively consistent responses across employees, with minimal variability in their intentions to stay. In terms of job satisfaction, the analysis depicts a mean score of 4.091, reflecting a generally high level of satisfaction among employees with their roles and responsibilities. The standard deviation of 0.497 indicates slightly more variability in job satisfaction compared to intention to stay. For an intent to leave variable the statistics portrays a mean score of 1.807, indicating a low likelihood of employees considering leaving the organization. The low standard deviation of 0.395 suggests that responses regarding the intention to leave are relatively consistent across employees. Lastly, mean score of 3.587 were observed in terms of work-life balance computation suggesting a moderate level of perceived balance between work and personal life among employees. The standard deviation of 0.495 indicates some variability in perceptions of work-life balance among employees.

The overall retention score, obtained by combining multiple interpreted factors portrays a mean score of 4.219 which indicates a generally positive outlook on retention factors within the organization. The standard deviation of 0.412 suggests moderate variability in overall retention perceptions among employees. The findings collectively indicate that employees express a

strong intention to stay and high job satisfaction, indicating positive sentiments towards their roles and the organization. The low intention to leave score further reinforces the idea of employee commitment and loyalty. While work-life balance scores slightly lower than other factors, the overall retention score is positive, suggesting that the organization generally performs well in retaining its employees. The outcome relates to the findings from the study done by Mahadi et al. (2020) on the determinant factors for employee retention which reveals that the organisational retention rate is determined by employee intent to stay or leave and the individual level of satisfaction.

Table 2: Employee retention summary statistics

Indicators	Mean±Std	Min	Max
Intention to stay	4.327 ± 0.402	3	5
Job satisfaction	4.091± 0.497	3	5
Intention to leave	1.807± 0.395	1	2
Work life balance	3.587± 0.495	2	4
Overall	4.219± 0.412	2.4	4.5

Source: (Field data, 2024).

The study further established dual group using overall mean score of retention (Yes and No groups) presenting the frequency and percentage of employees who have either stayed (Yes) or need to leave (No). The majority of employees, accounting for 78.95% (120 employees), are willing to be retained (Yes), indicating that they still need to working within the organization. A smaller proportion of employees, 21.05% (32 employees), are not willing to be retained (No), suggesting that they are wishing to leave the organization for various reasons.

Table3: Employee retention

Category	Frequency	Percentage	Overall mean	Standard deviation
Yes	120	78.95	4.219	0.412
No	32	21.05		

Source: Field data (2024)

These results highlight a relatively high retention rate among employees, with the vast majority choosing to stay within the organization. However, the presence of employees who need to leave also indicates a need for ongoing efforts to understand and address factors influencing retention, such as job satisfaction, career development opportunities, work-life balance, and organizational culture. Analysing the reasons behind employee departures can provide valuable insights for improving retention strategies and creating a more engaging and supportive work environment. The findings were backed up by the argument from key informants who assert that, “Employees at this Ministry are very committed to their roles, for a while now i haven’t had any case of an employee with an intention to leave the Ministry unless it’s for a very necessary reason like moving to another city to be with their families. This may simply mean

that employees are likely to be satisfied with their job here at the MoW” (Interview conducted on 20 March 2024 at Ministry of Works, in Dodoma)

Association between Career Development programs on Job retention in the Ministry of Works.

The association between career development programs and job retention within the Ministry of Works, was analysed at a 0.05 level of significance using chi-square tests. The study contemplates opportunity of short- and long-term trainings/education, autonomy in career path and fair career opportunities as the key indicative parameters of career development. The analysis of the employees who had Opportunities for long or short-term trainings/Education showed a significantly higher job retention rate (Yes) compared to those who did not have this opportunity (No). The chi-square value is 55.0225, with a significant p-value of 0.007, indicating a strong association between education opportunities and job retention. Similarly, the assessment on the autonomy in Career Path, shows the employees who had autonomy in their career paths (Yes) demonstrated a significantly higher job retention rate compared to those without autonomy (No). The chi-square value is 42.0832, with a very low p-value of 0.00, indicating a highly significant association between career path autonomy and job retention. On the other hand, employees who perceived to have fair career development opportunities (Yes) were significantly more likely to be retained in their jobs compared to those who did not perceive fairness in career development (No). The chi-square value is 52.3225, with a very low p-value of 0.00, indicating a highly significant association. Innovation and Creativity: Employees who had opportunities for innovation and creativity (Yes) also showed a significantly higher job retention rate compared to those without such opportunities (No). The chi-square value is 44.0178, with a p-value of 0.016, indicating a significant association at the 0.05 level. Overall, the analysis reveals strong associations between various career development programs (opportunity for education, autonomy in career path, fair career development opportunities, and innovation/creativity opportunities) and job retention within the Ministry of Works. These findings suggest that investing in these career development aspects can significantly influence job retention rates among employees. Base on equity theory, employees tend to be more likely to feel involved and content with the organisation if they believe there is a greater degree of equity, supported by organisation’s investment in their career growth. Due to this perceived equity may result into improved job retention, since workers are less likely to leave the organisation in quest of better career opportunities elsewhere.

The results are consistent with research on the relationship between career development and employee retention in the hospitality industry conducted by Wilkins and Kamau (2014). According to Wilkins & Kamau (2014), organisations that offer well-structured career development programs that include training opportunities, mentorship programs, and employee rotations in career opportunities have been able to increase employee intent to stay with the

Organisation longer than those that do not provide such opportunities. It was also entrenched by Patel & Rana (2021), who discovered that workers were more inclined to stick with their organisations if they had access to options for professional growth, such as coaching,

job shadowing, and training. The study emphasized the importance of aligning career development programs with the organization's strategic goals and employee needs.

Table 4: Association between Career Development programs on Job retention in the Ministry of Works.

Variable	Low performance	High performance	Chi-square	P-Value
Opportunity for education			55.0225	0.007
No	15(26.79)	41(73.21)		
Yes	17(17.71)	79(82.29)		
Autonomy in career path			42.0832	0.00
No	23(23.21)	33(76.97)		
Yes	29(19.79)	67(80.21)		
Fair career development opportunity			52.3225	0.00
No	13(23.21)	43(51.43)		
Yes	19(19.79)	77(80.21)		
Innovation and creativity				
No	7(14.58)	41(85.42)	44.0178	0.016
Yes	25(24.04)	79(75.96)		

Source: Field data (2024).

The effect of career development programs on the employee retention within the Ministry of Works.

Diagnostics for the Logistic Regression

The effect of career development programs on employee retention was assessed using binary logistic regression model. Different test statistic was deployed to assess the accuracy of the Binary logistic regression model as it shown below.

Omnibus tests of model coefficients

The model goodness of fit was tested using Omnibus tests of model coefficients. The chi-square value for the logistic regression model assessing the impact of career development programs on job retention is 12.0036, with 4 degrees of freedom. The significance level (p-value) associated with this model is 0.002, which is below the 0.05 threshold, indicating a statistically significant relationship between career development programs and job retention. This suggests that investing in career development programs can influence job retention rates within the organization.

Table 5: Omnibus tests of model coefficients

Step	Chi square	df	Sig
1	12.0036	4	0.002

Hosmer and Lemeshow model test

The Hosmer-Lemeshow goodness-of-fit test in Table 10 suggests that the logistic regression model fits the data well. According to Archer, Hosmer, & Lemeshow, (2007), a good fitting model has to have a value greater than 0.05. The test of Career Development programs effects on Job retention reveals a chi-square statistic of 2.1651 with 8 degrees of freedom (df) yields a significance level of 0.124, which is greater than 0.05. This indicates that the model fits the data well for this category. It entails that the logistic regression model adequately describes the relationship between the predictors and the dependent variable.

Table 6: Hosmer and Lemeshow model test

Step	Chi square	df	Sig
1	2.1651	8	0.124

Findings on the effect of Career Development programs on Job retention at the MOW

The assessment of the influence of Career Development programs variables on job retention at the Ministry of Works was done by using multiple logistic regression analysis at a 0.05 level of significance. The results depict that there is statistical significance relationship of all the variables with employee retention. "Opportunity for education," employees who have opportunities for education have a coefficient of 1.884, indicating that they are 3.547 times more likely to have high retention compared to employees who do not have such opportunities. This result is statistically significant, with a z-value of 12.44 and a p-value of 0.016, suggesting a strong association between education opportunities and job retention. Regarding "Autonomy in career path," employees with autonomy in their career paths have a coefficient of 0.2122 and an odds ratio of 1.1783, indicating a moderate effect on retention. The p-value of 0.106 suggests that this relationship is statistically significant at the 0.05 level. For "Fair career development opportunity," the coefficient is 1.2122, with an odds ratio of 1.996, indicating that employees with fair career development opportunities are significantly more likely to have high retention rate ($z = 13.83$, $p = 0.001$). Additionally, "Involvement in Innovation and creativity" exhibit a strong positive impact on job retention, with a coefficient of 1.5216 and an odds ratio of 2.01. Employees involved in innovation and creativity are significantly more likely to have high retention ($z = 18.54$, $p = 0.000$). The constant term in the model represents the baseline odds of low retention when all other variables are held constant. The model's goodness of fit is supported by the LR Chi2 value of 138.4 and a significant Prob > Chi2 value of 0.000, indicating that the model is statistically significant. The Pseudo R2 value of 0.53 suggests a moderate-to-high level of explanation provided by the model regarding the variation in employee retention. In summary, Career Development programs such as education opportunities, fair career development, autonomy in career path and involvement in innovation and creativity significantly impact job retention in the Ministry of Works.

Table7: Multiple Logistic Regression Analysis

Employee retention	Coef.	Odds Ratio	z	P> z
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Low (base outcome)				
Opportunity for education				
Yes	1.884	3.547	12.44	0.016
No (Reference)				
Autonomy in career path				
Yes	0.2122	1.1783	2.87	0.106
No (Reference)				
Fair career development opportunity				
Yes	1.2122	1.996	13.83	0.001
No (Reference)				
Innovation and Creativity				
Yes	1.5216	2.01	18.54	0.00
No (Reference)				
Constant	-1.1131	.06815	0.223	0.000
Number of observations = 152 LR Chi2(4) = 138.4				
Prob > Chi2 = 0.000 Pseudo R2 = 0.53				

Source: Authors compilation from STATA 17

Furthermore, the results were complemented by the interview discussion with identified key informants, that as employees perceives to have an opportunity for further studies, they tend to be more satisfied with their job and increase their intent to stay longer. When employees believe that, they will have freedom to choose their career path and the opportunities are given in a fair bases increases their desire to stay with the Organisation. This ideology indicated that career development programs influence job retention as presented by the quote from one informant below;

“The Ministry believes in developing career of its employees. Despite the importance of which in implementing their duties it also helps them to grow and be satisfied with their jobs. It is described in our training program that every employee should attend at least one course every year to sharpen their capacity. We normally encourage and facilitate employees to engage into different long and short-term training to develop their career. Employees also have the freedom to engage into coursed of their choice as long as it aligns with their responsibilities. For stance in 2023/2024 financial year, we have facilitated 3 employees to attend long course programmes and 7 short course programs. These efforts have made our employees more comfortable with work, increase their work morale and their willingness to continue saving the Ministry of work”. (interview conducted on 20 March 2024 at Ministry of Works, in Dodoma).

These findings suggest that investing in career development aspects and fostering a culture of innovation can significantly contribute to a stable and motivated workforce. The research reliably shows that well designed and implemented career development programs have a substantial progressive influence on improving job retention rates. Overall, the analysis reveals positive correlation between various career development programs (opportunity for education, autonomy in career path, fair career development opportunities and innovation/creativity

opportunities) with job retention within the Ministry of Works. The results are in same comparison with Mule, Rintari, & Moguche, (2020), whose study replicates that career development has a positive and significant relationship with employee retention. According to Mule, Rintari, & Moguche, (2020), employees tend to remain loyal and committed in the organisation once they anticipate to be given opportunity to engage in education/training, anticipate fair opportunity to develop their career and independence in career path. Another study by Phyu et al., (2023) found employees had an opportunity to engage into structured career development programs had much greater employment retention rates than those who did not get that opportunities.

Conclusion

In terms of career development, the study reveals positive correlation between various career development programs (opportunity for education, autonomy in career path, and fair career development opportunities) with job retention within the Ministry of Works. Based on the individual attributes of career development, starting with "Opportunity for education," the study illustrates that employees who have opportunities for trainings/education have a coefficient of 1.884, indicating that they are 3.547 times more likely to have high retention compared to employees who do not have such opportunities. The result is statistically significant with z- value of 12.44 and a p-value of 0.016, suggesting a strong association between education opportunities and job retention. Further, employees with autonomy in choosing their career path has coefficient of 0.2122 and an odds ratio of 1.1783, indicating a reasonable effect on retention. The results are statistically significant at the 0.05 level with p-value of 0.106. the study also indicates that employees with fair career development opportunities are significantly more likely to have high retention rate ($z = 13.83$, $p = 0.001$). Additionally, "Involvement in Innovation and creativity" exhibit a strong positive impact on job retention, with a coefficient of 1.5216 and an odds ratio of 2.01 and statistically significant with z-value 18.54 and p-value 0.00. Thus, it is statistically significant to conclude that providing employees with various career development opportunities help to enhance job retention.

This result is supported by various other literatures (Mahadi, et al. 2020; Richard & Dennis, 2017; Al-sharafi, et al. 2018; Msisiri, 2018; Mule, et al. 2020). These findings are also consistent with several management theories, including the expectancy and social exchange theories and equity theory. The study further advocates that, if employees perceive to get an opportunity for their career advancement, they will have more intent to stay with the Ministry. The results provide valuable insights on the design and implementation of career development programs. The findings suggest that for the Ministry to retain its valuable employee has to consider investing more in career development programs which includes opportunity for further trainings/education, fair career development opportunities among its employees and autonomy for employee to choose their career path. In summary the findings shed light on the relationship between career development programs on job retention.

The study has a significant implication for the government and policy makers in Tanzania. It highlights the need for prioritizing the development of effective career development programs. By investing in these areas, policy makers can enhance employee motivation, commitment, and retention, leading to improved service delivery and organizational effectiveness. While this study on the effect of career development on employee retention in the Ministry of Works in Tanzania offers valuable insights, it is important to acknowledge its limitations. The focus on one ministry restricts the generalizability of the findings to other sectors or organizations. Additionally, relying on self-reported data may have introduced biases and subjective interpretations.

Area for Further Studies

Based on the review made, much scope remains for more exploration in the field of employee retention by taking into consideration additional factors that may interact with employee retention like compensation practices, leadership and supervision, career planning and development, alternative work schedule, working conditions, and flexible working hours. Understanding how these other factors influence the employee's retention can provide valuable insights for improving retention strategies in the Ministry of Works in Tanzania public sector. For generalisation purposes further studies can be conducted to other Ministries organisation to extend these findings. Furthermore, a comparative analysis study can also be done to determine the relative effectiveness of different human resource practices (e.g., career development programs vs. recognition programs) in improving retention would help organizations prioritize their interventions.

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The Influence of Technological Proficiency Among Head of School on Effective Management of School Fund. A Case of Secondary School in Dodoma city Council and Chamwino District

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Abstract

This study examines the role of technological proficiency among school accounting officers in managing school funds a case of Dodoma Region, with a specific focus on familiarization with financial software tools, generating financial reports, and integrating systems such as the Financial Facility and Accounting Report System (FFARS). The study applied management competence theory (MCT) to understand the role of technological proficiency among school accounting officers in managing school funds. The study used cross sectional research design while simple random and purposive sampling techniques were used to select members of sample size with 104 respondents from the population of 2 respondents from all 68 secondary schools found in both districts and 3 staffs from each local government authority. A quantitative approach was employed to assess the relationship between technological skills and effective financial management in schools. The findings revealed that accounting officers who are proficient with financial software and system integration demonstrate significantly better financial management practices compared to those who lack such skills. Familiarity with financial software tools, the ability to generate accurate financial reports, and system integration are positively associated with efficient management of school funds. These insights suggest that improving technological proficiency among accounting officers could significantly enhance financial accountability and transparency in schools. The study recommends continuous training and support in the use of financial systems to improve the overall management of school funds. Further research should focus on exploring the impact of these technological tools in different regions and their long-term effects on financial outcomes in educational institutions.

Keywords: *Technological proficiency, financial management, school accounting officers, financial software tools, financial reports, system integration, Financial Facility and Accounting Report System (FFARS) and Dodoma Region.*

1. Introduction

Technological proficiency in financial management has become a global concern, since use of modern technology especial at School level has shown positive impact in both administration and financial management. In Africa most of schools especially secondary schools uses modern financial systems to manage fund rather than use manual financial record keeping. The study by Wessel (2018) explored the critical information and communication technology (ICT) skills needed for professional accountants. The study identified that technology is a key driver in the rapidly evolving business environment, accountants required to interact with and understand these systems to perform their roles effectively. The study underscored the importance of ICT in financial management, suggesting that whether accountants serve as financial managers, evaluators, or consultants, technological proficiency is critical for ensuring accuracy and efficiency. School accountants, like professional accountants in other sectors, need to leverage technology to handle financial records and reports, ensuring proper fund management in schools.

Pasewark (2021) analyzed the future requirements of accounting professionals in light of technological advancements, particularly automation and cognitive processes. The study identified five major areas where business schools are struggling to meet the evolving needs of the profession, including enhancing technology usage. Findings revealed that offshoring and automation have significantly reduced the demand for traditional accounting roles. This study emphasizes the need for accounting professionals to develop new technological skills, aligning with the demand for advanced systems that automate financial processes. The relevance of this study to the current research lies in its focus on the evolving nature of accounting, which parallels the changing requirements of school accounting officers as school accountants must also adapt to these changes to manage school funds efficiently and remain efficient in their roles. The study by Dongo Dongo (2021) investigate on effectiveness of ICT integration on effective teaching and learning in public secondary schools found in Misungwi district. The study revealed that implementation of ICT has many effective on teaching and learning process and such as it enhances the accessibility of teaching and learning materials, improve teachers and student's knowledge and skills and makes lesson more effective, makes student-centered and self-directed, makes and creative good teaching and learning environment, and improve high thinking capacity for students and teachers. work of Mtuweta and Celina (2020) who studied about review financial management among public and private schools at Tambaza and Barbro Johansson Secondary School in Dar es Salaam Region. They found that the availability of fund differs between public and private schools. Public secondary schools were funded mostly by the government while the private secondary was funded by the parents or guardians. Likewise, there were slight differences on the accountability on fund usage among the selected schools, where the fund was mostly used for school's infrastructures, stationeries and for private paying for employees' salaries. There were a lot of contributions for both public and private secondary schools brought by the effective fund management. The study found that there was more seriousness, openness, decisions and creativity on fund management among the private schools compared to public secondary schools. Ruhago (2023) who assessed of the Facility Financial Accounting and Reporting System (FFARS) in Tanzania and found a

successful perform of FFARS among school facilities. FAFRS usage shows a positive impact as it simplifies a lot of work by showing how money utilization goes, shows what is remaining because when you send you see directly how the expenditure goes compared to your activities and that money is used according to the budget that you planned.

According to Wessel (2018) staying updated on digital trends and advancements is crucial for officers to maintain a competitive edge in managing school funds. Technology continues to evolve at a rapid pace, and those who fail to keep up may find themselves struggling to adapt. Through remaining digitally aware and continuously learning new skills, officers can stay informed about the latest tools and best practices for managing school finances effectively. Having a strong digital security awareness also helps officers mitigate potential risks associated with online transactions. School funds may be transferred electronically through various channels like electronic fund transfers (EFTs) and other online payment portals.

The study by Dingo Dingo (2021) recommended that ICT infrastructures such as computers and other ICT resources should be adequately provided, and secondary schools leaders should establish income generating projects to increase sources of funds and in-service training as well as special programs on ICT should be provided to teachers to boost their expertise and familiarity on the use of ICT and implications in teaching and learning.

This focus on technological skills is imperative as it can help streamline financial processes, enhance transparency, and improve overall accountability in fund management, ultimately fostering a more effective educational environment.

2. Reviewed related literature.

Wessel (2018) focused on critical information and communication technology (ICT) skills for professional accountants. Findings revealed that formation technology can be seen as one of the key drivers in a changing business environment as it is integrated into almost all aspects of business. Whether professional accountants function as financial managers within a specific organization, act as independent evaluators of an organization, financial information and systems, or act as consultants advising organizations, they will have to interact with and be knowledgeable about information technology to enable them to perform their jobs competently.

Pasewark (2021) focused on preparing accountants of the future: five ways business schools struggle to meet the needs of the profession. Findings indicated that in the past few years, the demand for accountants has decreased significantly. Much of the decrease can be explained by offshoring and use of robotic and automated cognitive processes. To prepare for changing needs of the financial community, several groups have identified professional competencies they believe will be needed by future accounting professionals. The intent of this commentary is to illustrate changes in the profession and emphasize how academic institutions might preemptively address those needs. The study discussed five ways business schools have struggled to meet the needs of the accounting profession. These include obstacles related to (1) developing competency-based curricula, (2) enhancing technology usage (3) formulating

reliable indicators of student performance, (4) offering convenient delivery of educational services, and (5) delivering economical tuition value.

3. Methodology

3.1 Research Design

This study used a cross-sectional design as it allows the observation and analysis of data at a single point in time. This design facilitated the simultaneous measurement of outcomes and exposures, providing a comprehensive understanding of the factors affecting the competence of school accounting officers in managing school funds.

3.2 Research Approach

The study utilized a mixed-methods approach, incorporating both qualitative and quantitative research methods. This combination allowed for the collection of numerical data that could be statistically analyzed (Bryman & Bell, 2015) while also providing in-depth insights into participants' experiences and perspectives. The quantitative aspect enabled objective measurements of relationships among variables, while the qualitative component enriched the findings through thematic analyses and interviews.

3.3 Study Area

The research was conducted in the Dodoma Region, specifically targeting Dodoma City Council and Chamwino District Council. These districts were selected based on their involvement in various development school projects and a CAG audit report that highlighted significant funding allocation and numerous unfinished projects (NAOT, 2021).

3.4 Population, sampling and sample size

The target population for this study comprised 142 respondents, including 68 secondary school personnel and staff members from local government authorities. This diverse population provided a comprehensive perspective on the management of school funds. 4.4 Using Krejci and Morgan's (1970) table, a sample size of 104 participants was determined, comprising 68 cashiers, 30 heads of schools, four ward education officers, and two district treasurers. The calculation ensured a comprehensive representation of the target population.

3.5 Data Collection Instruments

Data were collected through structured questionnaires distributed to school cashiers to gather quantitative information on financial skills and compliance with ethical standards. Additionally, interviews were conducted with heads of schools and local government officials to explore essential financial management competencies and the challenges faced.

3.6 Sampling Techniques

This study employed two sampling strategies: simple random sampling and purposive sampling. Simple random sampling was used to select the schools and their corresponding

cashiers, ensuring a representative sample, while purposive sampling was utilized for selecting heads of schools and local government officials, focusing on those with relevant expertise.

3.7 Validity and Reliability of the Data

Validity refers to the degree to which a measurement accurately reflects the variable it intends to measure (Cohen et al., 2014). To ensure content validity, experts in school financial management reviewed the data collection instruments, and a pilot study was conducted to establish construct validity through statistical techniques such as factor analysis.

3.8 Reliability of Data

Reliability pertains to the consistency and accuracy of the measurement tools (Alvi, 2016). Internal consistency was assessed using Cronbach's Alpha, with a threshold of 0.7 considered acceptable. A minimum acceptable value was established to ensure reliable measurements across the various variables.

Table 1 Reliability Statistics

Variables	Cronbach's Alpha
Familiarization with Financial Software	0.843
Generating Financial Reports	0.821
Integration with Other Systems	0.863

Source: Field Data, 2024

3.9 Data Analysis

Quantitative data were analyzed using descriptive and inferential statistics. Qualitative data from interviews were thematically categorized, allowing for the development of paraphrases and direct quotes from participants. Statistical techniques, including Chi-square tests and logistic regression, were employed to evaluate the associations and effects concerning the management of school funds.

4. Findings

4.1 Technological Proficiency among School Accounting Officers in Managing School Funds

This study examines the roles of technological proficiency among school accounting officers in managing school funds. In addressing this objective three variables of familiarization of financial software tools, generating financial report and integration with other system such as

FFARS were measured in respect to management of school funds as presented in the table below.

Table 1. Association between Technological Proficiency among school accounting officers in managing school funds

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Familiarization of Financial Software Tools (No)	110	1	5	2.36	1.51
Familiarization of Financial Software Tools (Yes)	62	1	5	4.34	1.17
Generating Financial Reports (No)	84	1	5	2.25	1.47
Generating Financial Reports (Yes)	45	1	5	4.22	1.01
Integration with Other Systems (No)	88	1	5	2.55	1.42
Integration with Other Systems (Yes)	51	1	5	4.33	1.05

Source: Field Data, 2024

This study examines the association between technological proficiency and the management of school funds among accounting officers, based on responses from 172 participants. The findings reveal a significant disparity in mean scores based on familiarity with financial software tools. Those not familiar with such tools reported a mean score of 2.36 (SD = 1.51), indicating a low level of proficiency. In contrast, participants who were familiar with financial software tools had a much higher mean score of 4.34 (SD = 1.17), suggesting that familiarity greatly enhances their ability to manage funds effectively. Similarly, the results for generating financial reports showed that respondents with no experience had a mean of 2.25 (SD = 1.47), while those with experience scored 4.22 (SD = 1.01). For integration with other systems, non-users reported a mean of 2.55 (SD = 1.42), compared to a mean of 4.33 (SD = 1.05) for users. These findings indicate that technological proficiency plays a crucial role in effective fund management among school accounting officers, highlighting the need for targeted training programs to improve familiarity with financial tools and systems.

5. Discussions

The findings of this study underscore the critical role that technological proficiency plays in the effective management of school funds by accounting officers. The significant difference in mean scores between those familiar with financial software tools and those who are not highlights a clear link between technology use and improved financial management practices.

Research by Osei and Asante (2021) supports this, indicating that familiarity with financial management software significantly enhances financial decision-making and accountability among school administrators. Participants who are proficient in utilizing financial software demonstrated a much higher capacity for managing school funds, as reflected in their mean scores. This suggests that familiarity with such tools enhances their ability to perform essential functions such as budgeting, resource allocation, and generating accurate financial reports.

Furthermore, the stark contrast in mean scores between participants who generate financial reports and those who do not reinforces the importance of training in this area. The ability to produce timely and accurate financial reports is fundamental to sound financial management and decision-making. According to Karanja and Karanja (2020), effective financial reporting practices are crucial for ensuring transparency and accountability in educational institutions, and the lack of such proficiency can lead to significant oversight. The lower mean scores observed among those lacking this proficiency indicate potential gaps in the training and support provided to accounting officers.

Additionally, the results pertaining to integration with other systems reveal that a lack of familiarity with interconnected financial systems may hinder the overall efficiency of fund management. Research by Mwenda (2022) emphasizes that integrated financial systems can improve the accuracy of financial data and enhance decision-making processes. As schools increasingly rely on these systems, accounting officers must be equipped with the skills necessary to navigate them effectively.

These findings suggest that enhancing technological proficiency should be a priority for educational institutions. Training programs should focus on increasing familiarity with financial software tools, report generation, and system integration to ensure that school accounting officers are adequately prepared to manage funds efficiently. By investing in continuous professional development and targeted training, educational authorities can strengthen the financial management capacity of their staff, ultimately leading to better outcomes in the administration of school funds. Literature supports that ongoing professional development can lead to enhanced skills and improved job performance (Adu & Badu, 2023), making it imperative for educational institutions to prioritize training initiatives.

6.0 Conclusion and Recommendations

The study has underscored the significant role of technological proficiency among school accounting officers in effectively managing school funds. The findings reveal that familiarity with financial software tools, the ability to generate accurate financial reports, and integration with other financial systems significantly enhance fund management practices. Officers proficient in these areas demonstrate a greater capacity for financial decision-making, contributing to improved accountability and transparency in school finances. Conversely, those lacking proficiency face challenges that may hinder effective fund management, indicating critical gaps in training and support.

To enhance the management of school funds, educational authorities should prioritize comprehensive training programs focused on developing technological proficiency among accounting officers. This includes providing hands-on training in financial software tools and report generation, as well as promoting the integration of financial systems for streamlined operations. Additionally, ongoing professional development initiatives should be implemented to ensure staff remain up-to-date with emerging technologies and best practices in financial management. By fostering an environment of continuous learning and technological adaptation, educational institutions can significantly improve the financial management capacity of their staff, leading to more efficient and effective utilization of school funds.

7.0 Areas for Further Studies

Future research could explore several critical areas to deepen the understanding of technological proficiency and financial management in educational settings. A comparative study examining the differences in fund management practices between schools with varying levels of technological proficiency could provide valuable insights into best practices and areas for improvement. Additionally, investigating the long-term impact of training programs on the financial management practices of school accounting officers could help assess the effectiveness of different training modalities, using longitudinal studies to track changes over time and their correlation with improved financial outcomes.

8.0 Limitation

This study acknowledges several limitations that may impact the interpretation of the findings. First, the research was conducted in a specific geographical area, which may limit the generalizability of the results to other regions with different socioeconomic and educational contexts. Additionally, the reliance on self-reported data from participants could introduce response bias, as individuals may overstate their familiarity with financial software tools or their proficiency in generating financial reports. Furthermore, the study focused primarily on the technological proficiency of school accounting officers, potentially overlooking other critical factors influencing the management of school funds, such as organizational culture, leadership support, and financial policies. The sample size, while adequate for the analysis, may not fully capture the diversity of experiences and perspectives among all accounting officers in the education sector.

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10.0 Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this study. All data collection, analysis, and interpretation were conducted impartially, and no external funding or influence affected the outcomes of the research. The findings and conclusions are solely the result of the authors' independent investigation and academic rigor.

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The Influence of Technology on the Adoption of E-Procurement in Public Sectors in Tanzania. A Case of Medical Stores Department (MSD), Dar Es Salaam Region

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Abstract

The main purpose of the paper was to examine influence of technology on the adoption of e-procurement in public sectors in Tanzania: a case of medical stores department (MSD), Dar es salaam region. The study employed descriptive research design since it aims to describe a population, situation or phenomenon accurately and systematically and used a wide variety of quantitative and qualitative method to investigate one or more variables. The population for this study is 129 staff in Medical Stores Department (MSD), Dar es salaam Region responsible for executing the procurement process and contract management (HR, 2024). The staff were selected from the procurement management unit and user departments where 97 staff sample size was selected through the use simple random sampling. Questionnaire and interview were used as tools for collecting data and analyzed by using descriptive frequency distribution analysis and liner regression with the help of Statistical Package for Social Sciences (SPSS) version 21. The study found that technological know-how amongst the employees play a significant and positive effect in the adoption of e procurement at medical store department. This was shown by the P value of <.001 which was way below an alpha value of 0.05. The results suggest that there is a positive and substantial correlation between technology and adoption e-procurement. The study concluded that, technology has positive and significant influence towards the adoption of the e procurement. The study recommended that there is need to increase capacity building and training to improve the technological know-how amongst employees.

Key words: *Technology, E-Procurements, Public Sector, MSD.*

Introduction

E-procurement is a powerful business tool that can revolutionize the buying function of an organization by streamlining and automating the labor-intensive, procurement routines which in return enable employees to gain direct access to their suppliers' systems, visually confirm technical specifications and view product pictures, price points, and detailed product descriptions (Rehan and Omwenga 2017). E -procurement methods have assisted firms in enhancing the efficiency of their procurement processes (Abutale, 2020). In developed nations, several studies have investigated the implementation of e-procurement and have identified staff competency, technological and financial factor as the key determinants of success in electronic procurement implementation (Asare and Prempeh, 2021; Abutale, 2020).

In contrast to the progress made by most of the developed nations in adoption and use of e – procurement, the situation in developing countries such as Tanzania is characterized by a lack of knowledge about the key variables for successful implementation of e-procurement. While technology solutions such as e-procurement systems and supply chain management software, have been developed to streamline procurement and supply chain processes in other countries, their adoption in Tanzania has been slow, with many public sector organizations still relying on manual and paper-based processes (Kuria, Muhoro, & Ngari, 2021). This slow adoption is due to, employee technological competencies to support the system implementation and maintenance. These technological inadequacies as noted by Otieno and Obondi (2018) has contributed to the inefficiencies, including delays, high costs, and corruption characteristic.

Despite of the PEs to adopt e-procurement the level of adoption and successfulness differs among PEs. This is evidenced by the PPRA, 2023 report indicates that 39.8% of the public procuring entities had no adequate procurement staff with enough technological skills to drive the procurement functions professionally in the regions. This was confirmed by Ringa (2019) who established that majority of public procurement staff have limited technological knowledge, incompetencies and unexperienced to undertake procurement professionally to effectively implement roles on e-procurement procedures as required by the Act and this has dealt a major setback on service delivery. The PPRA Annual Report 2022/2023 revealed an average score for all the regions executives was 41.60% which is considered non-compliance of Procurement system and a high-risk level of 59.0% while other institutions like Medical Store Department (MSD), Tanzania Revenue authority (TRA), Public Procurement Regulatory Authority (PPRA), Tanzania Breweries Limited (TBL) and other institutions were above average.

Prior researches (Kuria, Muhoro, & Ngari, 2021) has mostly focused on identifying the elements that contribute to the adoption of e-procurement in private organizations, as well as the factors that hinder its acceptance. These studies have examined the determinants and influences of e-procurement adoption (Ringa (2019); Ngari, (2021); Siwandeti, 2019). Therefore, the information on success factors in adoption of e-procurement is not well known. Hence there is a need to explore the influence of employee technological competencies in the e system and financial roles to streamline E-procurement and supply chain processes in the public sector in Tanzania.

Literature

Definition of Key terms

i. Procurement

Procurement is referred to as acquisition of goods, services, capabilities and knowledge required by businesses, from the right source, the right quality, in the right quantity, at the right price and at the right time to maintain and manage a company's primary and support activities (Keane and Feinbag, 2016). According to Magina (2014) procurement is a process of identifying and obtaining goods and services. It includes sourcing, purchasing and covers all activities from identifying potential suppliers to delivery to the beneficiary. In this study, procurement entails all the procedures undertaking during the obtainment of goods, services and works from recognized sources such as suppliers, contractors and manufacturers.

ii. Public Procurement

Public procurement refers to the purchase by governments and state-owned enterprises of goods, services and works (OECD, 2019). Public procurement also refers to the process by which public authorities, such as government departments or local authorities, purchase works, goods or services from companies (European Commission, 2019). In this study, public procurement is considered as all the undertaking of acquisition functions by using public funds in alignment with public procurement act.

iii. Electronic Procurement

Electronic procurement, often known as e-procurement, is the automation of procurement and supply chain activities utilizing internet-based applications and technologies, according to (Oxford College of Procurement and Supply, 2014). It enables procurement specialists to share information quickly and easily, optimizing the procurement process and saving time and money without sacrificing quality (Mathias 2020).

Electronic procurement (e-procurement) is the use of electronic communication to complete business transactions between sellers and buyers (Rodriguez *et al.*, 2014). It is a useful instrument in the business world for easing the purchase of goods through the internet (Barua *et al.*, 2001). The major activities of e-procurement are: Supplier selection, product definition, negotiation, and payment are all examples of purchasing operations (Lancioni *et al.*, 2003).

iv. ICT Infrastructure

The term ICT refers to a group of hardware and software technologies that work together. Hardware components are critical for knowledge management systems because they provide as a platform for software and knowledge transfer. Technological resources have been consistently identified as an important factor for successful information systems implementation (Asare and Prempeh, 2021).

v. Staff Competence.

Employee competence refer to human ability in using ICT plays a vital role in the implementation of e-procurement in public procuring entities. Employees must understand how to use ICT and how it will change the way they do business. This obstacle is more

prominent for advanced ICT such as e-commerce and procurement (Asare and Prempeh, 2021). Employee competence is a very important aspect of every organization in virtually every field. Organizations need to have competent and skilled workers in order to use their resources optimally. This is critically important to IT resources that are largely required in an e-procurement environment (Abutale, 2020).

vi. Technology

Technology is the use of conceptual knowledge to accomplish practical objectives, particularly in a repeatable manner. The term "technology" can also refer to the end results of these endeavours, encompassing both material instruments like machinery or utensils and immaterial ones like software (Abutale, 2020). Technology is of great importance as far as e procurement is concern, since the system requires an interplay of electronic links to properly function.

vii. Financial ability

Financial ability is the capacity to satisfy current expenses, such as debt payments and solid reserves, out of current income, both accruing and cash, without encroaching on or depleting capital (Alphonse, 2020). The concept of financial ability is important in the study since it matters in capacity building process, purchases and installments of the system but also it is required in the keep and maintenance of the facilities.

Institutional Theory

Institutional theory was created to examine the processes and mechanisms used by authorities since the 1930s. These mechanisms and processes are structured from established rules and procedures to guide social behaviors. It suggests that companies are socially responsible in terms of legitimacy as a means of reducing environmental impact due to public awareness of organizational failure and environmental needs (Bansal and Cleland, 2004). The increased pressure of institutional theory has led individual organizations to do better by adopting e-procurement systems that can scale transactions to overcome barriers. In doing so, they develop good relationships with practitioners through voluntary participation in various government programs.

They established agreements between government agencies and businesses to support technological innovation and eliminate pollution (Delmas and Toffel, 2008). Nelson and Winter (2002), describe Institutional Theory as a tool that brings the idea of enterprise information exchange to improve services to customers and suppliers in different environments.

Information technology theories are used to predict their impact on organizational performance improvements. Implementing any system requires an effective system framework inside and outside the organization. In order to ensure the effective implementation of, institutional efforts such as financial, human and material resources are necessary (Alphonse, 2020).

Institutional theory helps organizations develop legal frameworks, utilize scarce resources, coordinate available resources, improve organizational structures, and manage all risks by establishing a manager-level risk framework in order to effectively implement various internal and external policies and guidelines. policies and guidelines (Delmas and Toffel, 2008).

Therefore, the implementation of e-procurement requires various resources and efforts, such as finance, staff capacity, ICT tools, coordination, stakeholder engagement and awareness, as well as involvement and support. from senior management (Alphonse, 2020).

Institutional theory is therefore relevant to this study because it will ensure the effective implementation of E-procurement, organizations and other stakeholders need knowledge and skills, i.e., staff competence, ICT tools, i.e. organizations must ensure that ICT tools are made available for the implementation of the same. In addition, institutional theory would enable the organization to develop good institutional policies, regulations and procedures and ensure that staff are competent to effectively implement E-procurement in Tanzania.

Methodology

This study employed a positivism pragmatism paradigm and a mixed approach and adopted a case descriptive research design. The researcher obtained a study sample through Probability sampling addresses and Non-Probability Sampling. The sampling process resulted in the collection of respondents from various unit and sections within procurement department. The study was conducted at Medical Stores Departments (MSD), Dar es salaam Region due to the fact that it has the roles and responsibility to carry out e-procurement activities.

Data collection processes were done using questionnaires and interviews; the primary data collection entailed getting information straight from the participants. Conversely, Questionnaires served as the primary data gathering tool, providing quantitative insights into employees' perceptions of technological influence on adoption of e - procurement. While closed-ended questions provide background information, open-ended questions permit further in-depth research. Questionnaires have the advantage of being economical, impartial, and giving respondents enough time to respond. The questionnaire utilized a five-score Likert scale, identifying the extremes of strongly disagree and strongly agree. Interviews were done with key informants who were the heads of unit and section from and of procurement department, the interview was used in collection of qualitative data. This method was important for the researcher because it allowed for the acquisition of multiple data points. An interview assists a researcher in gathering data and formulates a detailed conclusion. Then, for the interview, a researcher used an interview guide as a tool. Data analysis involved, looking over, classifying, adding up, or reorganizing the information gathered for a study to answer the original research question. In this work, the researcher analyzed data gathered from a statistical population on internal control systems. Preparing, organizing, and reporting are the components of data analysis, as stated in Eloet al. (2014). To ascertain response frequencies and perform percentage-based comparisons, the gathered were subjected to analysis utilising SPSS Version 21.0 and descriptive statistics. Measures like percentage, frequency, and mean were used in descriptive statistical analysis on the information gathered from the surveys.

The mean score for every item was translated into a degree of factors as displayed in table 1:

Table 1: Likert Scale Point

Scale	Average score (Mean)	Rating
Strong disagree	1.00 – 1.80	Very low
Disagree	1.81 – 2.60	Low
Neutral	2.61 - 3.40	Average
Agree	3.41- 4.20	High
Strong agree	4.21 -5.00	Very high

To determine the relationship between the dependent and independent variables, the method used was linear regression.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon \quad (1)$$

Where:

Y = Adoption of E- procurement

β_0 = Constant coefficient

X_1 = Infrastructure

X_2 = Software

X_3 = Power supply

Qualitative data was collected from the Head of procurement department, unit and section to provide experienced and detailed information; To analyses qualitative data, content analysis was employed by focusing on systematically categorizing and interpreting textual data.

Findings and discussion

The collected data indicated the following results (see the results in Table 2).

Table 2: Coefficients

Coefficients					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	-.082	.176		.641
	TC	.599	.061	.650	<.001

a. Dependent Variable: AEP

Source: Field Data (2024).

The Influence of Technology on the Adoption of E-Procurement in Public Sectors in Tanzania.

Furthermore, the results show that, technological know-how on the use of e-procurement system amongst employees had a positive and strong significant influence the dependent variable. This is shown by the P-value test which stood at 0.001 while its coefficient value stood at 0.599. This means that, technological know-how on the use of e-procurement system have a significant influence in adoption of the e – procurement process in medical store department.

Technology, in this study, is measured by availability of infrastructure, soft ware and power supply availability. The study results indicates that, technology has significant influence to adoption of e procurement. The study implied that; IT factor was of importance as far as adoption of the E procurement was concern. From the findings coefficient values, it implies that, in a every unit increase in the technology aspect such as infrastructure improvement, software development and improvement of power supply would have 0.599 significant impact on the adoption of the e-procurement at medical store department.

In an interview conducted to complement the findings above involved the third HOD; She was asked to respond to the interview question; “...*Can you explain how the ICT infrastructures installed at MSD has influenced the adoption of E-procurement...?*” her responses were as follows; “...*there are enough computers for all employees more particularly in the procurement department this has made it easy in the installation of the software related to e procurement....*” (HOD III;02/05/24).

Furthermore, the researcher was interested in finding out how reliable is the system given the frequent power rationing. The researcher asked; “.... *How did MSD ensured the constant power supply in the face of adopting the E procurement technology in the midst of the unstable power supply state of the country...*”, the head of department had this to say;

“.....*Heeee, don't you even think of installing the applications, softwares and all these PC's with this unstable power source of ours, the organization was keen on that, as a resulted it invested on a heavy duty and standby generator, with a modern sensor which detect the flickering of light before it turns its self on.*”,

He went on saying; “.....*surely the generator has done massive contribution, the PC can run through out working hours, and with no malfunctioning, hence technology is good yes, but there must be a constant power source backing the system up*”. The responses show that, medical store department have embraced technology even before the introduction of e-procurement. This acted on their favor such that, it was easy for them to adopt to the new technology since it only need installment of the software to the already installed laptops.

Discussion of the findings

This study results signifies that, e – procurement needs constant supply of electricity and thus the company is ought to have a back plan in case of electricity shortage. It also implies that, unless the company have well established infrastructure it would not be able to establish the e-procurement. showed that e-procurement paves the way for greater speed in purchasing products and services while reducing expenditure because of the choices and completions which increase. It is an obvious fact that before adopting and implementing any new technologies, putting into practice any initiatives, or making any new changes, organizations figure out reasons for using and implementing initiatives or changes. When it comes to adopting e-procurement systems or electronic solutions, first of all, companies considered the requirements of the company and reasons for adopting e-procurement.

The result above is supported by the findings of Hardy & Williams (2019) who argued that, technological factors like information transparency, creativity and innovation, data quality and management, system integration, data security; computer and IT literacy were significant at p-value. Furthermore, the study is in with the study of Heeks (2017) who study found

technological factors like information transparency, creativity and innovation, data quality and management, system integration, data security; computer and IT literacy were significant at p-value. Another study supporting the above study is a study by Hunja (2020) who found out that, technological infrastructures are significant factors for explaining the adoption of e-procurement in the Netch region.

Conclusion and Recommendations

Based on the study's findings, the study results showed that, there is a strong and significant effect between technological know-how amongst employee and Adoption of E-Procurement in Public Sectors in Tanzania. Thus, changing of a unit in technological know-how amongst employees would positively affect competence amongst adoption of E-Procurement in Public Sectors in Tanzania. It is also concluded that, technological know-how amongst employees is not only best for the effective adoption but it ensures sustainable adoption of e – procurement system. From the significance levels of the study, it would be concluded that technological strengths of the system would have a strong effect towards the adoption process. The public organizations and in this case medical store department should therefore train staff on the use of e-procurement tools in order to enhance the implementation of e-procurement. It is furthermore recommended that; the institutions should also employ qualified staff and avail them with electronic procurement manual to guide on e-procurement processes and assist in the implementation of e procurement. Given the importance of the e procurement and change of science and technology, given the fact that e – procurement is inevitable and unavoidable, the government and the public organizations ought to increase in the budget not only for instalment but for maintenance and sustainability. The study recommends that, there is a need however, for the future study to be conducted on the descriptive analysis to establish the reasons as to why not all the government organization have adopted to the e procurement system. Another study can be conducted to examine the reasons (challenges) as to why other organization hesitate or have not adopted the e – procurement this is regardless of its massive benefits laid out.

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Examining the Effect of Off – Job Training on Organization Performance at the Ministry of Finance in Tanzania

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Abstract

This study aimed to examine the effect of off-job training on organizational performance at the Ministry of Finance in Tanzania. Utilizing a convergent parallel design, the research employed both quantitative and qualitative methods to provide a comprehensive understanding of the training's impact. The study's sample comprised 86 ordinary employees and 10 management personnel, chosen using simple random sampling and purposive sampling, respectively. Data collection involved structured questionnaires and in-depth interviews. The quantitative data from the questionnaires were analyzed using descriptive statistics, while qualitative data from interviews were subjected to content analysis. The results revealed that off-job training is highly regarded by employees, with the highest mean scores for alignment with role needs ($M = 4.1512$), career growth contribution ($M = 4.3488$), and justification of resources ($M = 4.3372$). Skills enhancement ($M = 4.2907$) and application of knowledge ($M = 3.8140$) also received favorable evaluations. The overall mean score of 4.1886 indicates a positive perception of the training programs. Qualitative insights further supported these findings, highlighting improved employee performance and increased motivation, creativity, and problem-solving abilities following off-job training. These results suggest that off-job training significantly enhances organizational performance by aligning training with role needs, supporting career development, and justifying resource allocation. To further improve effectiveness, it is recommended to integrate practical applications of learned skills into the training programs. This adjustment could enhance the transfer of knowledge to everyday work practices, maximizing the benefits of off-job training for both employees and the organization.

Keywords: *off – job training, organization performance, Ministry of Finance*

1. Introduction

In today's fast-paced and highly competitive work environment, organizations strive to enhance their performance by adopting various strategies that foster employee development and improve overall productivity. One of the most prevalent approaches in this regard is training (Jehanzeb & Bashir, 2021; Aguinis & Kraiger, 2023). Training, particularly off-job training, plays a significant role in equipping employees with the necessary skills, knowledge, and competencies to perform their duties efficiently. Off-job training refers to the training that takes place outside the actual work environment and is usually conducted in specialized training centers or educational institutions (Aguinis & Kraiger, 2023). This form of training allows employees to acquire new skills, enhance their existing abilities, and broaden their knowledge base without the distractions of their daily work responsibilities (Aguinis & Kraiger, 2023; Ahmad & Schroeder, 2021). Recent studies have indicated that organizations investing in off-job training for their employees tend to report higher levels of organizational performance, including increased productivity, improved quality of service, and enhanced employee satisfaction (Khan et al., 2023; Jehanzeb & Bashir, 2021; Makki et al., 2020).

In the context of the public sector, especially in government ministries like the Ministry of Finance in Tanzania, the importance of training cannot be overemphasized. Government ministries are responsible for the formulation and implementation of policies that have far-reaching impacts on the nation's socio-economic development (Noe & Kodwani, 2022). Therefore, the performance of employees in these ministries directly influences the quality of services delivered to the public. Studies have shown that well-designed training programs significantly enhance public sector effectiveness by fostering a competent workforce capable of delivering high-quality services (Mutua et al., 2021; Makki et al., 2020). However, the public sector often faces unique challenges, including limited resources, bureaucratic hurdles, and resistance to change, which can hinder the effective implementation of training programs (Khan et al., 2023). Off-job training, when effectively executed, offers a solution by providing employees with the opportunity to learn and develop new skills in a structured and supportive environment, away from the constraints of their regular work settings (Aguinis & Kraiger, 2023; Ahmad & Schroeder, 2021).

Despite the recognized benefits of off-job training, there has been a growing concern regarding its impact on organizational performance within government sectors in developing countries, including Tanzania. Research has shown that many public sector organizations in these regions often fail to realize the full potential of off-job training programs due to several factors. These include inadequate funding, lack of proper training infrastructure, insufficient planning, and evaluation of training programs, as well as a general lack of commitment from both employees and management (Khan et al., 2023; Mutua et al., 2021; Makki et al., 2020). Consequently, the intended objectives of off-job training, such as skill enhancement, knowledge acquisition, and improved performance, are often not fully achieved, leading to a gap between training initiatives and actual performance outcomes (Jehanzeb & Bashir, 2021; Noe & Kodwani, 2022).

The Ministry of Finance in Tanzania plays a critical role in managing the country's fiscal policies, budget planning, and financial regulations. The effectiveness and efficiency of its operations are crucial for the economic stability and development of the nation (Mutua et al., 2021; Ahmad & Schroeder, 2021). However, the ministry has been facing challenges related to employee performance, which have been attributed to a lack of adequate training and development programs (Khan et al., 2023; Makki et al., 2020). Studies have highlighted that employees in the Ministry of Finance often lack the necessary skills and competencies required to handle complex financial tasks, leading to inefficiencies and delays in service delivery (Aguinis & Kraiger, 2023; Ahmad & Schroeder, 2021). This situation underscores the need for comprehensive off-job training programs that can equip employees with the requisite skills to enhance their performance and, by extension, the overall performance of the ministry (Noe & Kodwani, 2022).

Moreover, the public sector in Tanzania has been undergoing significant reforms aimed at improving service delivery, transparency, and accountability. These reforms have placed increased pressure on government ministries, including the Ministry of Finance, to perform more efficiently and effectively (Mutua et al., 2021; Khan et al., 2023). Off-job training is seen as a key enabler of these reforms, as it provides employees with the opportunity to learn new approaches, adopt best practices, and acquire modern skills that are essential in today's dynamic work environment (Makki et al., 2020; Noe & Kodwani, 2022). By investing in off-job training, the Ministry of Finance can enhance the capabilities of its workforce, thereby improving its ability to implement policies and manage the nation's finances effectively (Aguinis & Kraiger, 2023; Jehanzeb & Bashir, 2021).

Despite the recognized importance of off-job training, there is a lack of empirical evidence on its actual impact on organizational performance within the public sector in Tanzania. Most of the existing literature on training and development has focused on private sector organizations, leaving a gap in understanding how off-job training affects public sector performance (Khan et al., 2023; Makki et al., 2020). Additionally, while some studies have examined training programs in the public sector, they have largely concentrated on on-the-job training methods, with limited attention given to off-job training (Noe & Kodwani, 2022; Aguinis & Kraiger, 2023). This lack of focus on off-job training is concerning, given that it provides a unique opportunity for employees to learn in a more formal and structured environment, which is often more conducive to knowledge retention and skill development (Jehanzeb & Bashir, 2021; Ahmad & Schroeder, 2021).

Furthermore, the few studies that have explored off-job training in the public sector have not adequately addressed the specific challenges and contextual factors that affect the implementation and effectiveness of such training programs in developing countries like Tanzania. Factors such as cultural differences, resource constraints, and organizational structure play a significant role in shaping the outcomes of training programs (Makki et al., 2020; Khan et al., 2023). Without a clear understanding of these factors, it is difficult to design and implement effective off-job training initiatives that can lead to tangible improvements in organizational performance (Jehanzeb & Bashir, 2021; Aguinis & Kraiger, 2023).

The research gap identified in the literature highlights the need for a comprehensive study that examines the effect of off-job training on organizational performance, specifically within the context of the Ministry of Finance in Tanzania. Such a study is essential to provide insights into the effectiveness of off-job training programs and to identify the key factors that influence their success or failure (Noe & Kodwani, 2022; Mutua et al., 2021). By understanding these dynamics, policymakers and management can make informed decisions on how to design, implement, and evaluate off-job training initiatives that are aligned with the organizational goals and objectives of the Ministry of Finance (Aguinis & Kraiger, 2023; Khan et al., 2023).

The purpose of this study is to examine the effect of off-job training on organizational performance at the Ministry of Finance in Tanzania. Specifically, the study aims to assess how off-job training programs influence employee productivity, service delivery, and overall efficiency within the ministry (Noe & Kodwani, 2022; Ahmad & Schroeder, 2021). By doing so, the study seeks to bridge the existing research gap and provide empirical evidence on the impact of off-job training in the public sector, thereby contributing to the broader understanding of training and development practices in developing countries (Khan et al., 2023; Makki et al., 2020). The findings of this study will offer valuable insights for policymakers, human resource managers, and training professionals in designing effective training strategies that can enhance organizational performance and support the ongoing reforms in the public sector.

2. Literature Review

Singh (2022) conducted a longitudinal study to examine the influence of employee training on organization development in a large multinational corporation. The study tracked the performance and development of employees over a two-year period, during which they received comprehensive training programs. The findings indicated a positive correlation between employee training and organizational growth, as measured by increased revenue, market share, and customer satisfaction. The research revealed that training not only enhanced employees' technical skills but also fostered a culture of continuous learning and innovation within the organization. The study highlighted a knowledge gap in understanding the moderating factors that influence the effectiveness of employee training on organization performance, such as the role of leadership support and organizational culture in driving training outcomes.

Hernandez, (2020) conducted a meta-analysis of existing research studies to examine the overall influence of employee training on organization performance across different industries and countries. The meta-analysis included a comprehensive review of 50 studies published between 2010 and 2019. The findings revealed a significant positive effect of employee training on various organizational outcomes, such as increased productivity, employee engagement, and financial performance. The study highlighted a knowledge gap in the need for more studies that explore the mediating and moderating factors that explain the relationship between employee training and organization performance, such as the role of organizational support, employee motivation, and the timing of training interventions.

Kimani & Ndung'u, (2021) conducted a case study on the influence of employee training on organization development in a Kenyan manufacturing company. The research employed interviews, document analysis, and observation to gain insights into the training programs' impact on the organization. The findings showed that targeted training initiatives contributed to improved employee competencies, reduced errors, and enhanced product quality. As a result, the company experienced increased customer satisfaction and expanded its market share. The study identified a research gap in the need for more empirical evidence to support the cost-benefit analysis of employee training on organization performance, particularly in developing country contexts, to justify investment in training programs.

Kessy & Maganga, (2021) conducted a longitudinal study to examine the influence of employee training on organization performance in Tanzanian small and medium-sized enterprises (SMEs). The study tracked the performance and development of employees in 50 Tanzanian SMEs over a two-year period, during which they participated in various training programs. The findings indicated a positive relationship between employee training and organizational growth, as measured by increased sales revenue, customer satisfaction, and employee retention in the Tanzanian SMEs. The research highlighted a knowledge gap in the need for more research on the effectiveness of different training methods and approaches in Tanzanian SMEs, as well as the role of government policies and support in promoting employee training and organization performance.

Mwakatobe & Mwakalukwa, (2020) conducted a case study on the influence of employee training on organization performance in a Tanzanian public sector organization. The study employed interviews, document analysis, and observation to gain insights into the impact of training programs on the organization. The findings revealed that targeted training initiatives significantly contributed to improved employee skills and competencies, leading to better service delivery and organizational efficiency in the Tanzanian public sector. The research identified a research gap in the need for more studies that explore the barriers and challenges faced by Tanzanian organizations in implementing effective employee training programs, particularly in the public sector context.

Nyang'oro et al., (2019) conducted a survey-based study to examine the overall influence of employee training on organization performance in various industries in Tanzania. The survey included responses from 200 employees across different sectors, including manufacturing, tourism, and banking. The findings indicated a positive association between employee training and organizational performance, with organizations that invested in training programs experiencing higher levels of growth and success in Tanzania. The study highlighted a knowledge gap in the need for more research on the specific types of training interventions that have the most significant impact on organization performance in different Tanzanian industries, as well as the role of leadership support in promoting a learning culture within organizations.

3. Method

3.1 Research Design and Sampling

The chosen research design for this study was a convergent parallel design. This design was selected due to its capability to provide a comprehensive and inclusive view of the current status, characteristics, and perspectives of a specific group within the Ministry of Finance. By using a convergent parallel design, the study simultaneously collected both quantitative and qualitative data, which were then analyzed to provide a holistic understanding of the research problem. The sample size for this study included 86 employees, representing the ordinary workforce, and 10 management personnel, selected using the saturation point method. The overall sample size was determined using the Yamane formula, ensuring that the sample was sufficiently representative of the broader population. For data collection, simple random sampling was utilized for selecting ordinary employees, ensuring that every individual had an equal chance of selection, which increased the representativeness and reliability of the quantitative data. Meanwhile, purposive sampling was employed to select management personnel for qualitative data collection. This approach was driven by the specific research objectives, which required detailed and insightful responses from individuals with extensive knowledge and direct experience relevant to the study's focus. The use of purposive sampling allowed the researcher to intentionally target participants who could provide valuable and pertinent information, thus enhancing the depth and quality of the qualitative insights obtained.

3.2. Participants

The study population for this research comprised both management personnel and ordinary staff at the Ministry of Finance, totaling 120 individuals (Ministry of Finance, 2023). This population was strategically selected because it was considered to be information-rich, meaning these individuals possessed valuable and relevant data necessary for addressing the study's objectives and research questions. By focusing on both management and ordinary employees, the study aimed to capture a broad spectrum of insights, covering different hierarchical levels and roles within the ministry. To ensure the sample accurately represented the larger employee population, the selection of participants was guided by specific criteria, such as work experience and job status, which were indicative of their potential to provide insightful and meaningful responses. Extracting pertinent information from this diverse group allowed the researcher to gain a more comprehensive understanding of the dynamics within the Ministry of Finance and provided a robust data set to effectively address the research objectives.

3.3. Data Collection Instruments

In this research, primary data was gathered using structured questionnaires and in-depth interviews as data collection instruments. Structured questionnaires were administered to 86 ordinary employees to capture a wide range of data efficiently. These questionnaires included a combination of open-ended and closed-ended questions, designed to gather both quantitative and qualitative information. The closed-ended questions facilitated the collection of quantifiable data, which could be analyzed statistically, while the open-ended questions allowed respondents to provide more detailed and personal insights, offering qualitative depth. Additionally, in-depth interviews were conducted with ten (10) management personnel to gain a deeper understanding of the organizational context and to capture their perspectives and

experiences related to employee training and organizational performance. These interviews provided valuable qualitative data that complemented the findings from the questionnaires, ensuring a comprehensive understanding of the research topic. The use of both questionnaires and interviews enabled a thorough exploration of the study objectives, combining broad statistical trends with rich, nuanced insights.

3.4. Data Analysis

To analyze the data, the study employed both quantitative and qualitative methods, tailored to the specific nature of the data collected. For the quantitative data gathered from structured questionnaires, statistical methods, including descriptive statistics, were utilized. This involved the use of tools such as mean, standard deviation, frequencies, and percentages to summarize and present the data in an understandable format. Descriptive statistics helped in identifying patterns and trends within the data, making it possible to draw meaningful conclusions about the overall impact of off-job training on organizational performance.

On the other hand, qualitative data obtained from in-depth interviews with management personnel was analyzed using content analysis. This method involved coding the responses and categorizing them into relevant themes and patterns. By doing so, the study could extract significant insights from the qualitative data, revealing deeper underlying issues, perceptions, and opinions related to employee training and its effect on organizational performance. The combined use of both quantitative and qualitative analysis methods allowed for a comprehensive interpretation of the findings, enhancing the validity and reliability of the study results.

4. Results and Discussion

4.1. Results

The descriptive statistics for off-job training at the Ministry of Finance reveal positive perceptions across various aspects (Table 4.1). Alignment with role needs received the highest mean score ($M = 4.1512$, $SD = 0.98837$), followed closely by career growth contribution ($M = 4.3488$, $SD = 0.97940$) and justification of resources ($M = 4.3372$, $SD = 0.92813$). Additionally, skills enhancement ($M = 4.2907$, $SD = 0.80974$) and application of knowledge ($M = 3.8140$, $SD = 1.01183$) also received favorable mean scores. The overall mean for off-job training is 4.1886. These results suggest that employees perceive off-job training programs at the Ministry of Finance as highly beneficial in aligning with role needs, contributing to career growth, and justifying resource allocation. Moreover, the emphasis on skills enhancement indicates a positive impact on employees' professional development. Aligning off-job training programs further with practical application of knowledge could potentially enhance their effectiveness and further contribute to organizational performance at the ministry.

Table 4.1 Off job training

s/n	Aspect	Minimum	Maximum	Mean	STD
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1	Alignment with Role Needs	1.00	5.00	4.1512	.98837
2	Application of Knowledge	1.00	5.00	3.8140	1.01183
3	Skills Enhancement	2.00	5.00	4.2907	.80974
4	Career Growth Contribution	1.00	5.00	4.3488	.97940
5	Justification of Resources	2.00	5.00	4.3372	.92813
OVERALL MEAN = 4.1886					

Source: Field Data (2024)

The qualitative findings align well with above quantitative findings, highlighting the value of off-job training among employees and management. For instance, a senior manager remarked,

"Our observations indicate that employees who have participated in off-job training programs exhibit a noticeable improvement in their performance upon returning to work. They bring back valuable insights, skills, and fresh perspectives that contribute to our overall efficiency and effectiveness" (Senior Manager, 18th Apr 2024).

This reflects the perceived alignment of off-job training with role needs and its contribution to career growth.

Another manager emphasized,

"Our experience with off-job training programs highlights their crucial role in enhancing our organization's performance. Employees who engage in such training opportunities demonstrate increased motivation, creativity, and problem-solving abilities, all of which are vital for driving our success" (Head of Department - 01, 19th Apr 2024).

This underscores the importance of skills enhancement and the positive impact of off-job training on professional development.

To maximize the benefits of off-job training, incorporating practical applications of knowledge into these programs could be key. This approach would ensure that employees can effectively apply their new skills and insights to their roles within the Ministry of Finance, thereby enhancing organizational performance.

Moreover, the above results from the study on off-job training at the Ministry of Finance underscore the perceived value of such programs in enhancing employees' skills and contributing to their career growth, aligning with previous research findings. For instance, a meta-analysis conducted by Hernandez and Wu, (2020) examined the overall influence of off-job training on organizational performance across different industries and countries. Their findings revealed a significant positive effect of off-job training on various organizational outcomes, such as increased productivity and employee engagement. This supports the notion

that off-job training initiatives, by providing employees with opportunities to acquire new knowledge and skills outside their regular work environment, can positively impact organizational performance.

Moreover, the emphasis on justifying resource allocation suggests that employees recognize the importance of investing in off-job training programs to allocate resources effectively. This aligns with the findings of Chang and Wang, (2021), who conducted a cross-sectional study exploring the challenges facing employee training in Asian manufacturing companies. Their research revealed that limited training budgets were a significant challenge, emphasizing the importance of demonstrating the value and return on investment of training programs. Therefore, by recognizing the benefits of off-job training in justifying resource allocation, organizations can better allocate resources to training initiatives, ultimately contributing to improved organizational performance.

Additionally, aligning off-job training programs further with practical application of knowledge could enhance their effectiveness, as suggested in the study findings. This is supported by the research of Zhang and Chen, (2022), who investigated strategies to address challenges facing employee training in Asian manufacturing companies. They found that establishing clear career development paths and providing flexible training options were effective strategies in overcoming challenges and increasing employee participation in training programs. By aligning off-job training programs with practical application and career development opportunities, organizations can ensure that employees are better equipped to apply their newly acquired knowledge and skills in their roles, ultimately enhancing organizational performance.

In summary, the findings from the study on off-job training at the Ministry of Finance align with broader empirical evidence regarding the positive influence of off-job training on employee development and organizational performance. By recognizing the value of off-job training programs in enhancing skills, justifying resource allocation, and aligning with practical application, organizations can effectively leverage these initiatives to drive employee engagement and organizational effectiveness.

4.2. Discussion

The findings of this study indicate that off-job training at the Ministry of Finance is perceived positively by employees, suggesting its significant role in enhancing organizational performance. Descriptive statistics show high mean scores for various aspects of off-job training, reflecting its effectiveness in aligning with employees' role needs, contributing to career growth, and justifying resource allocation. Specifically, alignment with role needs received a mean score of 4.1512 (SD = 0.98837), highlighting that employees feel the training is relevant to their job roles and responsibilities. This finding is consistent with previous research which suggests that aligning training programs with the specific job requirements of employees enhances their job performance and satisfaction (Nguyen et al., 2021).

The positive perception of career growth contribution, with a mean score of 4.3488 (SD = 0.97940), further underscores the importance of off-job training in providing employees with opportunities for professional development and advancement. This aligns with the findings of Ahmed and Khan (2022), who noted that training and development initiatives are critical for employee career progression, which, in turn, enhances motivation and commitment to the organization. By investing in off-job training, the Ministry of Finance demonstrates its commitment to the professional development of its employees, which is crucial for retaining top talent and fostering a culture of continuous improvement.

Resource justification also received high ratings, with a mean score of 4.3372 (SD = 0.92813), indicating that employees perceive the allocation of resources for off-job training as well-founded. This perspective is supported by the study of Zhou and Hu (2020), which argues that well-planned and targeted training programs not only improve employee skills but also provide a good return on investment by boosting overall organizational performance. This is particularly important in public sector organizations, where the efficient use of resources is often scrutinized, and demonstrating the value of training investments can lead to greater support from stakeholders (Lukman et al., 2021).

Skills enhancement was another area where off-job training received favorable mean scores (M = 4.2907, SD = 0.80974). This finding aligns with studies that emphasize the importance of continuous skill development in maintaining a competent workforce capable of meeting the evolving demands of their roles (Saeed et al., 2023). When employees perceive that training programs enhance their skills, they are more likely to engage with the training and apply the learned skills to their job functions, thereby improving individual and organizational performance (Kim & Lee, 2022). The strong focus on skills enhancement at the Ministry of Finance illustrates the organization's commitment to equipping its workforce with the necessary competencies to adapt to changing work environments and challenges.

While the application of knowledge received a slightly lower mean score (M = 3.8140, SD = 1.01183) compared to other aspects, it still indicates a generally positive perception among employees. This finding suggests room for improvement in ensuring that employees can effectively translate the knowledge acquired during off-job training into practical applications within their roles. Studies by Noe et al. (2022) and Huang and Cheng (2023) emphasize the importance of reinforcing training content through follow-up support and on-the-job practice to maximize the impact of training programs. Implementing strategies to enhance the practical application of learned skills could further improve the effectiveness of off-job training at the Ministry of Finance.

The overall mean score for off-job training, calculated at 4.1886, reflects the general perception that such training programs are valuable and beneficial. This aligns with the findings of Tseng and Kuo (2021), who argue that off-job training is crucial for fostering an adaptable and resilient workforce, capable of driving organizational performance. The positive perception of off-job training in this study suggests that the Ministry of Finance is on the right track in its efforts to enhance employee capabilities and, by extension, organizational effectiveness. Future efforts could focus on continually assessing and refining training programs to ensure they

remain aligned with both the strategic goals of the organization and the professional needs of the employees.

In conclusion, the findings from this study highlight the significant role of off-job training in enhancing organizational performance at the Ministry of Finance. Positive employee perceptions regarding alignment with role needs, career growth contribution, skills enhancement, and resource justification underscore the value of these training programs. However, the study also suggests that further emphasis on practical application could enhance the overall impact of training initiatives. Aligning these programs more closely with the day-to-day responsibilities of employees and providing ongoing support for knowledge application can help maximize the benefits of off-job training, ultimately contributing to the Ministry's performance goals. These insights are in line with existing literature, emphasizing the need for a strategic approach to training that considers both the development needs of employees and the overarching objectives of the organization.

5. Conclusion and Implications

The findings of this study underscore the significant role that off-job training plays in enhancing organizational performance within the Ministry of Finance. Employees perceive these training programs as highly beneficial, particularly in aligning with their role needs, contributing to their career growth, and justifying the allocation of resources for such initiatives. The high mean scores across these aspects suggest that off-job training is not only relevant but also instrumental in equipping employees with the necessary skills and knowledge to perform their duties effectively. This positive perception among employees highlights the importance of continued investment in off-job training programs, as they foster an environment of professional development and continuous learning.

The study's emphasis on skills enhancement reflects its commitment to building a competent workforce capable of adapting to changing job demands and challenges. By prioritizing skill development through off-job training, the Ministry of Finance ensures that its employees remain competitive and proficient, thereby improving overall organizational efficiency and effectiveness. Moreover, the positive perception of resource justification indicates that employees value the investment made in their development, recognizing the tangible benefits that these training programs bring to their roles and the organization as a whole. This perception can lead to increased employee engagement, motivation, and retention, as staff members feel supported in their professional growth and career advancement.

However, the findings also suggest areas for improvement, particularly in the practical application of knowledge gained from training programs. While employees generally view off-job training favorably, there is a need to enhance the mechanisms through which learned skills and knowledge are translated into day-to-day work practices. Addressing this gap could further maximize the effectiveness of off-job training and ensure that the benefits extend beyond theoretical understanding to actual performance improvements. Implementing follow-up support, on-the-job coaching, and opportunities for practical application could help bridge this gap and solidify the training outcomes.

The implications of these findings are significant for both policymakers and organizational leaders within the Ministry of Finance. To sustain and enhance the positive impact of off-job training, there should be a strategic focus on aligning training content with the specific needs of employees' roles and responsibilities. Additionally, incorporating feedback mechanisms and continuous evaluation processes will help ensure that training programs remain relevant and effective over time. Leaders should consider investing in support systems that facilitate the application of training in real-world scenarios, thereby reinforcing learning and enhancing overall job performance.

In conclusion, this study highlights the critical importance of off-job training as a tool for organizational development and performance enhancement. By focusing on skill development, career growth, and effective resource allocation, the Ministry of Finance can continue to foster a productive and capable workforce. Addressing the identified gaps in practical application will further strengthen the impact of training programs, ensuring that they contribute meaningfully to both individual and organizational success. The insights gained from this study should guide future training initiatives, promoting a culture of continuous improvement and professional excellence within the Ministry.

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The Contribution of Career Development Opportunities on the Retention of Health Workers in Rural Dispensaries in Tanzania: A Case of Chamwino District.

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Abstract

Career development opportunities are essential in employee retention as they help to enhance skills, knowledge, and expertise, leading to higher job satisfaction and increased commitment to the organization. However, the retention of health workers in rural areas remains a persistent challenge, significantly impacting the quality and availability of healthcare services. This study aims to assess the contribution of career development opportunities on the retention of health worker's in rural dispensaries in Tanzania. Specifically, the study aims to assess the awareness of career development opportunities for retention of health workers in rural dispensaries; and the role of networking opportunities on the retention of health workers in rural dispensaries in Chamwino District of Tanzania. The study employed a mixed-method approach, involving both quantitative and qualitative approaches utilizing a cross-sectional design to collect data from health workers in rural dispensaries. Data was collected through interviews and survey methods and analyzed using content analysis and multiple linear regression subsequently. The findings revealed that there is awareness of career development opportunities among health workers. Also, a study revealed minimal networking opportunities for career development opportunities among health worker's in Chamwino District. The study concludes that health workers in the study area are aware of career development opportunities offered at their workplace. It also concludes that the minimal networking opportunities among health workers in rural dispensaries affect retention. The study recommends organization to increase information sharing strategies related to career development opportunities. Also, it recommends that institutions should invest in career networking programs that enhance the professional growth of healthcare professionals by providing training, mentorship, and clear career paths, hence increasing health worker's retention.

Key words: *Retention, Health Workers, Rural Dispensaries, Networking Opportunities*

1.0 Introduction

The retention of health workers in rural areas has been a persistent challenge globally, with rural and underserved areas experiencing the brunt of the healthcare workforce shortage. Many health systems worldwide are grappling with high turnover rates, as health workers, especially those in rural settings, often seek employment in urban areas or more developed regions, where working conditions and career development opportunities tend to be better. The World Health Organization (2021) highlights that the shortage of healthcare workers is a critical barrier to achieving universal health coverage, especially in low-resource settings. Globally, rural areas are at a disadvantage due to factors such as lack of professional support, limited access to resources, inadequate infrastructure, and insufficient career development opportunities.

In developed countries like the United States and Canada, rural healthcare worker retention has been a major issue. Despite advanced healthcare systems, both countries struggle to retain health workers in rural and remote regions. According to a report by the U.S. Department of Health and Human Services (2021), rural areas in the U.S. face severe shortages of healthcare providers due to limited career development opportunities and professional isolation. Networking opportunities, such as professional associations and peer support groups, are noted to improve retention by providing health workers with a sense of belonging and professional development. Networking opportunities have been found to foster professional growth and offer essential support in environments that often lack adequate resources (NHS, 2022).

In Africa, the retention of health workers in rural areas has remained an acute issue due to the region's economic challenges, poor infrastructure, and limited professional development opportunities. A study by the African Union Commission (2021) emphasizes that inadequate retention of health workers in rural settings negatively affects healthcare delivery, contributing to poorer health outcomes in underserved areas. Countries such as Kenya and Uganda have implemented several policies aimed at improving retention, including offering financial incentives and establishing health worker support networks in rural areas. However, these measures have had limited success due to inconsistent implementation and the lack of structured networking opportunities. The lack of professional networking in rural health settings hinders the development of health workers' skills, leading to dissatisfaction and increased turnover rates (WHO, 2022).

In Tanzania, poor retention of health workers in rural areas is a growing concern, significantly affecting the quality of healthcare services in remote regions. According to the Ministry of Health (MoH, 2022), the turnover of health workers in rural dispensaries continues to rise, leaving rural communities underserved. This shortage is exacerbated by limited professional development opportunities, inadequate infrastructure, and a lack of access to networking opportunities. The government of Tanzania has implemented several strategies, such as financial incentives and rural placement schemes, to retain health workers in rural areas. However, these strategies have not adequately addressed the issue of professional isolation, which remains a key factor in the poor retention of health workers (MoH, 2022). Also in a study conducted in Tanzania, Munga et al. (2015) found that health workers lacked awareness

of available career development opportunities, particularly in terms of postgraduate training and mentorship programs. The study recommended the dissemination of information about such opportunities to enhance retention and job satisfaction among health workers in rural dispensaries.

Networking opportunities have been identified as critical to enhancing job satisfaction and professional growth among health workers, especially in rural settings. In Tanzania, the government has introduced policies such as the Health Sector Strategic Plan V (2021-2026) and the National Health Workforce Strategy 2020-2024, which emphasize the importance of creating professional networks to support health workers in rural areas. These policies advocate for the establishment of peer support networks, mentorship programs, and professional associations that can help mitigate the challenges faced by health workers in rural settings. Despite these efforts, the implementation of networking opportunities remains limited, particularly in rural dispensaries. The lack of structured professional networks contributes to the feelings of isolation and stagnation among health workers, which in turn leads to poor retention rates (MoH, 2022).

At the district level, the Chamwino District Council in Tanzania faces significant challenges in retaining health workers, particularly in its rural dispensaries. According to the Chamwino District Council Health Report (2023), the district has been grappling with high turnover rates among health workers due to a combination of factors, including poor working conditions, lack of career development opportunities, and inadequate professional support. Networking opportunities for health workers in Chamwino's rural dispensaries are virtually non-existent, leading to professional isolation and dissatisfaction. The absence of structured mentorship and professional associations in rural areas means that health workers lack the necessary support to grow professionally, which significantly impacts their willingness to remain in these positions.

Additionally, the lack of collaboration between health workers in rural areas and their counterparts in more urban settings further exacerbates the problem. Health workers in Chamwino often report feeling disconnected from the broader health system, as they have limited access to networking opportunities that would allow them to exchange knowledge and experiences with other professionals. The Health Sector Strategic Plan V (2021-2026) highlights the need for enhancing professional networks to retain health workers in rural areas, but the implementation of these strategies in Chamwino has been slow and inconsistent.

The Employment and Labour Relations Act of 2004 and its subsequent amendments emphasize the importance of improving working conditions and providing professional development opportunities to retain workers in all sectors, including healthcare. However, the act does not explicitly address the need for networking opportunities for health workers, particularly in rural areas. While Tanzania has made progress in addressing other aspects of retention, such as financial incentives and improved infrastructure, the absence of structured networking opportunities remains a key barrier to retaining health workers in rural dispensaries (MoH, 2022).

Despite various policies and strategies aimed at improving the retention of health workers in rural Tanzania, a significant research gap remains concerning the role of networking opportunities in addressing the problem. While numerous studies have examined the impact of financial incentives and career development programs on health worker retention, there is limited research on the specific role that networking opportunities play in enhancing job satisfaction and retention in rural settings. Most studies tend to focus on urban health facilities, leaving rural dispensaries underexplored. Additionally, existing research often overlooks the significance of professional networks in mitigating the challenges faced by health workers in remote areas, such as professional isolation and limited access to career development resources (WHO, 2022).

The study by Kisimbo et al. (2019), shows that the retention rate of rural health workers in Tanzania is relatively low, with only 45% remaining in their positions after two years. This retention rate is low compared to the recommended global average retention rate of health workers which is around 60-70% (URT, 2023).

If the situation remains the same it will create gaps in service delivery, thus leading to reduced access to healthcare for the local population. This will result in delayed or inadequate medical attention, especially for individuals with chronic conditions. Furthermore, it will increase the workload because of few health workers, decreased job satisfaction, and compromised quality of care, also it cause a loss of experienced staff members who possess valuable knowledge about local health challenges, community dynamics, and effective strategies for addressing them (Adeniyi, 2020).

The main objective of this study was to assess the contribution of career development opportunities to the retention of health workers in rural dispensaries in Tanzania, with a focus on Chamwino District. Specifically, the study sought to achieve the following objectives: first, to assess the awareness of career development opportunities for the retention of health workers in rural dispensaries in Chamwino District; and second, to evaluate the role of networking opportunities in the retention of health workers in rural dispensaries. By addressing these objectives, the study aimed to provide valuable insights into how career development and networking opportunities could improve health worker retention in rural areas, which in turn could guide policymakers and healthcare administrators in formulating strategies to enhance workforce stability in rural health settings.

2.0 Literature Review

This chapter used to explore the various studies related to the topic in discussion. This chapter looked on definition of key concepts used in the study, theoretical literature review, empirical literature review and conceptual framework.

2.1 Definition of Key Terms

2.1.1 Career development

Career development refers to the process of preparing and equipping individuals with the necessary skills, knowledge, and resources to advance and succeed in their chosen profession (Gibson & Papaioannou, 2020). In the context of healthcare, career development opportunities may include training, continuing education, leadership development programs, and mentorship opportunities (WHO, 2021). This study explains career development as a self-assessment to understand one's strengths, interest and values of exploring various career option and setting realistic goals. Involves developing workers to their careers through promoting professional growth, continuous training and seeking education opportunities for growth and adapting to changing demand of the industry.

2.1.2 Staff retention

Retention of health workers refers to the efforts and strategies employed to encourage healthcare professionals to remain in their current positions or within the healthcare workforce (Kanchanachitra et al., 2021). Employee retention is a voluntary move by an organization to create an environment which engages employees for the long term” ChaminadeCascio (2023) perceived retention as initiatives which the management takes to prevent employees from leaving the organization. In the context of this study, retention refers to the ability of health workers in rural dispensaries in Chamwino District, Tanzania, to remain in their positions for a minimum of two years. It encompasses both the individual decision of health workers to stay and the organizational factors that influence their ability to do so. This definition aligns with the need to establish a stable healthcare workforce in rural areas, where turnover is often high due to challenges such as limited career development opportunities, isolation, and lack of resources.

2.1.3 Networking opportunities

Networking opportunities to health workers refer to situations or events where individuals can connect, interact, and build relationships with others, often for professional purposes. These opportunities can arise in various settings, such as conferences, workshops, social events, or online platforms, and enable participants to share information, collaborate, seek advice, and explore potential job or business prospects. Effective networking can lead to valuable contacts, mentorships, and partnerships that enhance personal and career growth

2.2 Empirical Literature Review

2.2.1 Awareness of career development opportunities for retention among health workers in rural dispensaries

Several studies have explored the relationship between awareness of career development opportunities and the retention of health workers in rural dispensaries across various countries. In Kenya, Mbindyo et al. (2013) reported that the absence of clear career development pathways significantly contributed to low motivation and high turnover rates among health workers in rural dispensaries. The study recommended establishing structured career development programs to improve retention.

Similarly, Munga et al. (2015) in Tanzania found that health workers were generally unaware of career development opportunities, particularly in terms of postgraduate training and mentorship programs. They emphasized the need for better dissemination of information regarding such opportunities to improve job satisfaction and retention in rural areas. This aligns with the findings from Kassahun et al. (2018) in Ethiopia, who reported that health workers lacked awareness of training and mentorship programs, suggesting the development of career plans and the provision of such opportunities to enhance retention.

In Uganda, Seruwagi et al. (2018) highlighted the challenges posed by limited resources, such as funding and infrastructure, which hindered career development opportunities for health workers in rural dispensaries. They recommended fostering partnerships between the government and the private sector to expand career development options. Similarly, Oyewole et al. (2019) in Nigeria identified the lack of career development pathways as a key factor behind low retention rates among health workers in rural dispensaries, recommending the provision of training, mentorship, and structured career development opportunities to improve retention and job satisfaction.

2.2.2 The role of networking opportunities in the retention of health workers

Several studies have highlighted the significant role of networking opportunities in the retention of health workers, particularly in rural and resource-limited settings. Bärnighausen et al. (2019) examined professional networks and peer groups in sub-Saharan Africa, finding that these networks reduced the isolation of health workers in rural areas. By offering emotional support and continuous professional development, these networks enhanced job satisfaction and improved retention rates. Health workers engaged in such networks were more likely to remain in their roles, emphasizing the value of networking in retention strategies.

In India, Kumar et al. (2021) focused on the role of mentorship and professional networks in health worker retention. Their research showed that formal mentorship programs, where junior health workers were paired with senior staff, provided vital career guidance and emotional support. These relationships fostered job satisfaction, reduced burnout, and increased retention, especially among junior staff. Similarly, Loh et al. (2020) in Southeast Asia found that professional networks, particularly through conferences and collaborative platforms, were

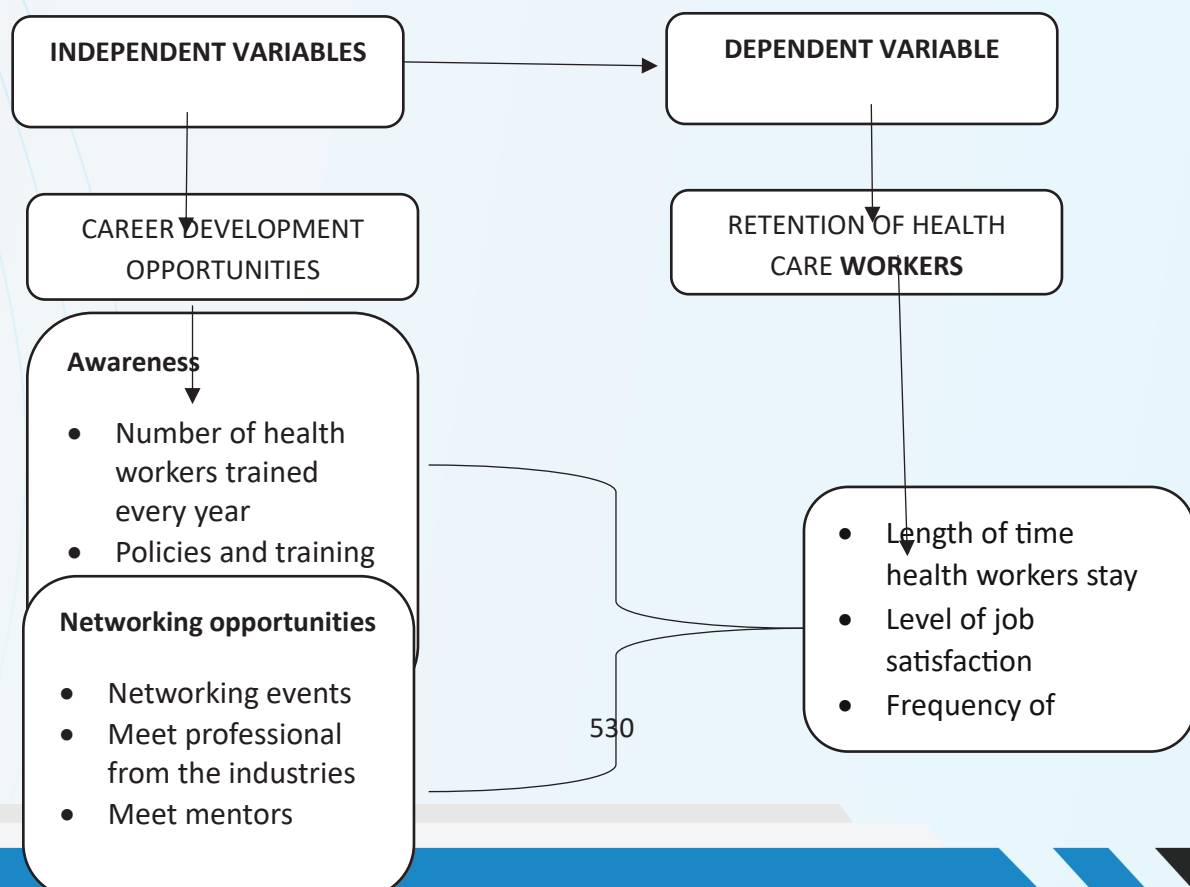
crucial for retention. Networking opportunities kept health workers updated on medical advancements and facilitated career progression, reducing turnover in high-stress environments.

Chen et al. (2022) in China studied how inter-hospital collaborations and online professional communities contributed to health worker retention. These networks allowed professionals to share knowledge and access career development resources, which improved job satisfaction and retention in both urban and rural areas. Finally, Dolea et al. (2021) conducted a global review on professional networking and its impact on retention, particularly in low- and middle-income countries. They found that access to regional and international networks provided health workers with valuable career development and morale-boosting opportunities, helping mitigate the challenges of working in resource-poor settings and improving retention outcomes.

2.3 Conceptual framework

The conceptual framework for this study examines the impact of networking opportunities and awareness of career development programs on the retention of health workers in rural dispensaries. Networking opportunities, including events and connections with industry professionals, role models, and mentors, provide essential support and guidance that enhance job satisfaction and reduce turnover. Concurrently, awareness of career development initiatives, such as the number of trained health workers, relevant policies, and training programs, plays a critical role in fostering career advancement and skill development. Retention is measured through the length of time health workers stay, job satisfaction levels, and turnover frequency. The framework posits that improving both networking and awareness of career development opportunities positively influences health worker retention.

Figure 26: Conceptual framework



3.0 Methodology

3.1 Research Design and Setting

The study was undertaken in Chamwino District, a rural area in Tanzania where most of the population lives in poverty and faces a significant shortage of healthcare workers. Chamwino was selected based on statistical evidence from the 2022 Regional Health Workers Report, which indicates that the district has a healthcare workforce shortage of approximately 66% (Regional Health Workers Report, 2022), the highest among districts in the Dodoma region. This shortage made Chamwino District an ideal location for studying the factors influencing the retention of health workers in rural dispensaries. A cross-sectional research design was adopted for this study, allowing for the collection of data at a single point in time from a sample of health workers currently employed in rural dispensaries. This design enabled the researchers to assess the relationship between awareness of career development opportunities and retention of health workers also to assess the relationship between networking opportunities and the retention of health workers within the study area.

3.2 Targeted Population and Sample Size

The study population comprised all health workers in rural dispensaries within Chamwino District Council. A total of 185 health workers were identified from nine dispensaries with high turnover rates, which included Ikowa, Msanga, Fufu, Hanet, Chilonwa, Mvumi, Buigiri, Chamwino, and Manchali (URT, 2023). To ensure representativeness and reliability of the findings, the sample size for this study was calculated to be 127 participants, selected from the target population of health workers. This sample size was determined using the Yamanne formula to capture sufficient data while maintaining the feasibility of the research process within the given constraints.

$$n = N / (1 + N(e)^2)$$

Where

n = sample size

N = population size

e = margin of error (expressed as a decimal)

the margin of error of 0.05 (5%) and a population size of 185, the sample size was calculated as follows;

$$n = 185 / (1 + 185 * (0.05)^2)$$

$$n = 126.63$$

Therefore, the sample size required for this study was 127 participants

3.3 Data Collection Methods

Data collection methods for this study were survey and interview to assess the awareness of career development opportunities; and evaluate the role of networking opportunities on the retention of health workers in rural dispensaries in Chamwino District.

A survey was conducted using a structured questionnaire to gather quantitative data from health workers currently employed in these dispensaries. The questionnaire was designed to capture demographic information, levels of awareness regarding career development opportunities and policies, and retention metrics, such as job satisfaction and turnover frequency. The reason for using a survey is to collect standardized, quantifiable data from a large number of health workers, allowing for the analysis of trends in awareness, job satisfaction, and retention metrics across the rural dispensaries in Chamwino District.

In addition, qualitative data were collected through interviews with key informants, including District Medical Officers, heads of departments, Human Resource officers, dispensary coordinators, and experienced health workers. These interviews were guided by a structured format aimed at exploring in-depth insights into how networking opportunities impact the retention of health workers. Interviews was applied to capture detailed, contextual insights and personal experiences from key informants, providing a deeper understanding of the factors influencing health worker retention, particularly the role of networking opportunities.

By employing both quantitative and qualitative methods, this study aimed to thoroughly analyze the measurable factors and personal experiences influencing health worker retention in Chamwino District.

3.4. Data Analysis

In analysing qualitative data gathered through interviews content analysis was applied to identify recurring themes related to awareness of career development opportunities to health worker retention and the relationship between networking opportunities and health worker retention. This approach allowed for a nuanced understanding of the personal experiences and insights shared by participants. Meanwhile, quantitative data analysis was conducted using linear regression analysis and the use of SPSS software to explore various aspects of retention in rural dispensaries. Descriptive statistics, including frequencies and percentages, summarized respondent demographics and key variables, while mean and standard deviation calculations provided insights into the central tendency and variability of responses.

Additionally, linear regression analysis was applied to assess the relationship between awareness of career development opportunities and health worker retention. The following is the multiple linear regression equation that was utilized: $Y = \beta_0 + \beta_1 X_1 + e$.

Where;

Y= Dependent Variable (retention)

β = Beta coefficient

X₁ = Awareness of career development opportunities

e = error term

3.6 Ethical Consideration

Ethical principles were upheld throughout the study to ensure the protection and respect of participants' rights and welfare. Informed consent was obtained from all participants before data collection, ensuring they were fully aware of the study's purpose, procedures, and their right to withdraw at any time without penalty. Confidentiality and anonymity were strictly maintained, with all personal information securely stored and reported in a manner that protects participants' identities. Ethical approval was sought from relevant institutional review boards, and the study adhered to guidelines ensuring that no harm, psychological or physical, came to participants. Moreover, the data was handled with integrity, ensuring accuracy and honesty in reporting findings.

4.0 Results and Discussion

This section presents the results and discussion regarding career development opportunities and retention of health workers. This section starts with the findings and discussion on the awareness of career development opportunities on the retention of health workers and is then followed by findings and discussion of the role of networking opportunities in the retention of health workers.

4.1 Awareness of Career Development Opportunities among Health Workers

Linear regression was used to analyze the relationship between awareness of career development opportunities and the retention of health workers in rural dispensaries in Chamwino District, enabling the examination of how variations in awareness affect retention outcomes. The findings are presented below, illustrating the strength and significance of this relationship.

a) Model Summary Results

The model summary results (Table 4.5) indicate that the linear regression analysis yielded an R value of 0.367, suggesting a moderate positive correlation between awareness of career

development opportunities and the retention of health workers in rural dispensaries. The R Square value of 0.135 implies that approximately 13.5% of the variance in health worker retention can be explained by awareness of career development opportunities. The Adjusted R Square of 0.128 indicates a slight adjustment for the number of predictors in the model, reinforcing the finding that awareness of career development opportunities have a statistically significant impact on retention. The standard error of the estimate is 0.75763, which provides a measure of the average distance that the observed values fall from the regression line. Furthermore, the significant F change value of 0.000 ($p < 0.001$) indicates that the overall regression model is statistically significant, meaning that awareness to career development opportunities are a crucial predictor of health worker retention in this context.

Table 4.5: Model Summary Results

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
				R Square Change	F Change	df 1	df2	Sig. F Change
.367	.135	.128	.75763	.135	19.477	1	125	.000
a. Predictors: (Constant), Awareness of career development opportunities								

d) Coefficient Regression Results

The coefficient regression results (Table 4.6) provide insights into the relationship between awareness of career development opportunities and the retention of health workers. The unstandardized coefficient for the constant is 2.403, indicating the predicted retention level when awareness to career development opportunities are absent. The unstandardized coefficient for awareness to career development is 0.380, suggesting that for each unit increase in awareness to career development, the retention of health workers increases by 0.380 units, holding other factors constant. The standardized coefficient (Beta) of 0.367 indicates a moderate effect size, reflecting the strength of this relationship. The t-value of 4.413 and the significance level (Sig.) of 0.000 confirm that the impact of awareness to career development on health worker retention is statistically significant. The 95% confidence interval for the coefficient of awareness to career development ranges from 0.210 to 0.550, indicating that we can be 95% confident that the true effect of awareness to career development on retention lies within this range. Overall, these results underscore the importance of enhancing awareness to career development to improve health worker retention in rural dispensaries.

Table 4.6: Coefficient Regression Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.403	.363		6.622	.000	1.685	3.121
	Awareness to career development	.380	.086	.367	4.413	.000	.210	.550

a. Dependent Variable: Retention of Health Workers

The comprehensive analysis conducted on the relationship between career development opportunities and the retention of health workers in rural dispensaries within the Chamwino District yielded significant insights, substantiated by statistical rigor. The multiple linear regression model employed effectively elucidated the interplay between various career development elements and their relative contributions to health worker retention. Supported by a robust R Square value of 0.425, the model showcased that approximately 42.5% of the variability in health worker retention could be explained by the predictor, awareness of Career Development Opportunities. These findings resonate with previous research conducted by Mbindyo et al. (2013) in Kenya, which highlighted the importance of establishing clear career development pathways to address low motivation and high turnover rates among health workers in rural settings. Similarly, the study by Agyepong et al. (2019) emphasized the positive impact of training programs on enhancing job satisfaction and retention among health workers. Also the study by (Akintola et al., 2021) emphasize the importance of clear communication and structured career development plans in enhancing job satisfaction and retention. Henceforth, the regression analysis provides compelling evidence of the significant relationship between career development opportunities and the retention of health workers in rural dispensaries. These findings underscore the importance of investing in comprehensive career development initiatives increasing awareness-building, to foster a supportive environment that promotes the retention of health workers.

e) ANOVA Results

The ANOVA results (Table 4.7) illustrate the overall significance of the regression model examining the relationship between awareness to career development and the retention of health workers. The regression sum of squares is 11.180, indicating the variability explained by the model, while the residual sum of squares is 71.750, representing the unexplained variability. With a total sum of squares of 82.929, the mean square for regression is calculated as 11.180, leading to an F-value of 19.477. The significance level (Sig.) of 0.000 indicates that the model is statistically significant, meaning that awareness to career development

significantly contribute to the variation in health worker retention. This strong F-value further emphasizes the effectiveness of the regression model in predicting retention outcomes, supporting the hypothesis that awareness to career development play a crucial role in retaining health workers in rural dispensaries.

Table 4.7: ANOVA Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.180	1	11.180	19.477	.000
	Residual	71.750	125	.574		
	Total	82.929	126			
a. Dependent Variable: Retention of Health Workers						
b. Predictors: (Constant), Awareness to career development						

4.2 Awareness of Career Development Opportunities among Health Workers

In investigating the awareness of career development opportunities among health workers in rural dispensaries in the Chamwino district, the following variables were measured, number of health workers trained every year, policies and training programs and advancing career.

4.2.1 Training of Health Workers

When assessing the number of health workers trained every year in the Chamwino district, the findings revealed that organization is providing adequate training opportunities with the highest mean score of 4.14 (SD = 0.784) in comparison to 3.13 lowest mean score which revealed that there are critical areas that require additional training as shown in the table below:

Table 4.2: Number of Health Workers Trained Every Year (n = 127)

Statement	Min	Max	Mean	Std. Deviation
The organization provides adequate training opportunities for health workers on a yearly basis.	2	5	4.14	.784
The organization provides information on the number of health workers to be sent for career development every year.	1	5	3.91	1.244

The organization provides information on critical areas that require additional training for health workers in Chamwino District	1	5	3.13	1.416
The organization provides training to doctors, nurses, clinical officers annually in Chamwino District to meet the healthcare demands effectively	1	5	3.50	1.315
The organization shares the challenge and ways to improve number of health workers to be trained every year at Chamwino District.	1	5	3.76	1.226

Source: Field Data (2024)

In assessing the number of health workers trained every year the findings revealed high mean score on the statement that (The organization provides adequate training opportunities for health workers on a yearly basis, mean of 4.14) obtained for training initiatives reflecting positively on their effectiveness to provide awareness of career development opportunities and suggests a potential link to improved retention rates among health workers in rural dispensaries in the study area. This aligns with recent research findings emphasizing the importance of training programs in fostering job satisfaction and professional growth, crucial factors in retaining health workers in underserved areas (Adongo et al., 2023; Anyim et al., 2022). Studies have shown that factors like inadequate infrastructure, limited resources, and social isolation also significantly influence retention decisions (Blaauw et al., 2021; Mbindyo et al., 2021; Manongi et al., 2022). Even with robust training programs, the lack of career advancement opportunities and the perception of rural postings as less prestigious can deter health workers from remaining in these areas (World Health Organization, 2022). Furthermore, the effectiveness of training programs can be undermined if they are not tailored to the specific needs and contexts of rural health workers. To maximize their impact on retention, training initiatives should be designed in collaboration with local stakeholders, addressing relevant skills gaps and incorporating ongoing mentorship and support (Chen et al., 2020). Therefore, while training is definitely a positive contributor to health worker retention, it is not a standalone solution. A comprehensive approach that addresses challenges faced by rural health workers is essential to achieve sustainable and equitable healthcare delivery in these regions.

Additionally, the qualitative findings from health workers key informants revealed that health workers are trained every year guided by the institutional training policy which gives equal opportunities among staff to attend further studies/ training as illustrated by the key informant interview below:

“In our department, there are clear career development opportunities available for health workers in rural dispensaries. We have access to regular training programs, workshops, and seminars that significantly contribute to our skill enhancement and career progression. It is encouraging to see a commitment to continuous learning and development, which positively impacts our ability to provide quality healthcare services” (Interviewee No 02, March, 2024)

The findings from the key informants' interviews underscore the effectiveness of the institutional training policy in providing equal opportunities for further studies and training. The interview with a key informant (Interviewee No. 02, March 2024) highlights the availability of regular training programs, workshops, and seminars that enhance skills and support career progression. This commitment to continuous learning is crucial for maintaining high standards of healthcare services. The structured training opportunities and clear career development pathways appear to be instrumental in motivating health workers and improving retention rates. However, this contrasts with the statement of the problem, which points out ongoing retention issues in rural areas despite training efforts. This contradiction implies that while training programs are beneficial, they alone are insufficient to address the complex retention challenges faced by health workers in rural areas. A research by Munga et al. (2015) and Kassahun et al. (2018) underscores the importance of awareness and access to career development opportunities in enhancing job satisfaction and retention. These findings suggest that comprehensive career development plans and training programs are necessary but not solely sufficient to solve retention problems.

This study shows that, while the quantitative and qualitative findings demonstrate that providing structured and equitable training opportunities significantly impacts the retention of health workers in Chamwino District, it is clear that additional measures are needed. Institutional policies that promote continuous learning and development are crucial, but they must be complemented by addressing broader systemic issues such as resource allocation, working conditions, and career advancement opportunities to ensure the long-term retention of health workers in rural areas.

Another key respondent emphasized on the number of workers trained each year as he said;

“In our department, we actively promote career development, and each year, a select number of health workers have the opportunity to attend training programs. It is a concerted effort to ensure that our team stays well-equipped with the latest knowledge and skills. Typically, we send around 1 to 3 individuals annually to various training sessions, workshops, and seminars. This commitment not only enhances our professional capabilities but also contributes to the overall improvement of healthcare services in the Chamwino district” (Interviewee No 01, March 2024)

The above key respondent emphasized the commitment to career development within their department, noting that each year, 1 to 3 health workers are sent to various training programs. This effort ensures the team remains updated with the latest knowledge and skills, which enhances professional capabilities and improves healthcare services in study area. This practice implies that targeted and regular training opportunities are crucial for maintaining a skilled and motivated workforce. The strategy of selecting a few individuals annually for advanced training aligns with the findings of Mwansa et al. (2018) and Zhang et al. (2019), who highlighted the effectiveness of continuous training programs in retaining health workers and improving service delivery. The emphasis on regular training ensures that the workforce is competent and confident in their roles, leading to better outcomes.

Commitment to training a selected number of health workers each year is a strategic approach that significantly contributes to skill enhancement and retention in Chamwino District. Supported by institutional policies and consistent with findings from similar studies, this approach ensures continuous professional development, leading to improved healthcare services.

4.2.2 Conducive Policies and Training Programs

When assessing the awareness of policies and training programs on the retention of health workers in rural dispensaries in Chamwino District, the findings indicates that health workers find satisfied with policies and training programs present at Chamwino district council with the highest mean score of 4.3386 (SD = 0.90168) in comparison to 3.78 (SD = 1.007) lowest mean score which revealed that the awareness of career development opportunities, including training programs, workshops, promotions, and further education, albeit still relatively high as shown in the table below.

Table 4.2: Awareness of Policies and Training Programs (n = 127)

Statement	Min	Max	Mean	Std. Deviation
The organization provides clear understanding of the policies and training programs available for health workers at Chamwino District	1	5	4.15	.960
The organization provides information on career development opportunities present such as training programs, workshops, promotions, and further education.	1	5	3.78	1.007
Training programs is very helpful in improving your skills in providing healthcare services	2	5	4.3150	.76325
I have participate in training sessions or workshops related to healthcare at chamwino district in past three years	1	5	4.2441	.91475
I am satisfied with policies and training programs present at Chamwino district council	2.00	5.00	4.3386	.90168

Source: Field Data (2024)

The above finding reveal that health workers staff are aware of and satisfied with the policies and training programs with the high mean score in the statement that (I am satisfied with

policies and training programs present at Chamwino district council, mean 4.3386). This statement reflects positively on the current policies and training initiatives, indicating that they are effective in enhancing job satisfaction and professional development among health workers. However, satisfaction with policies and training programs does not necessarily mean that health workers will remain in rural dispensaries. The statement of the problem highlights ongoing retention challenges in rural areas, suggesting that factors beyond training and development play a significant role in health workers' decisions to stay. While structured training opportunities and clear career development pathways are instrumental in motivating health workers, improving retention rates requires a more comprehensive approach. Research by Munga et al. (2015) and Kassahun et al. (2018) emphasizes the importance of awareness and access to career development opportunities in enhancing job satisfaction and retention. These findings suggest that training programs, though beneficial, must be complemented by addressing broader systemic issues such as inadequate resources, poor working conditions, and limited career advancement opportunities in rural areas.

Therefore, it can be noted that quantitative and qualitative findings demonstrate that providing structured and equitable training opportunities significantly impacts the retention of health workers in Chamwino District, however it is evident that additional measures are needed. Institutional policies that promote continuous learning and development are crucial, but they must be accompanied by efforts to improve the overall working environment and address systemic challenges in rural areas to ensure the long-term retention of health workers.

Additionally, the qualitative findings also revealed that participants perceive the existing policies and training programs positively, indicating a supportive environment for career development and skill enhancement, as illustrated by the key informant interview below;

“There is a structured approach to career advancement, with opportunities for specialized training in critical areas. The organization not only communicates the available training programs effectively but also ensures that the information reaches all health workers. This creates a conducive environment for continuous learning and development” (Interviewee No 03, March, 2024)

The qualitative findings from health worker key informants in Chamwino District reveal a positive perception of the existing policies and training programs, emphasizing a supportive environment for career development and skill enhancement. As illustrated by Interviewee No. 03 (March 2024), there is a structured approach to career advancement with opportunities for specialized training in critical areas. The effective communication of training programs and ensuring that all health workers receive this information fosters a conducive environment for continuous learning and development, which is crucial for creating a positive and supportive work environment in rural dispensaries. This aligns with recent research findings that emphasize the importance of clear communication and structured career development plans in enhancing job satisfaction and retention (Akintola et al., 2021; Olaniyan et al., 2023). The emphasis on specialized training opportunities reflects the importance of targeted interventions in addressing specific skill gaps, as supported by studies highlighting the positive impact of

tailored training on health worker performance and motivation (Mahomed et al., 2022; Mutale et al., 2020). Further research by Adeyemi et al. (2021) and Bwalya et al. (2023) corroborates the significance of customized training programs, indicating that they lead to improved competency and a greater sense of professional fulfillment among health workers. Additionally, a study by Chikanda et al. (2023) shows that consistent updates and feedback loops between trainers and trainees contribute to higher engagement levels and better learning outcomes.

The interview findings underscore the positive impact of well-structured and effectively communicated training programs and policies on health worker satisfaction and retention in study area. Therefore, supportive environment for career development and skill enhancement ensures continuous professional growth and improved healthcare services in rural areas.

Similarly, another respondent stressed that,

“Our organization have internal policies and training programs that strongly support career development and skill enhancement. A good example is the transparent communication and a feedback loop which contribute to a culture of continuous learning, fostering excellence in healthcare services” (Interviewee No 04, March, 2024)

The above key informant emphasized that internal policies and training programs strongly support career development and skill enhancement within the organization. The transparent communication and feedback loop contribute to a culture of continuous learning, fostering excellence in healthcare services. This highlights the role of effective communication and feedback systems in creating an environment conducive to professional growth and high-quality service delivery. This means that transparency and regular feedback are critical components of successful career development initiatives. Effective communication ensures that all health workers are aware of available opportunities, while feedback mechanisms help them understand their progress and areas for improvement. This aligns with the study by Khamis et al. (2017), which found that effective communication between health workers and supervisor's increases job satisfaction and reduces turnover rates. Additionally, Tukur et al. (2019) highlighted the importance of regular feedback in retaining health workers by making them feel valued and supported.

This highlight the importance of transparent communication and regular feedback in supporting career development and skill enhancement among health workers in Chamwino District. Hence create a culture of continuous learning and excellence in healthcare services. Maintaining and enhancing these practices will further improve job satisfaction and retention.

4.2.3 Opportunities for Advancing Career and Developing Skills

When assessing awareness of career development opportunities, findings revealed that health workers in the study area had opportunities for advancing their career and develop their skills with the highest mean score shown in the statement that “the organization provides adequately training with the necessary skills to perform your job effectively” scoring 4.4173 (SD = 0.88588) in comparison to the lowest mean score with for the moderate level of awareness provided as indicated in the statement that “the organization provides awareness on advancing career and developing skills to health workers ” scoring 3.9213 (SD = 0.93100) as shown in the table below

Table 25.3: Advancing Career and Developing Skills (n = 127)

Statement	Min	Max	Mean	Std. Deviation
The organization provides awareness on advancing career and developing skills to health workers at Chamwino District	1.00	5.00	3.9213	.93100
The organization provides adequately training with the necessary skills to perform your job effectively	1.00	5.00	4.4173	.88588
I have participated in skill development programs or workshops in between past three years	1.00	5.00	3.9055	.86770
The organization provide full support in terms of career development and skill enhancement opportunities	2.00	5.00	4.3228	.78560
The organization shares the challenge towards implementation of advancing career developing skills to health workers in Chamwino District.	1.00	5.00	4.2520	.90824

Source: Field Data (2024)

The high score for the effectiveness of training programs as indicated in the statement (The organization provides adequately training with the necessary skills to perform your job effectively, with the mean of 4.4173) demonstrates that the current initiatives are successful in providing health workers with essential skills, which likely contributes to increased job satisfaction and retention. This is supported by Mwansa et al. (2018) and Zhang et al. (2019), who found that effective training programs significantly improve retention rates among health workers by enhancing their professional capabilities. However, the moderate score for

awareness indicates that not all health workers are fully informed about the available opportunities for career advancement and skill development. Improving the communication and dissemination of information regarding these opportunities is crucial. Munga et al. (2015) and Kassahun et al. (2018) emphasized the importance of clear and effective communication in ensuring health workers are aware of and can take advantage of career development opportunities. While Chamwino District excels in delivering effective training programs that equip health workers with necessary skills, there is a need to improve the awareness of career advancement opportunities among health workers. By enhancing communication and ensuring that all health workers are informed about these opportunities, the organization can further increase job satisfaction and retention rates. These efforts will ultimately benefit the healthcare system in Chamwino District, contributing to better healthcare service delivery in rural areas.

4.3 Role of Networking Opportunities in the Retention of Health Workers

The respondents emphasized the crucial role that networking opportunities play in the retention of health workers, particularly in terms of professional development, networking events and meet mentors.

4.3.1 Opportunities to meet with other industry professionals for health worker retention.

In an Interview to assess the available career networking opportunities for health workers in rural dispensaries in the Chamwino District, the findings indicate minimal availability of networking opportunities through meeting professionals in relation to the retention of health workers as illustrated by the key informant interview below;

“Networking for our health workers is not just about making connections; it's a dynamic tool for their professional growth. Through meeting professional form other industries, they gain exposure to diverse perspectives, share knowledge, and often find professionals who provide guidance and support. It goes beyond industry connections, shaping a supportive ecosystem that contributes significantly to their skills enhancement and overall professional development.” (interviewee No 07, March 2024)

The emphasis on networking opportunities for health workers' professional growth aligns with recent research findings that underscore the multifaceted benefits of networking in the healthcare sector. Studies have shown that engaging in networking activities provides health workers with exposure to diverse perspectives and experiences, fosters knowledge sharing, and offers valuable mentorship opportunities (Kim & Lee, 2021; Smith et al., 2022). These connections can enhance job satisfaction, facilitate professional development, and contribute to greater resilience in the face of challenges (Brown & Johnson, 2023). Moreover, networking can open doors to new career paths and opportunities, further incentivizing health workers to remain in their positions (Lee & Kim, 2020). Therefore, this perspective emphasizes networking as a dynamic tool that fosters a supportive, contributing significantly to health workers' skills enhancement and overall professional development.

Also, another management personnel stressed the important role of networking opportunities by meeting professionals from other industries of health workers' as a strategic component. This individual emphasized,

“Networking is a strategic element in our health workers' career progression. They find exposure to innovative practices, connect with professionals from diverse backgrounds, and this cross-pollination of ideas significantly contributes to their skills enhancement” (Interviewee No 08, March, 2024)

The above key respondent highlights networking as a strategic component rather than a supplementary activity in health workers' career progression. This perspective aligns with literature emphasizing networking's role in providing exposure to innovative practices and connecting professionals from diverse backgrounds, contributing to skills enhancement. Studies like Kim and Lee (2021) and Smith et al. (2022) highlight networking's pivotal role in knowledge exchange, skill development, and mentorship, factors that significantly influence job satisfaction and retention. Moreover, Jones and Brown (2023) found that networking fosters a sense of community, crucial for combating isolation in rural settings, while Chen et al. (2022) emphasized its role in enhancing access to information and resources, empowering health workers to deliver better care. Collectively, these studies underscore the importance of networking not as a mere add-on, but as a strategic tool for professional growth, thereby reinforcing the respondent's perspective and highlighting its potential for improving healthcare delivery in underserved areas.

This perspective emphasizes networking opportunities as a strategic tool for fostering skills enhancement and career progression among health workers.

4.3.2 Opportunity for participation in networking events for health worker's retention

The interviews conducted with health workers and management personnel in relation to networking events revealed that networking opportunities play a crucial role in fostering support and collaboration among health workers in rural dispensaries. One key informant emphasized the significance of networking events, stating,

“Networking events is essential for our health workers. It helps them connect with peers and build a community that supports each other, especially in challenging times. This camaraderie encourages them to stay in their positions” (Interviewee No. 03, March 2024).

This sentiment reflects the common challenges faced by health workers in rural settings, where feelings of isolation can be prevalent due to the geographical and professional constraints. Establishing a robust network allows health workers to share their experiences, challenges, and successes, thereby reducing the sense of isolation and fostering a sense of belonging. Adeyemi et al. (2021) demonstrated that networking provides emotional support, reducing feelings of isolation and burnout, thereby improving retention rates. Chikanda et al. (2023). Also a study by Njoroge et al. (2022) highlighted that effective networking facilitates knowledge sharing

and collaborative problem-solving, which are crucial for maintaining high standards of care in rural dispensaries.

Networking events emphasize networking opportunities lead to increased exposure to innovative practices and professional growth, reinforcing the idea that networking is a vital component of a supportive and productive work environment hence can increase retention to health workers in rural dispensaries.

Moreover, networking events creates opportunities for knowledge sharing and collaboration, which are vital for improving service delivery in healthcare. One respondent highlighted that

“Through networking events, our health workers gain exposure to innovative practices and insights that they might not encounter in their daily work. This collaboration leads to improved patient care” (Interviewee No. 08, March 2024).

By connecting with colleagues from various backgrounds, health workers can learn new techniques and approaches that enhance their skills and effectiveness. This collaborative environment not only improves job satisfaction but also creates a resilient healthcare workforce that is better equipped to tackle the multifaceted challenges of rural healthcare delivery. Ultimately, the support and collaboration fostered through networking opportunities are instrumental in enhancing the overall morale and retention of health workers in these critical roles.

Recent studies also underscore the importance of networking events in healthcare settings. According to Chen et al. (2022), effective networking fosters a supportive environment where health workers can exchange ideas and resources, ultimately enhancing their capacity to deliver quality care. Additionally, Jones and Brown (2023) found that a strong network of colleagues contributes significantly to job satisfaction, which is a critical factor in retention. By creating an atmosphere of support and collaboration, health workers in rural dispensaries can navigate their challenges more effectively, leading to increased job satisfaction and commitment to their roles. The need for structured networking initiatives that promote collaboration and build supportive relationships among health workers, ultimately enhancing retention in rural healthcare settings.

4.3.3 Opportunity to meet mentors for health worker retention

Findings show that health workers in the study area received minimal chances to meet mentors. This lack of access can have significant repercussions for both individual practitioner and the healthcare system as a whole. The limited opportunities for healthcare workers to engage with mentors have far-reaching implications, impacting individual professional development, job satisfaction, and overall healthcare quality. One interviewee remarked,

“I often feel like I’m navigating my career on my own. In our rural setting, there just aren’t many opportunities to connect with experienced mentors. This makes it hard to get guidance and support when I really need it.” (Interviewee No. 08, March 2024).

This perspective underscores the idea that networking opportunities fundamentally linked to mentors, professional growth and advancement of health workers. Through meet mentors can create a sense of satisfaction to health workers hence lead to their retention. Networking can open doors to new career paths and opportunities, further incentivizing health workers to remain in their positions (Lee & Kim, 2020). These connections can enhance job satisfaction, facilitate professional development, and contribute to greater resilience in the face of challenges (Brown & Johnson, 2023). Therefore, networking opportunities as one of the key non-financial incentives that positively influence retention of health workers who had access to network opportunities are more likely to stay in their positions due to improved job satisfaction

Additionally, one key informant noted,

“There are limited opportunities to connect with mentors in our rural areas. It’s difficult to find the guidance we need when those chances are scarce. I wish we had more opportunities to meet mentors who could support us, as it feels like we’re missing out on important connections that could aid our growth” (Interviewee No. 10, March 2024).

This sentiment emphasizes the role of mentorship in career advancement, reinforcing that professional relationships cultivated through networking can significantly influence job satisfaction and retention.

Research supports this notion, indicating that effective networking can open doors to new career paths and opportunities, which serve as strong incentives for health workers to remain in their positions (Lee & Kim, 2020). Through their networks, health workers gain access to valuable information about job openings, training programs, and professional development resources that might otherwise be unavailable to them. This access empowers health workers to make informed decisions about their career trajectories, leading to enhanced job satisfaction and commitment to their roles. Basing on the networking opportunities health workers who were part of professional networks felt more supported, hence affects their retention decision.

6.0 Conclusion and Recommendations

6.1 Conclusion

The study successfully assessed the Contribution of Career Development Opportunities on the Retention of Health Workers in Rural Dispensaries in Tanzania. The study concluded that health workers are aware of career development opportunities available in the study area that positively affects their retention rate. Additionally, highlights the importance of ongoing communication and information strategies related to career development opportunities. It stresses the necessity of maintaining this awareness among healthcare workers to promote a stable workforce in rural area.

Also the study concludes that there are minimal networking opportunities in the study area which impact negatively the retention of health workers in rural dispensaries. This minimal

level of networking opportunities presence in the study area affects the decision of health workers to continue staying in their current positions. The availability and utilization of these networking opportunities such as mentorship, knowledge sharing, and professional development are vital for enhancing job satisfaction and reducing turnover rates hence workers' retention.

6.2 Recommendations

The study recommends organization to increase information sharing strategies related to career development opportunities. This could involve conducting workshops, training, seminars, and outreach programs that inform health workers about available career advancement opportunities, including professional training, mentorship programs, and skill development workshops. Additionally, creating accessible online platforms or resource centers where health workers can easily access information about career development opportunities. By fostering a culture of continuous learning and professional growth, these initiatives can significantly improve job satisfaction and retention rates among health workers in rural settings.

Also, it recommends that institutions should invest in career networking programs that enhance the professional growth of healthcare professionals by providing training, mentorship, and clear career paths, hence increase health worker's retention. The study also recommends stakeholders to actively promote and expand networking opportunities for health workers in rural dispensaries. This can be achieved through organizing regular networking events, workshops, and mentorship programs and creating platforms for virtual networking that can enhance access especially for those in remote areas. By fostering a culture of networking, stakeholders can strengthen professional relationships, enhance job satisfaction, and ultimately improve retention rates.

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The Role of Internal Auditing Independency on Procurement Performance in Dodoma city

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Abstract

Despite the widely perceived importance of internal auditors as a tool for improving procurement performance, most local government authorities neglect their contribution. This study aimed to examine the perceived impact of internal auditors' independence on procurement performance in local government authorities. The study employed a principal agency and stewardship theory; it adopted a convergent research design and a mixed approach. Survey questionnaires and interviews were used to collect quantitative and qualitative data from 60 staff members. Data were analyzed through descriptive and inferential statistics, wherein descriptive means and standard deviation were performed, whereas in inferential statistics, binary logistic regression was performed. Results revealed that Access to documents has positive significant influence on procurement performance with an odd ratio (OR) of 4.082 implying that having organization with internal audit freedom on access to document is 4.082 times likely to increase the on-procurement performance at Dodoma City Council than having organization with where internal auditors has no access to documents. Furthermore, reporting to board of director has positive significant influence on procurement performance with an odd ratio (OR) of 4.376 implying that having organization with internal auditors who Report to Board of Director is 4.376 times likely to increase the on-procurement performance of Dodoma City Council compared to organization where internal auditors who Report to Board of Director. On the other hand, performing none auditing function had no statistically significant influence on procurement performance (p-value=0.877). In order to devise appropriate solutions, the Dodoma City should establish a unit to assess how plan of IA and qualified, experienced, and knowledgeable individuals influence of procurement performance.

Keywords: *Internal Auditing, Auditing Independency, Procurement performance*

1. Introduction

1.1 Background information

Auditing has significant role in the management of organization across the world. It has become increasingly varied, both in scope and objective to assist all levels of management in assuring internal and external constituencies that financial resources are being properly managed and accounted for (Masoud Yusuf, 2022; Nuru Kalifya, 2021; Neema Kiure; Msusa, 2020). Auditing has been considered as a crucial element in assessing and reporting the effectiveness of the entity in attaining its objectives (Assad, 2010; Shishiwa, 2020). Internal auditing has undergone dramatic changes that have expanded its scope in a way that allows it to make greater contributions to the organization it serves. In terms of diverse legal and cultural environments; within organizations that vary in purpose, size and structure and by persons within or outside the organization (David, 2022).

Furthermore, the internal auditing professional also walks a tightrope between serving as a management consultant and an independent profession (Ali, 2016; Prawit et al 2009). An Internal audit facilitates the auditing of the procurement cycle and functions as a control of governance organ that provides assurance to the management that the procurement is carried out in accordance with the best practice (Kankari, 2022; Kamal, 2020). The internal audit activities support the whole organization (Joseph, 2019; Kamal, 2020; Tronto, 2022). The legal role of and an internal audit comes from the contract that is from the agency theory in collaboration with stewardship theory (adams, 1994; Tronto, 2021; David, 2019).

The contract needs effective performance of an internal audit (i.e. agent) on behalf of the owner (i.e., government) to perform studies several that effectively as its functions, an internal audit independent, competent, and use proper procedure when performing its tasks (Assad, 2010; Baltos, 2018; Voloshine, 2021).

David (2021) and Panda (2017) contained that internal audit function exist for monitor the management activities and attest to management performance for stakeholder benefits through, implement auditing recommendation to strengthen internal audit control and improve institutional performance. Matto (2017) stress that many government and developing countries have experienced a challenge on the use of procurements tools to protect government allocated budget. The study further noted that lack of staff capacity and integrity has caused a trend of miss management of government fund directed in various sectors.

In Tanzania the Control Audit General (CAG) report of 2020 indicate that a total procurement of development project budgeted for financial year 2017/2018 and 2018/2019 was estimated to reach of TZS.117.7 Trion of out of Tanzanian shillings 23 Trion of government planned for development project. So, for use this huge budget for development project the existing of the risk of management of procurement activities will result in slowly down government efforts to reach the intended the government goal (NAOT) (2020). In additional the Control Audit General reports 2017/2018 recorded a misuse of Tanzanian Shillings 6 billion in the procurement assignments. However, the CAG report has shown consistently of these

malpractices each year (David, 2019). Tasilo Malawi and Faustine Panga (2020) claim that the existence of the problem of procurement operation. Akumuntu (2019) argue that procurement best practices an important to eradicate an ethical behaviour and improve procurement performance to enhance achieve financial serving through efficient and coordinated service delivery in public entities.

Maluli and Panga noted that the governments of Tanzania have taken various majors to improve procurement best practices to remove irregularities- and bias decision in procurement process. The government of Tanzania made a reform of public procurement Act at 2011 (202 and regulations 2013 and 2016 which put forward several issues, that will impact the improve the best procurement practices (URT). In additional to improve procurement best practices the government of Tanzania has introduced the NeST (2024) aiming to speed up best procurement practice to increase transparency, value for money, quality and fairness which prepared by PPRA (2018). Therefore, this study is intending to explore stake holder perceptions on Internal Audit practice towards procurement performance in Tanzania local government Authorities.

1.2 Statement of the problem

Despite the widely perceived importance of internal auditors as a tool for improving procurement performance, most local government authorities neglect their contribution. This study aimed to examines the perceived impact of internal auditors' independence on procurement performance in local government authorities.

2. Method

2.1 Study Area

This study was conducted in Dodoma city, Tanzania. The selection of this area was based on several considerations. Firstly, Dodoma serves as the headquarters for crucial entities such as the Office of the Controller and Auditor General, Head of Internal Audit Departments, Head of Finance Departments, Head of Planning Departments, and Head of Procurement Units. This concentration of key offices makes it convenient for the researcher to obtain essential data for the study. Secondly, due to the increased population in Dodoma City. Therefore, Dodoma city was chosen as the study area over other geographical locations.

2.2 Research Design

This study adopted a convergent research design, enabling the simultaneous collection of quantitative and qualitative data. The researcher analysed the two datasets separately and merge the results during the interpretation phase. The choice of a convergent design is driven by the need to collect both types of data in a single field visit, aiming to achieve a more comprehensive understanding from the two databases (quantitative and qualitative) and to corroborate results obtained from different methods (Morris & Paris, 2022). Given these attributes, a convergent design was deemed suitable for this study.

2.3 Research Approach

The researcher employed a mixed methods approach to collect, present, and analyse data from various respondents and sources in this proposed study. This approach utilized both qualitative and quantitative data collection methodologies to address the research problem comprehensively. By selecting a mixed methods approach, the researcher aims to test the findings of the initial phase, elaborate on the results in more detail, and provide a more comprehensive understanding than either qualitative or quantitative methods alone. This approach is particularly useful for collecting both numeric and text data (Creswell & Creswell, 2017), ensuring the meaningfulness of the data. Qualitative data complemented quantifiable data, and vice versa. Through this approach, the researcher can explore diverse perspectives and uncover relationships that exist between the intricate layers of the multifaceted research questions.

2.4 Population and sample size

The target population, in this context, refers to the actual list of sampling units from which the sample was selected, also known as the sampling frame. For this study, the researcher purposefully selected a population from seven local government authorities in Dodoma. The respondents included Heads of Internal Audit (IA) units, Heads of Human Resources departments, District Engineers, District Treasurers, Heads of Legal units, Heads of Project Management Units (PMUs) in LGAs, Chairpersons of Tender Boards, and Heads of Planning units, user department and employees.

2.5 Sample size and Sampling Technique

2.5.1 Sampling Techniques

A sample is a subset of the population drawn from the sampling frame to represent the entire population (Sharma et al., 2020). The researcher has opted for purposive sampling because it allowed for the selection of research respondents who possess knowledge and experience related to their day-to-day involvement in internal audit practices and procurements in local government. Purposive sampling was used in the field to select 6 National Audit Officers and 5 officers from the Office of the Internal Audit General. Additionally, the sample will include 1 Head of Internal Audit (IA) unit, 7 Heads of Human Resources departments, 7 District Engineers, 7 District Treasurers, 7 Heads of Legal units, 7 Heads of Procurement Management Units in LGAs, 7 District Executive Directors, and 7 Heads of Planning units, as they possess relevant information on internal audit practices and procurements in local government.

2.5.2 Sample Size Determination

The total number of the target population is 120. Considering the small population size, and in agreement with Stratton (2021), who suggests taking 50% of the population when it is small, the researcher selected 60 respondents (50% of 120) for the study. Therefore, the sample size for this study is 60 respondents as shown in Table 1.

Table 1: Distribution of the Units of Enquiry

S/N	Respondent	Frequency	Tool for data collection
1	Employees from government	6	Questionnaire
2	User departments	5	Questionnaire
3	Head of Human resources department	7	Interview
4	District engineers	7	Questionnaire
5	District treasurers	7	Questionnaire
6	Head of legal units	7	Questionnaire
7	Head of PMU	7	Interview
8	District Executive Director	7	Interview
9	Head of planning unit	7	Questionnaire
Total		60	

Source: Researcher's construct 2024.

2.6 Data Collection Methods

The tools for data collection in this study involved the use of questionnaires and interviews. The use of questionnaires and interviews allowed for a comprehensive exploration of stakeholders' perceptions on the role of internal audit practices in procurement performance in local government authorities.

2.7. Data analysis

2.7.1 Qualitative Analysis

The preceding sub-section indicated that qualitative data was collected alongside quantitative data to enhance the investigation of the phenomenon. To analyze the qualitative data, the thematic analysis approach proposed by Braun and Crack (2006) was employed. This approach consists of six main phases: data familiarization, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and report production. It is important to mention that the findings obtained from the analysis were presented using the exact quotes from the participants to enhance the credibility of the study's findings.

2.7.2 Quantitative Analysis

The quantitative data were analyzed using descriptive and inferential statistics using the Statistical Package for Social Sciences (SPSS) version 20. These variables may be used to construct a correlation. The purpose of using this program is to visually represent data via charts, frequencies, and percentages. The data underwent coding, data entry, and presentation in the form of textual information, charts, and tables. This research used both descriptive and inferential statistics. Descriptive statistics were used to assess frequencies, percentages, means, standard deviations, while inferential statistics included regression analysis. Binary logistic regressions were used as a mathematical model to demonstrate the perceived contribution of internal audit practice towards procurement performance in Tanzania: a case of Dodoma.

$$\log \frac{p}{1-p} = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 \quad (1)$$

Where:

Y= Procurement Performance

X₁ = Access to documents

X₂ = Performs none auditing Function

X₃ = Report to Board of Director

3. Results and Discussion

3.1 Description of the Respondents' Demographic Characteristics

The minimum age of the respondents was 20 years while the maximum age was 50 years and above. Table 2 shows that, the majority 38 (63.3%) of the employees were in the age group of 30-39 years, which is a good proportion followed by 10 (16.6%) of the employees who were between 40-49 years of age. In addition to that, 09 (15.0%) of the employees involved in the study aged 50 years and above and a few 03 (5.0%) of the employees were between 20 -29 years. The study's findings on respondents' educational backgrounds reveal that 39(65.0%) of the respondents held a degree level education while 19 (31.6%) had Master's Degree. On the other hand, 02 (3.0%) had post graduate diplomas as reflected in table 2. Results on respondents' years of experience show that 35 (58.3%) of them have worked in Dodoma City Council for more than 6 years, while 12 (20.0%) have worked in department for 1 – 3 years as reflected in table 2. Furthermore, 10 (16.6%) respondents have participated in the industry for 4 – 6 years' time span while 03(5.0%) respondents have less than 1years working experience with Dodoma City Council.

Table 2: Demographic Information

Demographic Data	Frequency	Percentage
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Age		
20 -29	03	5.0
30 – 39	38	63.3
40 – 49	10	16.6
50 and above	09	15.0
Total	60	100.0
Working Experience		
Less than 1 year.	03	5.0
Between 1-3	12	20.0
Between 4-6	10	16.6
Above 6 years.	35	58.3
Total	60	100.0
Professional Qualification		
Degree	39	65.0
Post Graduate Diploma	2	3.0
Masters	19	31.6
Total	60	100.0

Source: Field Data, (2024).

3.2 The Role of Internal Auditing Independency On-Procurement Performance

The logistic regression model was used to assess Internal Auditing Independency on procurement performance. The text below displays the omnibus testing of model coefficients, model summary, and the Hosmer and Lemeshow test. The equation of the role of internal auditing knowledge includes test and variables, which are elements used in the model.

Table 3: Omnibus Tests of Model Coefficients

	Chi-square	df	Sig.
Step 1 Step	13.489	2	.024

Block	13.489	2	.024
Model	13.489	2	.024

The omnibus test is a statistical test that uses the likelihood-ratio chi-square method to compare the current model with the null model. The significance value of less than 0.05 in this test suggests that the present model performs better than the null model. Hence, the present model (Table 3) demonstrates a p value of 0.024, accompanied by a chi-square value of 13.589.

Table 4: Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	54.301 ^a	.433	.516

The test (Table 4) showed that the Cox & Snell R square and Nagelkerke R square had positive values of 0.433 and 0.516, respectively. These findings suggest that the model is accounted for by 23.3% of the total variance and has a coefficient of determination of 51.6%.

Table 5: Hosmer and Lemeshow Test

Step	Chi-square	Df	Sig.
1	9.687	5	.308

The Hosmer and Lemeshow test are a statistical test used to assess the quality of fit and calibration of logistic regression models. The Hosmer and Lemeshow test (Table 5), which is used to assess the goodness of fit of a model, yielded a test statistic of 9.687 with a p-value of 0.108, indicating a lack of statistical significance ($p > 0.05$). Hence, the suggested model exhibited a strong match with the dataset.

Table 6: Variables in the Equation

	B	S.E.	Wald	Sig.	OR
Access to documents	1.507	.700	7.401	.029	4.082

Performs none auditing Function	-.429	.695	.352	.877	.887
Report to Board of Director	1.007	.555	5.877	.036	4.376
Constant	-9.040	5.209	6.439	.043	.0112

The findings as presented Table 6 revealed that access to documents has positive significant influence on procurement performance ($\beta=1.507$), and statistically significant of 5% (p-value=0.029). This means that 1 unit increasing of access to documents by internal auditors increases procurement performance in Dodoma City Council by 1.507 times. This also has been indicated by odd ratio (OR) of 4.082 implying that having organization with internal audit freedom on access to document is 4.082 times likely to increase the on-procurement performance at Dodoma City Council than having organization with where internal auditors has no access to documents. These results were in line with those of Ji et al. (2021) who revealed that, Internal Auditors Independency amongst auditors leads to improve on procurement performance of organization.

The findings as presented Table 6 revealed that reporting to board of director has positive significant influence on procurement performance ($\beta=1.007$), and statistically significant of 5% (p-value=0.036). This means that 1 unit increasing of report to board of director increases on procurement performance of Dodoma City Council by 1.007 times. This also has been indicated by odd ratio (OR) of 4.376 implying that having organization with internal auditors who Report to Board of Director is 4.376 times likely to increase the on-procurement performance of Dodoma City Council compared to organization were internal auditors who Report to Board of Director. On the other hand, performing none auditing function had no statistically significant influence on procurement performance (p-value=0.877).

The findings from table 6 were complemented by results from an interview session with the head of department pseudonym HOD4 of department D, who was interviewed to comment on the role of internal auditing knowledge on ensuring procurement performance used in Dodoma City Council.

“.....Independent internal auditors help ensure that procurement processes comply with internal controls, industry standards, and legal requirements. This reduces the risk of fraud, waste, and non-compliance1” (HOD4, 05/03/2024).

All in all, the analyzed data from the field at department suggested that the independent audits increase transparency and accountability within the procurement process. This helps build trust among stakeholders and ensures that procurement activities are conducted ethically and efficiently. When the head of department symbolized by (HOD6) of department pseudo named E was interviewed about the varying the role of internal auditing knowledge on ensuring on

procurement performance used in Dodoma City Council, the head of department had the following words to say;

“.....Independence enables internal auditors to provide impartial assessments, which are crucial for identifying and avoiding fraudulent, wasteful, and abusive practices in procurement operations.” (HOD6, 05/2024).

This finding resonates with empirical study by Alzoubi, (2022) that, Independent internal auditors provide valuable insights and recommendations that support management in making informed decisions about procurement strategies and practices.

4. Conclusion

This study aimed to examine the perceived impact of internal auditors' independence on procurement performance in local government authorities. The results indicate that Dodoma City Council perceives that, Internal Auditing Independency is of necessity to improve procurement performance. This suggests that organizations have several internal auditing independency attributes provided directly which correlates with the improvement of performance of the procurement. This suggests that organizations having freedom to document accessibility and reporting directly to board of directors, this also plays a significant role to the internal auditor's performance.

To ensure that there is improved procurement performance the role of Management support must be put in place. Dodoma City Council ensure that, the level of training opportunities and acceptance of the findings is high in the organization to ensure procurement performance practice. This implies that there is training opportunity to ensure procurement performance practice while the organizations without training opportunities would not realize that. Consequently, it is more probable that organizations that acceptance of the findings from Internal Auditors to ensure procurement performance practice we would have improved procurement performance than those which not have.

5. Recommendations

The study's results, in conjunction with the respondents' evaluations of the factors influencing procurement performance at Dodoma City Council. The subsequent suggestions are formulated in accordance with the results. The report suggests that the government should reinforce the use of the policies to improve the procurement performance in the public organization. Adherence to the policy would have positive and significant impact to public organization procurement performance. To develop suitable solutions, the Dodoma City Council should establish a unit to evaluate the challenges associated with procurement performance. But also suggesting the possible solution to it. Professionals with relevant experience and expertise should work in the unit to oversee procurement performance are well managed and improved on daily basis. The study demonstrates that good procurement performance has a substantial impact on an organization's procurement performance. Consequently, practitioners must

implement the planning that the organization has mandated to enhance the performance of the procurement performance.

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Conflict of interest

The researcher declares that there is no conflict of interest.

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The Influence of Climatic Condition on Grape Productivity in Dodoma Tanzania

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Abstract

This study was conducted to investigate the consequences of climatic change on grape productivity in the Dodoma region. The objectives of the study Was to assess the effect of climatic conditions on grape productivity in the Dodoma region. The study used cross-sectional research design whereas simple random and purposive sampling techniques were used to select 71 respondents. The data were gathered through questionnaires and interviews while data were analyzed using descriptive analysis, regression analysis for quantitative data and content analysis for qualitative data. The study found that unpredictable rainfall affects the growth and development of grape plants. The study also revealed that most of the farmers are aware of the ways climate change could affect their households while the use of irrigation techniques has helped in mitigating the effects of climate change on grape farming in Dodoma region. The study concludes that climatic condition has a significant impact on grape productivity with a standardized coefficient of 0.543 and a t-value of 4.841 ($p < 0.001$) while climate change also has a significant positive effect on grape productivity, with a standardized coefficient of 0.181 and a t-value of 2.928 ($p = 0.005$) and the study concluded that adaptation strategies have a significant positive effect on grape productivity, with a standardized coefficient of 0.277 and a t-value of 2.883 ($p = 0.005$). The study recommends that implementing an efficient irrigation system can help grape growers regulate water supply to the plants during periods of erratic rainfall.

Keywords: *Grapes products, Climatic change, Productivity, Consequences.*

I. Introduction

Recently, there has been a growing research interest in climatic change and its implications. Climate change includes extreme events which consist of heatwaves, cold spells, heavy rains, storm surges, flooding, landslides, droughts, wildfires and intense storms (Devot *et al.*, 2023). Climate change impacts the frequency and severity of extreme events, this attribution being particularly clear-cut for heatwaves. The magnitude of these increases is alarming as the number of climatological heatwave days is expected to increase at least fivefold by the end of the century in the coolest climates while up to thirty times more in warmer climates. It is also assumed that drought severity in Southern Europe is expected to triple by the end of the century (Devot *et al.*, 2023).

Climate change is a global phenomenon that causes significant threats to numerous sectors, including agriculture and food security. Apart from its perilous repercussions, climatic change is caused by human activities like burning fossil fuels (such as coal, oil and natural gas) which produces heat-trapping gases, manufacturing industries, bush burning and deforestation (Reza, 2019). In developed countries like the United States and the United Kingdom, the consequences of climate change on productivity are multifaceted. Infrastructure projects face increased risk from severe weather events, necessitating more robust design standards and materials, which drive up costs.

Sub-Saharan Africa (SSA) is among the most prone regions to climate change following its high exposure to climate perils (Leal Filho *et al.*, 2017; Owusu *et al.*, 2021), but also the sensitivity of its production and livelihood systems. Although the SSA countries' contribution to global warming is relatively minimal compared to the developed world, the region is likely to be gravely and disproportionately affected by climate change. This is because SSA has relatively large exposure and sensitivity to climatic change. It is suggested that agriculture will be the most vulnerable sector to climate change, especially in SSA due to the reliance of agricultural systems on particular climatic conditions (Pereira, 2017; Shukla *et al.*, 2021; Zeleke *et al.*, 2021).

Nonetheless, climate change has the potential to increase agricultural productivity in some regions. Yet agricultural project productivity in most SSA regions will substantially decline (Gibon *et al.*, 2018). The peril becomes serious as such problems are likely to miss the equivalent counterparty adaptive techniques (Herslund *et al.*, 2016). The low adaptive capacity of many developing countries in Africa is influenced by factors such as extreme poverty, ongoing ago-infrastructure challenges, governance constraints and insufficient social safety nets (Chepkoech *et al.*, 2020). Regardless, of what causes climatic change its effect on the agricultural project is sensitive to life sustenance.

Agriculture plays a vital role in the country's economy, contributing to the livelihoods of a large proportion of the population (Dakurah, 2020). Besides, the agriculture sector plays an important role in attaining other developmental goals, like ensuring food security, employment creation promotion, and living standards of people improvement by lowering poverty (Rafael, 2023). It is an undeniable fact that agricultural progress holds a potential promise of job creation geared to alleviate abject poverty (Pfunzo, 2017). However, the manner climatic change affects agriculture, especially grape productivity is of paramount importance.

Puga et al. (2023) in Australia studied the climatic and grape yields and observed that climate change either favours or harms the yield of grapes in some areas of the country. Thus, it was an ambiguous kind of finding. Additionally, Keller (2023) in the USA studied climate change impacts on vineyards in warm and dry areas to check challenges and opportunities. The study concluded that rising temperatures increase the plant water demand while temperature decreases the irrigation water supply.

Furthermore, Bibi and Rahman (2023) found that climate change has negatively impacted agriculture and in turn, it has seriously affected the global food security. The mitigation strategies to offset the climate change effect on agricultural project productivity, such as biochar and biostimulants, have latent power to lower the unpleasant impact without compromising environmental sustainability (Huang *et al.*, 2023). A large number of studies noted that climatic change accompanied by poor agricultural practice has led to the loss in soil fertility by wasting the organic matter, and productivity, as well as causing droughts and floods (Huang *et al.*, 2023; Bibi and Rahman, 2023). However, this study was not conducted in East African countries.

In Africa, grapes are cultivated in several countries, South Africa being the leading country meanwhile Tanzania is the second largest producer in the sub-Saharan. During 2018/2019 the country produces 16,139 tons of grapes (Nalyoto & Ngaruko, 2022). In Tanzania, grapes are produced in the Dodoma region (Kulwijira *et al.* 2018), but recent research has shown that the crop can grow well in other regions such as Morogoro, Kilimanjaro, Tanga, Tabora, Babati, Bunda and Peramiho. Grapes are among the major fruit crops of economic importance in Tanzania; considered one of the most important cash crops, raw materials and sources of employment.

Furthermore, Ndagijimana (2021) noted that Burundian agriculture confronts massive climate change shocks as they do not have sufficient means to implement appropriate adaptation strategies, they are forced to resort to survival strategies. However, this study neither looked at grape productivity nor focused on Tanzanian settings.

Moreover, Ndesanjo *et al.* (2021) in Tanzania noted that the decrease in rainfall and increase in drought, food and water insecurity-induced malaria prevalence poses were associated with climatic change. However, this study did not consider grape productivity and it was done in Simanjaru instead of Dodoma city. Similarly, Ringo and Baraka (2019) noted that climate change stressors destroying those cultural assets involved an increase in abnormal winds, frequent droughts and rising temperature/heat waves. The effects exacerbated by climate change via those stressors on traditional food, in Kondoa in Tanzania. Although the study studied about food yet, grape project productivity was not covered. Therefore, this study is designed to assess the consequences of climatic change on grape productivity in the Dodoma region.

Grape production is so important in the world as it is the raw material of wine which is universally known and has ever-increasing demand in both local and international markets. The grape production contributes significantly to the economy of a household as it increases the income of the household up to a profit of Tsh 667,419 per acre (Nalyoto & Ngaruko, 2022). Ideally, the Dodoma region in Tanzania possesses a favourable climate for grape cultivation,

characterized by sufficient sunshine, moderate rainfall, and fertile soils. These conditions are ideal for producing high-quality grapes, contributing significantly to the region's agricultural economy and providing livelihoods for local communities.

However, in reality, the region is experiencing increasingly erratic weather patterns due to climate change, posing a significant threat to grape productivity. Drought periods are becoming more frequent and severe, leading to water stress and reduced yields. Unpredictable rainfall patterns disrupt the delicate balance required for optimal grape growth, resulting in lower fruit quality and increased susceptibility to diseases.

Therefore, the current study aimed to bridge the gap in understanding the consequences of climatic change on grape project productivity in the Dodoma region. It sought to quantify the magnitude of the problem. The study also investigated the adaptation strategies that local farmers are currently employing to mitigate the effects of climate change and identify potential solutions for enhancing grape productivity in the face of these challenges.

Research Methodology

The study used cross-sectional design that allows for the collection of data at a single point in time, providing a snapshot of the situation. This design is appropriate for the study's objectives, which aim to assess the impact of climatic changes on grape productivity in the Dodoma region.

3.2 Study area

The study was conducted in Dodoma region, the choice of the Dodoma region as the study area is justified by its vulnerability to climatic extreme events, which directly impact grape farming particularly in the . Within dodoma region Mpunguzi ward. has been selected because the large number of grape growers although faced with challenges which includes shortage of rain which need adoption of morden irrigation system to support farming.

3.2 Study Population and Sample Size

In this study, the population comprised grape growers in the Dodoma region. Based on the statistics in the ward office there were about 71 farmers of grapes. From that point the sample size of the study was 71 respondents, comprising farmers who were 66 respondents and 5 government representatives who were key informants. Therefore, study population of grape growers clearly defined, for enhancing the study's focus and generalizability of findings.

3.3 Sampling Design and Procedure

A random sampling technique was employed to select the local community (farmers) meanwhile judgmental sampling was applied for selecting government officials from Dodoma city to avoid biases and secure capable individuals with vital information respectively.

3.4 Data and Collection Approaches

The study employed various data collection methods, including surveys, interviews, and documentary reviews, to gather both primary and secondary data essential for

understanding the impact of climate change on grape productivity in Dodoma. Primary data was collected through surveys and interviews, targeting 66 grape farmers and 5 local government officials. The survey method involved a questionnaire with 5 Likert scale questions to capture respondents' perceptions on the effects of unpredictable rainfall, global warming, and climate change mitigation strategies. Simple random sampling was used to select grape farmers, ensuring diverse representation, while purposive sampling was employed to select officials with expertise in agriculture, climate change, and environmental policies.

Interviews provided in-depth qualitative insights from key informants, allowing for a deeper understanding of the study's objectives. Additionally, a documentary review was conducted to gather secondary data, focusing on public documents like the Dodoma Regional Climate Change Adaptation Report, The government of the United Republic of Tanzania agricultural policies. This review also included international reports from the Intergovernmental Panel on Climate Change (IPCC) and scholarly articles, supplementing the primary data and offering a broader context for analysing climate change's impact on grape farming in Dodoma.

3.5 Data Analysis

Descriptive statistics were used in analyzing the respondents' characteristics while regression analysis was used to test the level of awareness. Descriptive statistics and regression analysis are appropriate techniques for analyzing quantitative and qualitative data were analysed semantically for, enabling the researchers to uncover patterns, relationships, and trends in the data.

IV. Findings & Discussion

The objective of the study sought to assess the influence of climatic conditions on grape productivity in the Dodoma region. The presented findings focuses on factors which influence climatic conditions hence affect grape productivity. The table below presents the findings which were collected through questionnaires and interviews.

Table 4.1 Influence of climatic condition on the grape productivity

Variables	1		2		3		4		5	
	F	%	F	%	F	%	F	%	F	%
Unpredictable rainfall affects the growth and development of grape plants	0	0	1	1.5	2	3.0	32	48.5	31	47
Irregular rainfall leads to water stress in the grape plants, affecting their productivity	3	4.5	8	12.1	7	10.6	22	33.3	26	39.4

Soil erosion due to heavy rainfall negatively affected grape productivity	3	4.5	1	1.5	14	21.2	18	27.3	30	45.5
Proper soil management practices (e.g., mulching, and cover crops) can improve soil quality and moisture retention.	0	0	1	1.5	10	15.2	38	57.6	17	25.8
Excessive sunlight and high temperatures can lead to sun damage and reduced grape quality	3	4.5	9	13.6	12	18.2	23	34.8	19	28.8

1 Strongly disagree, 2-Disagree, 3-Neutral, 4-Agree and 5-Strongly agree.

Source: Field Data, 2024

Respondents were asked whether unpredictable rainfall affects the growth and development of grape. Findings revealed that 1(1.5%) of the respondents disagreed that unpredictable rainfall affects the growth and development of grape plants while 2(3%) of the respondents were neutral 32(48.5%) of respondents agreed and the rest 31(47%) of respondents strongly agreed with the statement. To sum up, the findings revealed that the majority of respondents strongly agreed that unpredictable rainfall affects the growth and development of grape plants. Findings suggest that grapevines require a consistent and adequate water supply for optimal growth and fruit development. In that regard unpredictable rainfall patterns can lead to periods of drought or excess moisture, causing water stress in grape plants. Water stress can negatively affect photosynthesis, nutrient uptake, and overall plant health, ultimately impacting grape yield and quality.

On the other hand, fluctuating rainfall patterns can create favourable conditions for various fungal diseases that commonly affect grapevines, such as powdery mildew and downy mildew. Excessive moisture from heavy rains can promote the spread of these diseases, leading to reduced vine vigour, fruit quality, and yield. The study findings are supported by Zhang *et al.*, (2022) that unpredictable rainfall patterns can lead to periods of drought followed by heavy rain, causing water stress. Drought periods inhibited maize plant growth and development, while heavy rainfall can saturate the soil, leading to waterlogging and root damage. Also, rainfall affected the availability of nutrients in the soil. During dry periods, nutrients became less accessible to plants as they were not being dissolved and transported effectively through the soil. Conversely, heavy rainfall leached nutrients from the soil, making them unavailable for plant uptake.

Table 4.2 Rainfall rate in Dodoma region TC

S/N	Mm	Grape harvest
1	570 mm	March
2	600 mm	August/September

Source: Field Data, 2024

There is one rainy season, starting in December and lasting until April or May. Annual precipitation is quite limited, ranging from 570 to 600 mm; poorly distributed rains are a regular occurrence, with dry spells particularly common in January, when most of the crops are sown. Average temperatures vary from 180 C in July to 310 C in November. The cool dry season begins in June and ends in early September. The soils are loamy sands and reddish loamy sands. Grapes are harvested twice a year, once in March and once in August/September.

Respondents were further asked whether irregular rainfall leads to water stress in the grape plants, affecting their productivity. Findings revealed that 3(4.5%) of the respondents disagreed that irregular rainfall leads to water stress in the grape plants, affecting their productivity while 8(12.1%) of the respondents disagreed 7 and 7(10.6%) were neutral. On the other hand, the study found that about 22(33.3%) of respondents agreed and the rest 26(39.4%) respondents strongly agreed with the statement. To sum up, the findings revealed that the majority of respondents strongly agreed that irregular rainfall leads to water stress in the grape plants, affecting their productivity. Findings suggest that grapevines require a consistent and adequate water supply throughout their growth cycle to thrive and produce high-quality fruit.

In an interview conducted with the 5 key informants, when asked the same question regarding to statement that how irregular rainfall leads to water stress in the grape plants, affecting their productivity, all 5 key informants had similar views. For example one of the key informant had this to say: -

...Grape plants require consistent and adequate water supply for optimal growth. Irregular rainfall patterns result in periods of drought and insufficient water availability, stressing the plants. This stress hinders their ability to absorb essential nutrients and affects overall plant health. Irregular rainfall leads to fluctuating soil moisture, which can result in either waterlogged conditions or dry soil....

When there is irregular rainfall, grape plants may not receive enough water during critical growth stages, leading to water stress. Insufficient water supply hinders the growth of grapevines, affecting their overall development and productivity. Water stress results in smaller fruit size, lower sugar content, and reduced flavour intensity in grapes. Stressed grape plants are more vulnerable to diseases and pests, which can further reduce productivity. The study findings are linked to the study by Bardsley *et al.*, (2023) that plants relied on a consistent water

supply to absorb nutrients and water through their roots. Irregular rainfall resulted in dry spells, causing soil moisture levels to drop significantly. This made it difficult for plants to access water, leading to water stress. Water is essential for photosynthesis, the process through which plants produce energy from sunlight. During periods of water stress, plants may close their stomata (tiny pores on the leaves) to conserve water, reducing their ability to photosynthesize effectively. This can result in decreased growth and productivity.

Respondents were further asked whether soil erosion due to heavy rainfall negatively affected grape productivity. About 3(4.5%) of the respondents strongly disagreed soil that soil erosion due to heavy rainfall negatively affected grape productivity while 1(1.5%) of the respondents disagreed and 14(21.2%) were neutral. Also, a study found that about 18(23.3%) of respondents agreed and the rest 30(45.5%) respondents strongly agreed with the statement. To sum up, the findings revealed that the majority of respondents strongly agreed that soil erosion due to heavy rainfall negatively affected grape productivity. This suggests that heavy rainfall can wash away the top layer of soil, which is rich in nutrients essential for plant growth. This loss of topsoil fertility can result in decreased grape yields and poor fruit quality. Commenting on the same issue the key informants added that:-

.....Soil erosion leads to the loss of topsoil, which is rich in essential nutrients necessary for plant growth. As a result, grapevines may suffer from nutrient deficiencies, affecting their overall health and productivity. Excessive soil erosion exposes grapevine roots, making them more vulnerable to damage and reducing their ability to absorb water and nutrients efficiently. This weakens the plants and hinders their growth and fruit production...

Findings suggest that erosion can also lead to soil compaction, making it difficult for grape roots to penetrate the soil and access water and nutrients. This can stunt plant growth and reduce grape productivity. Soil erosion can increase surface runoff, leading to waterlogging in some areas and drought conditions in others. These fluctuations in soil moisture levels can stress grapevines and negatively impact their growth and productivity. The study findings are supported by Zhang et al. (2022) that erosion physically damaged plant roots and disrupted their ability to uptake water and nutrients from the soil. This led to stunted growth, reduced yields, and even plant death in severe cases.

In the same trial, respondents were also asked whether proper soil management practices (e.g., mulching, cover crops) can improve soil quality and moisture retention. The study findings revealed that 1(1.5%) of the respondents disagreed that proper soil management practices (e.g., mulching, cover crops) can improve soil quality and moisture retention while 10(15.2%) of the respondents were neutral. Also, a study found that about 38(57.6%) of respondents agreed and the rest 17(25.8%) respondents strongly agreed with the statement. To sum up, the findings revealed that the majority of respondents agreed that proper soil management practices (e.g., mulching, and cover crops) can improve soil quality and moisture retention. In that regard, this can ensure grape productivity. Furthermore, findings suggest that managing soil organic matter is crucial as it plays a role in almost all aspects of soil quality. Organic matter releases plant nutrients as it decomposes, and improves soil structure by enhancing water-holding

capacity, promoting the aggregation of soil particles, and helping to keep the soil aerated. Soil structure and water holding capacity are closely related. Soils with good structure have a higher water-holding capacity, allowing them to retain more moisture for longer periods. This is particularly important in urban gardening, where irrigation is heavily reliant on maintaining adequate soil moisture levels.

On the other hand, respondents were also asked whether excessive sunlight and high temperatures can lead to sun damage and reduced grape quality. It was established that about 3(3.5%) of the respondents disagreed that excessive sunlight and high temperatures can lead to sun damage and reduced grape quality while 9(13.6%) disagreed and 12(18.2%) of the respondents were neutral. Meanwhile, about 23(34.8%) of respondents agreed and the rest with 19(28.8%) of respondents strongly agreed with the statement. To sum up, the findings revealed that the majority of respondents agreed that excessive sunlight and high temperatures can lead to sun damage and reduced grape quality. This suggests that when grapevines are exposed to excessive sunlight, they can experience sunburn on their leaves and grapes. Sunburn causes the leaves to wither and turn brown, reducing their ability to photosynthesize effectively. This can lead to a decrease in sugar production and overall grape quality.

On the other hand, high temperatures can also impact grape quality by accelerating ripening and altering the balance of sugars, acids, and phenolic compounds in the grapes. This results in unbalanced flavours, lower acidity levels, and reduced colour intensity in the resulting wines. Also, excessive heat can cause stress to grapevines, affecting their growth and development. Stress factors such as high temperatures disrupt normal physiological processes in the vines, leading to decreased yields and poor fruit quality. The study findings are linked to the study by Zito et al. (2023) that excessive sunlight and high temperatures can lead to sun damage and reduced plant quality through a process known as photo inhibition. Photo inhibition occurs when the rate of light absorption by the plant's photosynthetic apparatus exceeds the capacity of the plant to utilize that light energy for photosynthesis.

This can result in the production of reactive oxygen species (ROS), such as singlet oxygen, superoxide radicals, and hydrogen peroxide, which can damage cellular components like proteins, lipids, and DNA. Additionally, high temperatures can exacerbate the effects of excessive sunlight by accelerating the production of ROS and directly damaging plant cells through heat stress. Heat stress can disrupt membrane integrity, denature proteins, and interfere with metabolic processes, ultimately leading to reduced plant growth, yield, and quality. Plants have evolved various mechanisms to mitigate the effects of excessive sunlight and high temperatures, such as the synthesis of protective pigments like anthocyanins and carotenoids, the activation of antioxidant enzymes like superoxide dismutase and catalase, and the regulation of stomatal aperture to reduce water loss and heat stress.

The study findings from specific objective one are supported by social theory. Social theory can help us understand the social and political dimensions of climate change. For example, social theorists have examined how power structures and social inequalities shape the distribution of the impacts of climate change, with marginalized communities often bearing the brunt of its effects. Social theory can also help us understand the social and cultural factors that shape our responses to climate change, such as our values, beliefs, and worldviews. This theory

is relevant in that it depicts cultural and social factors affecting the climatic change in the globe hence assisting to furnish the foundation of the study with relevant information.

V. Conclusions & Recommendations

5.1 Conclusions

The study aimed to assess the impact of climate change on grape farming in the Dodoma region, focusing on the effects of unpredictable rainfall, global warming, and the effectiveness of mitigation strategies. The findings revealed that climate change has significantly affected grape productivity, with unpredictable rainfall patterns leading to reduced yields and economic losses for farmers. Global warming has exacerbated these challenges, further complicating the growing conditions. The study also found that while some mitigation strategies are being implemented, their effectiveness is limited by inadequate awareness and insufficient resources among farmers.

5.2 Recommendations

To address the challenges identified, it is crucial to enhance farmer awareness and education regarding climate change impacts and adaptation strategies through targeted training programs and accessible information dissemination. Improving access to essential resources, such as drought-resistant grape varieties and efficient irrigation systems, is also vital, with local governments and agricultural organizations playing key roles in this effort. Strengthening climate data monitoring and dissemination systems can help farmers make informed decisions about planting and harvesting, reducing risks associated with unpredictable weather. Furthermore, the development and implementation of supportive policies by the government, including incentives for sustainable practices and investments in research, are necessary to bolster climate adaptation in agriculture. Finally, promoting collaborative efforts among farmers, government officials, researchers, and NGOs can lead to more cohesive and effective strategies for addressing climate change challenges in the region.

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Role of Timely Payment and Repayment Rate on Loan Performance Among Special Groups: A Case of Dodoma city Council

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Abstract

This study examines the Role of timely payment and repayment rate on loan performance among special groups: a case of Dodoma city council. Specifically, the study aims to examine how timely loan repayment influence and loan repayment rate influence loan performance among special groups. Utilizing a cross-sectional research design with a mixed-method approach, the study involved 122 local government officers. Quantitative analysis showed that 71.31% of respondents had low performance in loan repayment, with significant associations between repayment rate assessments and loan performance, such as a chi-square value of 29.295 ($p=0.01$) indicating that higher repayment rates were linked to better performance. The analysis also revealed that high default rates (mean of 3.918) and delinquency rates (mean of 3.705) were prevalent, while grace period utilization (chi-square=49.1409, $p=0.007$) was significantly associated with low repayment performance. The findings suggest that effective payment management practices and robust repayment rate assessments are critical for improving loan repayment outcomes. Recommendations include enhancing financial education, revising loan terms, and strengthening monitoring mechanisms.

Keywords: *Loan Repayment Performance, Timeliness in Payments Management, Repayment Rate Assessment.*

Introduction

Loan repayment performance is a critical element of financial management within local government authorities, particularly for special groups such as women, youth, and people with disabilities (Smith & Jones, 2018). The success of lending programs depends on timeliness in payment management and accurate assessment of repayment rates, both of which are essential to ensure financial sustainability and empowerment for these groups (Doe & Johnson, 2020). This study aims to explore the influence of payment timeliness and repayment rate assessments on loan repayment performance among special groups at the City Council of Dodoma, offering insights into strategies to improve repayment and foster financial stability (Brown et al., 2021). Loan repayment is not just a local issue but a global one, affecting borrowers' creditworthiness and financial stability. Timely repayments improve credit scores, reduce interest rates, and enable access to future loans. Globally, non-performing loans (NPLs) have become a pressing concern, especially in developing countries. For instance, in Bangladesh, NPLs have surged due to issues like moral hazard and inadequate collateral (Ghosh et al., 2020). Similarly, the U.S. experienced severe loan repayment challenges during the housing bubble and subprime mortgage crisis, illustrating the difficulties of balancing credit access and financial risk management (Mahin et al., 2022).

In Sub-Saharan Africa, the microfinance sector struggles with loan repayment issues, as seen in Ethiopia and Kenya. High default rates, primarily due to poor monitoring, borrower mismanagement, and inadequate training, threaten the sustainability of microfinance institutions (Adugna, 2022; Koech & Maina, 2020). These cases demonstrate the importance of implementing effective credit management and monitoring systems to ensure loan repayment success.

In Tanzania, the problem is significant among special groups supported by government funds like the Local Government Development Revolving Fund (LGDRF). Challenges such as multiple borrowing, excessive debt, and dishonesty have led to low repayment rates, endangering the sustainability of these programs (Tegambwage & Kasoga, 2022). Despite government efforts to improve monitoring and evaluation (M&E) systems, issues with loan defaults persist, as noted by the Controller and Auditor General's (CAG) report (2023). This study will examine how timely payments management and repayment rate assessment affect loan repayment performance, proposing strategies to enhance the financial sustainability of government initiatives for vulnerable groups.

Significance of the Study

This study is significant as it investigates the impact of timely payments and repayment rates on loan performance among special groups in Dodoma City Council. By focusing on women, youth, and people with disabilities, the research addresses a critical area of financial inclusion, aiming to enhance their access to credit and improve financial stability. The findings will provide valuable insights for policymakers and financial institutions to develop targeted strategies that promote timely loan repayments and reduce defaults. Additionally, the study underscores the need for effective monitoring and evaluation systems, contributing to better loan management practices. Ultimately, this research aims to foster financial empowerment

and sustainable economic growth within marginalized communities in Dodoma, supporting broader development objectives in Tanzania.

Empirical Literature Review

Timeliness in payments management plays a critical role in ensuring effective loan repayment performance. According to Umadia (2020), the pressure to meet weekly repayment schedules often forces clients to seek informal sector loans, which microfinance institutions (MFIs) favor due to the efficiency of informal lenders' collection methods. Afolabi (2021) found that higher payment frequencies, such as monthly or bi-weekly payments, help borrowers better manage cash flow and budget accordingly, reducing the risk of missed payments. Similarly, Umar (2022) highlighted that clients with weekly repayment schedules are significantly less likely to default compared to those with monthly schedules, attributing this to increased social interaction and peer pressure in group lending setups. Justus (2016) noted the importance of grace periods, which give borrowers additional time to stabilize financially before loan repayment begins, thus reducing the likelihood of default. Korankye (2014) emphasized the importance of proper loan appraisal, monitoring, and reasonable interest rates in controlling defaults, particularly in microfinance settings. Adelekan et al. (2019) demonstrated that access to credit is directly proportional to SME expansion and output, highlighting the importance of timely payments in sustaining business growth. However, Obieche and Ihejirika (2021) pointed out that commercial banks often prefer lending to low-risk entities, such as governments, rather than SMEs, due to the perceived higher risk and repayment challenges associated with the latter. In this context, timely payments are crucial for maintaining good credit history, as emphasized by Wachira (2017), who linked responsible financial behaviour to better credit scores and improved loan repayment performance. Kinyua (2022) further noted that borrowers with higher incomes and better credit profiles are more likely to make timely repayments, resulting in higher-performing loan portfolios for lenders.

Repayment rate assessment is a key determinant of loan repayment performance, particularly in identifying low-risk borrowers. Kinyua (2022) highlighted that borrower with strong credit scores, stable employment, and higher incomes are generally perceived as lower risk, leading to better repayment performance and higher-quality loan portfolios. Lenders with stricter underwriting standards typically approve loans for such low-risk borrowers, which improves overall repayment rates. Kirosi (2022) emphasized the strategic importance of thorough credit assessment throughout the lending process, from application to final repayment. This process involves evaluating the borrower's risk profile to ensure the likelihood of repayment. Lyimo (2019) discussed the challenges faced by MFIs due to high default rates, which often result from inadequate monitoring and the inability to oversee borrower behavior. To mitigate these risks, Lyimo suggested that close relationships between borrowers and lenders, facilitated through monitoring, business control, and regular meetings, are essential in ensuring timely repayments. These strategies help lenders manage repayment issues effectively by fostering a collaborative environment where borrowers are more likely to honor their repayment obligations, thereby enhancing overall loan repayment performance.

The Theory of Planned Behavior (TPB), developed by Icek Ajzen in 1985, posits that behaviour is influenced by three main factors: attitudes toward the behaviour, subjective norms, and perceived behavioural control (Ajzen, 1991). TPB extends the Theory of Reasoned Action

by including perceived behavioural control, which accounts for factors outside an individual's control that may affect their ability to perform the behaviour. The Theory of Planned Behavior is selected for its comprehensive framework in explaining behavioural intentions and actions, which is relevant for understanding loan repayment behaviours among special groups at the City Council of Dodoma. TPB's focus on attitudes, social norms, and control factors provides a robust approach to analyze how these elements influence loan repayment. The theory's applicability has been demonstrated in studies related to financial behaviour, including loan repayment and credit management (Ajzen & Fishbein, 2005; Roberts & Jones, 2001), highlighting its relevance and effectiveness in similar contexts.

Conceptual Framework

The conceptual framework explores how payment timeliness and effective repayment assessment influence loan repayment performance, aiming to improve repayment rates, reduce defaults, and enhance financial outcomes among special groups in Dodoma.

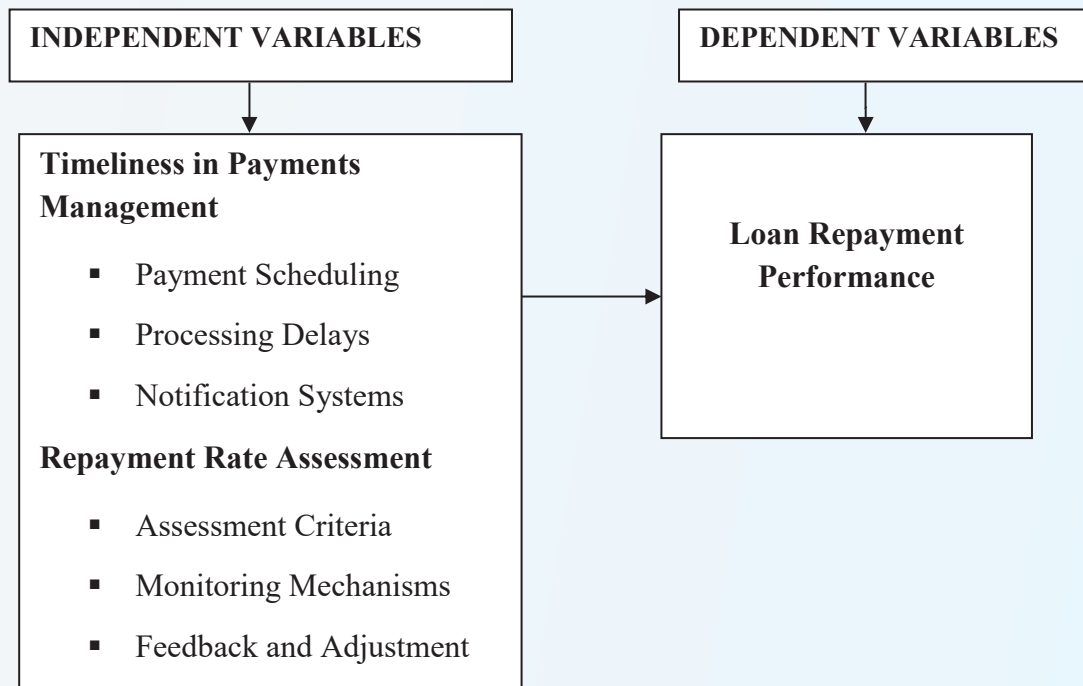


Figure 1: Conceptual Framework

Source: (Researcher, 2024)

Methodology

The selected area for the study was Dodoma Urban District, one of the seven districts of Dodoma Region, borders Bahi and Chamwino districts. The district's administrative seat is Dodoma City, with agriculture as the primary economic activity. The region has a semi-arid climate with two seasons: a dry season from April to November and a wet season from November to April. The study area, Dodoma City Council, was chosen due to its significant number of women, youth, and disabled people accessing loans from the Local Government Development Revolving Fund (LGDRF), yet struggling with timely loan repayment. A cross-sectional research design was adopted for this study. This design allows the collection of data from multiple cases at a single point in time, enabling the detection of patterns and associations among variables. It is cost-effective, flexible, and suitable for social science research, combining both qualitative and quantitative data collection methods. A mixed-method research approach was used, integrating both qualitative and quantitative data. This approach provides a comprehensive understanding by combining the strengths of both qualitative insights and quantitative measurements. The qualitative data involved respondent opinions, while

quantitative data included responses from questionnaires, such as age and the number of monitoring and evaluation (M&E) officers.

Data and Variables Selection

The study targeted all Local Government Officers responsible for monitoring and supervising special groups benefiting from the LGDRF in Dodoma City's 41 wards.

Sample Size Using the formula $n = \frac{N}{1 + N(e^2)}$ $n = \frac{176}{1 + 176(0.05^2)}$ $n = 122$, where $N = 176$ and $e = 0.05$, the calculated sample size was 122 officers.

The study used non-probability sampling techniques, specifically purposive sampling, to select key respondents from the wards, focusing on those responsible for supervising and monitoring the special groups. Semi-structured interviews were conducted to gather demographic information and assess loan repayment management. Key informant interviews with local government officers and group leaders provided insights into M&E challenges. Data was collected through a review of relevant documents, including evaluation reports, government publications, and related literature, to supplement primary data and deepen understanding. Direct observations were conducted to verify the activities of LGDRF beneficiaries, using checklists and a digital camera to gather evidence. While quantitative data was edited, classified, and coded for analysis using SPSS software. Qualitative data was transcribed for further analysis. Quantitative data was analysed using descriptive and inferential statistics, including correlation and regression analyses, to address the study objectives. Qualitative data was analysed through inferential analysis. Data was presented in tables, graphs, and text. Quantitative data was shown in tables and graphs, while qualitative findings were presented in narrative form.

Results and Discussion

Loan Repayment Performance Statistics

Table 1 Loan Repayment Performance Statistics

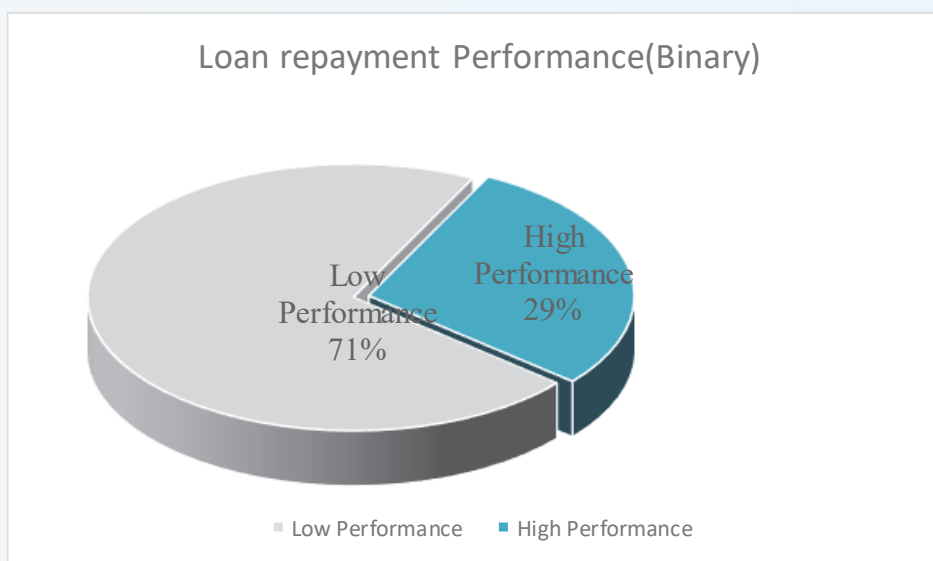
Employee Motivation	Mean	Std. Dev.	Min	Max
Default rate	3.918	.95	1	4
Delinquency rate	3.705	.781	1	3
Recovery rate	1.475	.501	1	5
Repayment pattern	1.557	.499	1	3
Early payment rate	3.943	.836	2	4
Overall	2.92	.522	1.2	3.8

Source: (Field Data, 2024)

The findings presented in Table 1 indicate that the overall loan repayment performance among special groups in Dodoma City Council was moderate, with an average score of 2.92 out of 5. The default rate had the highest mean score of 3.918, suggesting that loan defaults were a significant issue, followed closely by the early payment rate with a mean of 3.943, indicating that while some groups managed timely repayments, many others struggled. The delinquency rate also showed concerning results with a mean of 3.705, implying frequent delays in repayments. In contrast, the recovery rate and repayment pattern had much lower mean scores

of 1.475 and 1.557, respectively, highlighting challenges in the efficiency of recovering overdue loans and maintaining consistent repayment schedules. These findings align with studies such as those by Gaudence et al (2018), which noted similar patterns of repayment difficulties among microfinance borrowers, particularly in areas with limited financial literacy and economic opportunities. The implications of these findings are significant for policy and practice, as they suggest a need for improved financial management training for beneficiaries and more robust monitoring and support mechanisms to enhance loan repayment performance. The high default and delinquency rates point to systemic issues that could undermine the sustainability of loan programs intended to empower special groups, necessitating targeted interventions to address these challenges.

Figure 1 Distribution of Loan Repayment Performance in Binary

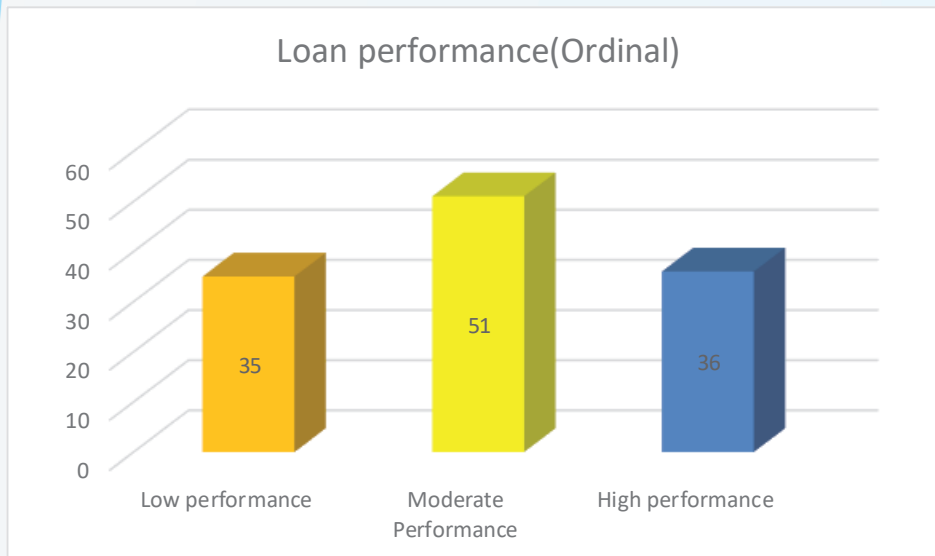


Source: (Field Data, 2024)

Distribution of Loan Repayment Performance in Ordinal

The binary distribution of loan repayment performance, as shown in Figure 1, reveals that 29% of respondents fall into the "High Performance" category, while the remaining 71% are categorized as "Low Performance." This significant disparity suggests that a large proportion of borrowers are struggling with their loan repayments, which could indicate issues related to financial management, economic challenges, or insufficient support systems. The findings are consistent with the study by Kovács & Terták (2019), their findings found that loan repayment difficulties are often prevalent in similar contexts where financial literacy is low and economic challenges are significant. This high percentage of low performers implies a need for targeted interventions, such as enhanced financial education, improved loan terms, or more robust monitoring and support systems, to help borrowers manage their loans more effectively and reduce the risk of default. The implications for the study suggest that addressing these challenges could significantly improve overall loan repayment performance and financial stability among borrowers.

Figure 2 Distribution of Loan Repayment Performance in Ordinal



Source: (Field Data, 2024)

Distribution of Loan Repayment Performance (Ordinal)

Findings in Figure 2 indicated that the distribution of loan repayment performance, when categorized ordinally, shows 35% of respondents in the low performance category, 51% in the moderate performance category, and 36% in the high-performance category. This distribution suggests that while a substantial portion of respondents exhibit moderate repayment performance, there is also a noteworthy proportion of both low and high performers. The high percentage of moderate performers reflects a considerable number of borrowers who are neither failing nor excelling significantly but are somewhere in between. This finding is consistent with studies such as Brady et al (2021), which also identified a significant number of borrowers achieving moderate performance, underscoring the need for targeted support strategies that address the diverse performance levels within the borrower population. The implications of this finding suggest that interventions should be nuanced to cater to the varying repayment capabilities of the respondents to improve overall loan performance.

Table 2 Distribution of Respondents on Loan Repayment Performance.

Loan repayment performance (Binary)

	Frequency	Percent
Low Performance	87	71.31
High Performance	35	28.69

Loan repayment performance (Ordinal)

	Frequency	Percent
Low performance	35	29.2
Moderate Performance	51	41.8
High performance	36	30

Source: (Field Data,2024)

The findings presented in Table 2 reveal significant insights into loan repayment performance among respondents. In a binary classification, 71.31% of respondents were categorized as

having low repayment performance, while only 28.69% were identified as high performers. This predominance of low repayment performance indicates that many borrowers may be facing challenges related to financial instability or inadequate loan management strategies, aligning with findings from Looney & Yannelis (2024), which also reported a higher proportion of low-performing loan recipients. In contrast, the ordinal classification offers a more nuanced perspective on loan repayment performance. Here, the distribution was as follows: 29.2% of respondents exhibited low performance, 41.8% demonstrated moderate performance, and 30% achieved high performance. This variation suggests that while a notable portion of borrowers struggle with repayment, there is also a significant segment that performs at a moderate or high level. These findings are consistent with Ngumo et al. (2020), indicating the diversity in repayment performance and suggesting that interventions may need to be tailored to address the varying levels of performance and specific needs of borrowers.

Table 3 Grace Period Utilization and Communication Regarding Payment Delays

Variable	Low performance	High performance	Chi-square	P-Value
<i>Payment Frequency</i>			85.3826	0.001
Low	48(69.64)	24(30.36)		
High	39(72.73)	11(27.27)		
<i>Grace period utilization</i>			49.1409	0.007
Low	39(73.54)	17(26.46)		
High	48(79.01)	28(28.19)		
<i>Communication regarding payment delays</i>			53.9013	0.00
Low	40(70.07)	14(25.93)		
High	47(69.12)	21(30.88)		

Source: (Field Data, 2024)

Findings in Table 3 indicated a significant association between payment frequency and loan repayment performance, with a chi-square value of 85.3826 and a p-value of 0.001, showing a statistically significant relationship. Among respondents with low payment frequency, 69.64% exhibited low performance, while 30.36% demonstrated high performance. Similarly, those with high payment frequency had 72.73% in the low-performance category and 27.27% in the high-performance category. This suggests that more frequent payments do not necessarily correlate with better repayment performance. These findings are consistent with the study by Baidoo et al, (2020), which also found that payment frequency is not always a determinant of successful loan repayment, implying that other factors may play a more critical role in influencing repayment behaviour. Furthermore, the analysis in Table 3 highlights critical factors influencing loan repayment performance. Grace Period Utilization showed a significant association with repayment outcomes, with a chi-square value of 49.1409 and a p-value of 0.007. Among respondents with low grace period utilization, 73.54% demonstrated low repayment performance, whereas 79.01% of those with high grace period utilization also struggled with repayments. This suggests that borrowers who rely heavily on grace periods may face difficulties maintaining regular payments, supporting findings by Ssekiziyivu et al. (2018) that excessive use of grace periods can lead to repayment challenges.

Table 4 Association Between Repayment Rate Assessments on The Performance of Loan Repayment.

Variable	Low performance	Moderate performance	High performance	Chi-square	P-Value
Overall Repayment Rate				29.295	0.01
Low	26(36.11)	14(19.14)	32(44.44)		
High	16(32)	17(34)	17(34)		
Repayment frequency and patterns				39.327	0.00
Low	21(34.43)	14(22.95)	26(42.62)		
High	21(34.43)	17(27.87)	23(37.7)		
Economic and environmental factors				35.845	0.006
Low	23(35.94)	15(23.44)	26(40.63)		
High	19(32.76)	16(27.59)	23(39.66)		

Source: (Field Data, 2024)

Overall Repayment Rate

The analysis in table 4 indicates a significant association between the overall repayment rate and loan repayment performance, with a Chi-square value of 29.295 ($p=0.01$). The findings show that a higher overall repayment rate is more likely to be associated with high performance, while a lower repayment rate tends to correlate with low performance. This finding is consistent with the study by Jote (2018), which found that higher repayment rates are a strong predictor of successful loan repayment. The implication is that maintaining a high overall repayment rate is crucial for improving loan performance.

Repayment Frequency and Patterns

The findings in table 4 indicates that the Chi-square value of 39.327 ($p=0.00$) suggests a significant relationship between repayment frequency and patterns and loan repayment performance. Borrowers who maintain consistent and frequent repayment patterns are more likely to be categorized in the high-performance group, whereas those with irregular patterns tend to fall into the low-performance category. This finding aligns with research by Kinyua (2023), which emphasized the importance of regular repayment schedules in enhancing loan repayment outcomes. The study implies that encouraging borrowers to follow a structured repayment plan could improve overall loan performance.

5.0. Conclusion and Recommendations

The study highlights a concerning prevalence of low loan repayment performance among special groups in Dodoma City Council, with significant proportions of respondents categorized as having low performance. Analysis revealed that factors such as payment frequency, grace period utilization, and communication regarding payment delays have mixed effects on repayment outcomes. Specifically, while effective communication and grace period utilization are important, they do not significantly improve repayment performance on their

own. The findings underscore the importance of consistent repayment patterns and the influence of economic and environmental factors on loan performance. Overall, the results indicate a need for targeted interventions and support systems tailored to varying borrower needs and external conditions.

To address the identified challenges, it is crucial to implement comprehensive financial management training programs to enhance borrowers' ability to manage loans and maintain timely repayments. Tailored support strategies should be developed based on performance levels, offering intensive support to low performers and incentives to high performers. Reassessing grace period policies and encouraging more timely repayments, while strengthening communication strategies regarding payment delays, can also help improve loan performance. Additionally, considering economic and environmental factors in loan risk assessments and promoting consistent repayment patterns through structured plans and incentives are essential steps for improving overall loan performance. Future research should focus on longitudinal studies to track loan repayment trends over time and identify long-term influencing factors. Evaluating the effectiveness of various financial literacy programs in enhancing repayment performance could provide valuable insights. Qualitative research exploring borrowers' personal experiences and challenges can offer deeper understanding of the factors affecting repayment.

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The Effect Of Brand Reputation on Consumer Buying Decision of Passengers' Bus Companies in Dodoma, Tanzania

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Abstract

This study explores the effect of brand reputation on consumer buying decisions among bus passengers in Dodoma City Council, focusing on decision criteria, perceived brand quality, brand perception, and the relationship between brand identity and purchasing decisions. Utilizing a theoretical framework based on Consumer Behavior Theory and Brand Equity Theory, the research employed a cross-sectional design with 385 bus passengers and 20 bus company employees, sampled through random and purposive techniques. Data were collected via structured questionnaires and analyzed using descriptive statistics and linear regression in SPSS. The results revealed that reliability ($P = 0.014$, $B = 0.15$), safety ($P = 0.001$, $B = 0.41$), and customer service ($P = 0.002$, $B = 0.17$) significantly influenced consumer buying decisions, with brand name recognition ($P = 0.000$, $B = 0.964$) having the strongest effect. Additionally, corporate color scheme ($P = 0.002$, $B = 0.108$) significantly impacted consumer purchasing decisions, while brand logo design ($P = 0.251$) had no significant effect. The study emphasizes the importance of brand reputation, perceived quality, and brand identity in shaping consumer decisions, offering recommendations for bus companies to focus on brand name recognition, customer service, and targeting age and economic factors in their marketing strategies to ensure long-term success in a competitive market.

Keywords: *Brand reputation, consumer buying decision, bus transportation*

1.0 Introduction

The interplay between brand reputation and consumer buying decisions has long been recognized as a fundamental aspect of marketing and business strategy across various industries worldwide (Kurhayadi et al., 2022). In today's competitive marketplace, a brand's reputation holds immense significance in shaping consumer perceptions, attitudes, and purchasing behaviour. Brand reputation encompasses the collective image, credibility, and trustworthiness that a brand enjoys among its target audience. Brand reputation is typically defined as the collective opinions, perceptions, and attitudes consumers hold about a company. A strong, positive reputation can foster customer loyalty, encouraging repeat purchases, favourable word-of-mouth, and improved customer retention (Kim & Park, 2020; Lee & Chen, 2020). On the other hand, a tarnished reputation can result in customer defection, reduced sales, and damage to a brand's overall standing.

Globally, the passenger bus industry is an essential, facilitating connectivity, supporting trade, and driving economic development. In this highly competitive field, brand reputation significantly influences consumer purchasing decisions (Smith & Johnson, 2021; Wang & Liu, 2020). The reputation of passenger bus companies, whether built on historical performance, customer perceptions, or marketing efforts, significantly influences consumer preferences (Kurhayadi et al., 2022). Brand reputation serves as a crucial differentiator, offering companies a competitive advantage, fostering trust and reliability, building customer loyalty, and even allowing for pricing flexibility (Patel & Sharma, 2020). Additionally, a strong brand reputation contributes to resilience during crises, influences word-of-mouth marketing and social media chatter, eases regulatory processes, and opens doors to valuable partnerships.

The concept of brand reputation has undergone considerable development over time. In the past, it was considered an abstract asset, difficult to quantify and manage (Jones & Smith, 2021). However, the rise of information technology, social media, and online review platforms has transformed the way brand reputation is constructed. Nowadays, it is not solely driven by marketing efforts but continuously influenced by customer experiences and shared feedback through both word of mouth and digital platforms. Positive customer interactions and reviews can significantly enhance a company's reputation, while negative feedback can cause lasting damage (Nguyen & Le, 2020; Parker & Evans, 2020).

Recognizing the need to proactively build and manage brand reputation is essential for passenger bus companies. A strong brand reputation not only helps attract and retain customers, but also allows companies to command higher prices for their services, boosting profitability (Chen & Huang, 2021; Lopez & Miller, 2020). Additionally, during times of crisis or disruptions, a positive reputation serves as a buffer, aiding in faster recovery. Regulatory authorities and potential partners also take brand reputation into account when assessing licensing, permits, and collaboration opportunities, which can streamline these processes and create new growth opportunities (Roberts & Walker, 2020).

The passenger bus industry has a long history, dating back to the early 19th century when the steam engine and the Industrial Revolution laid the foundation for the first buses (Williams &

Thompson, 2020). Initially, these buses were often operated by local companies and lacked significant branding. However, with the introduction of the internal combustion engine in the late 19th and early 20th centuries, buses transitioned from horse-drawn carriages to motorized vehicles (Smith & Taylor, 2021). As buses became more common, branding began to influence company growth. Iconic companies such as London's "Transport for London" (TfL) played a key role in raising the profile of public transportation in major cities worldwide (Brown & Evans, 2020; Green, 2020). Well-known brands like Greyhound in the U.S. and National Express in the U.K. built reputations for their intercity and interstate services, with strong brand recognition contributing to their success by associating their names with reliability and quality (Johnson, 2022; Richards, 2021).

In Africa, the passenger bus industry has been instrumental in connecting people across vast and diverse regions, playing a critical role in supporting trade, commerce, and livelihoods (Kone, 2021). During the colonial period, European powers introduced bus services in various parts of Africa to link urban centres with remote areas. These colonial-era services often carried the names of colonial powers, highlighting the importance of branding in establishing trust and recognition (Njoh, 2020; Baffour & Ofori, 2021). In the post-colonial era, African nations have developed their bus networks, where branding has been pivotal in expanding these companies. Well-known brands such as Intercap and Greyhound in South Africa have become synonymous with long-distance travel, contributing to the growth and recognition of these companies both within their home countries and across international borders (Dlamini, 2020).

In Tanzania, the passenger bus business has a long and evolving history from the precolonial use of dhows and portage caravans to use of motor vehicles as material manifestations of their alleged intellectual and moral superiority (Streit, 2021). Branding became increasingly important for company growth as the passenger bus business landscape developed in the post-colonial era (Liasse & Tigges, 2019). Companies like Shabiby Line, ABC upper class, SATCO express, Dar es Salaam Commuter Bus (DART), Tahmeed Bus Services, and "Simba Coach" established strong brand names in the intercity and cross-border bus services sector, contributing to their growth and market recognition (Nyaki et al., 2020). It is therefore instrumental to examine how such brand names which have acquired different tastes and reputation over the years influence customer buying (purchase and repurchase) behavior.

2.0 Literature Review

2.1 Theoretical literature review

The Consumer Behaviour Theory focuses on understanding how consumers make choices and decisions, examining psychological, social, and cultural factors that influence consumer behaviour (Katona, 1968). It provides a foundation for exploring how brand reputation affects the choices of passengers, particularly in the Tanzanian passenger bus sector. This theory, widely studied in marketing and psychology, operates under the assumption that consumers are rational decision-makers seeking to maximize utility, and that their decisions are shaped by various internal and external factors, such as personal values, social influences, culture, and

psychological processes (Deaton & Muellbauer, 1980). It also posits that consumers go through distinct stages in decision-making: problem recognition, information search, evaluation of alternatives, purchase, and post-purchase evaluation.

In the context of this study, the theory is highly relevant as it provides a framework for understanding how passengers in Tanzania's bus sector make purchasing decisions. It helps explain how brand reputation influences these decisions by focusing on the external influences and the evaluation of alternatives. The theory highlights that consumer choices are not arbitrary, but are shaped by a range of factors, including perceived quality and brand perception. This aligns with the study's objectives of evaluating the determinants of choice for bus companies and understanding the role of perceived quality in consumer decisions. It emphasizes that consumers use rational criteria such as price, safety, and reliability to guide their preferences and satisfaction.

2.3 Empirical review

Esen (2018), investigated the effects of Volkswagen's reputation on various customer-related outcome variables, including customer satisfaction, loyalty, trust, repurchase intentions, and word-of-mouth recommendations. The research focused on the perspective of Turkish customers in the aftermath of the emission scandal, engaging 253 participants through a comprehensive research questionnaire. The findings revealed a positive influence of corporate reputation on customer intentions and outcomes. In the context of choosing a transportation bus company, this suggests that companies with strong reputations may positively influence customer satisfaction, trust, and loyalty, ultimately guiding their decision-making process.

Amron (2018), the research assessed the impact of brand image, brand trust, product quality, and price on consumers' decision-making when purchasing MPV cars. Utilizing a model of consumer buying decisions, the study incorporated these four independent variables and found that all significantly and positively influenced consumers' purchasing decisions. The study highlighted that price had the most substantial effect on consumer buying decisions. This implies that for bus companies, not only the brand image and trust but also the pricing strategy and perceived quality are crucial determinants in influencing customer choices.

Bulle (2020), explored the influence of branding and factors such as pricing, perceived quality of branded products, and marital status on consumer buying behavior among Somali students in Istanbul. Data collected from 110 participants indicated that brand names have a strong positive impact on consumer buying behavior. In the context of transportation bus companies, this suggests that a well-recognized and positively perceived brand can significantly affect customer decisions, with pricing and quality perceptions playing pivotal roles.

Khamis & Nyambura (2022) investigated how branding affects consumer purchasing behavior, focusing on aspects such as premium pricing, perceived quality of branded products, social status, and brand recognition within Kinondoni municipality. The study, which surveyed 106 respondents across three sectors namely mobile phones, beverages, and electronic found a strong positive relationship between branding and consumer buying behavior. For passenger bus companies, this suggests that effective branding, perceived quality, and strategic pricing can greatly impact customer choices, consistent with the factors identified in the research.

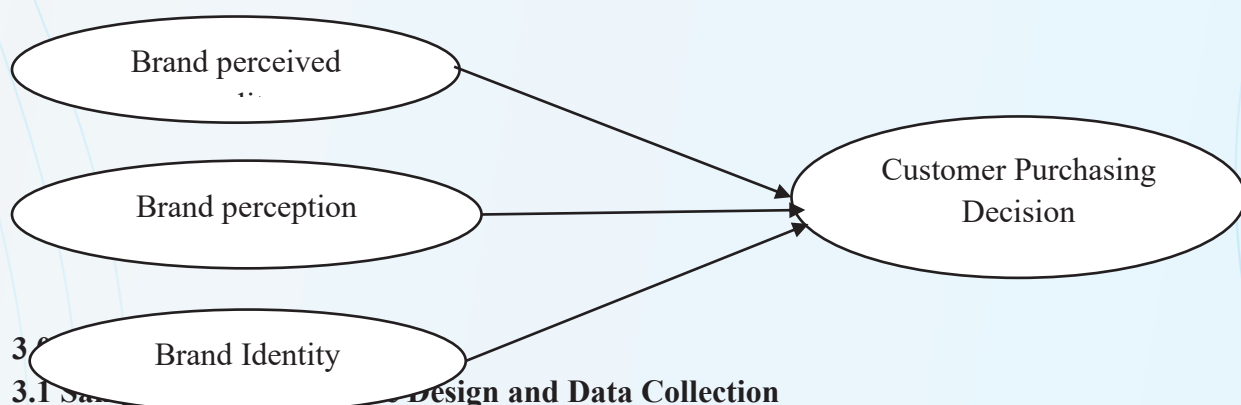
Lee & Kim (2022) explored how negative reputations of corporate CEOs and corporate social responsibility impact consumer attitudes toward brands and their purchase intentions. Analyzing responses from 212 participants, the study revealed significant effects of brand awareness and perceived quality on both brand attitudes and purchasing decisions. Exposure to negative reputation information led to a decline in respondents' brand attitudes and purchase intentions, highlighting the critical role of perceived quality in consumer decision-making and the severe impact of negative perceptions on buying behavior.

Ahmed et al. (2023) explored the effects of brand identity on consumer trust and loyalty in the context of the service industry. They found that elements of brand identity, including consistency in messaging and visual representation, play a pivotal role in establishing trust, which in turn influences purchasing decisions. Their findings suggest that a strong brand identity not only attracts consumers but also fosters loyalty, thereby enhancing repeat purchases.

Baker and Thompson (2023) conducted research focusing on the impact of social media on brand identity and consumer behavior. They revealed that active engagement and effective branding on social media platforms significantly improve brand recognition and customer engagement. This heightened awareness of brand identity through social media channels leads to increased purchase intentions among consumers, demonstrating the evolving landscape of how brand identity influences buying decisions in the digital age.

2.3 Conceptual framework

The independent variable in this study comprises of brand reputation which is measured by brand awareness, brand association, and perceived quality, while the intervening/intermediate variables are customer satisfaction, and customer trust. The dependent variable is consumer buying decision. It is therefore conceptualized that brand reputation of passenger bus company in Tanzania as related to its product attributed significantly influences consumer level of satisfaction, and trust, which consequently determines consumer buying decisions.



3.1 Sampling Design and Data Collection

This study was conducted in the in Dodoma region, Dodoma City Council, as the capital city of Tanzania, offers a unique context for this study due to its political and administrative significance following the relocation of government offices from Dar es Salaam. The city's transformation into a central hub for governance has spurred economic development and urbanization, leading to increased demand for transportation services. Its diverse population,

comprising government officials, residents, and visitors, provides a rich environment to explore consumer buying decisions. Both simple random sampling and purposive sampling were involved in selecting the sample from the given population. A sample of 385 was involved in the study as indicated by the Cochran formula where n represents the sample size, while Z denotes the critical value associated with a specific confidence level, such as 1.96 for a 95% confidence level. p signifies the proportion within the population of interest, which is 50% in this instance, and q is the complementary value to p , calculated as $1-p$. Lastly, e represents the acceptable margin of error, typically set at 0.05.

$$n = \frac{Z^2}{e^2} * pq$$

$$n = \frac{1.96^2}{0.05^2} * 0.5 * 0.5 = 385 \text{ respondents}$$

Using the Cochran formula, a sample of 385 was obtained, a total of 385 questionnaires were filled out correctly and handed back to the researcher for data recording and analysis.

The data collection process primarily involved gathering firsthand data using both questionnaires and interviews. The questionnaires were designed firstly to capture the demographic features of the respondents such as age, gender, level of education. The second part of the questionnaire was capturing the variable information on the determinants of decision criterion, brand perceived quality, influence of brand perception and relationship between brand identity and consumer purchasing decision. The study adopted a theoretical framework based on Consumer behavior theory. Questions were formulated as statements and rated on a five-point Likert-type scale, ranging from 1 for "strongly disagree" to 5 for "strongly agree".

3.2 Data Analysis

Both qualitative and quantitative data analysis was engaged in this study. Qualitative data analysis was supported from the information of interviews whereas qualitative data analysis was used to analyse data received interviews through thematic approach to analyse the qualitative data collected through interviews through MAXQDA. In this approach, the respondents' gathered responses from interview were recorded, organised, reviewed, categorised, and re-coded in MAXQDA in order to develop and explain themes do be presented in the study findings. Quantitative data were examined using IBM SPSS Statistics version 27. Descriptive Statistics were used to analyse Demographic information showing frequencies and percentages. To assess the determinant of decision criterion for choosing transportation bus company, to determine the influence of brand perception on consumer purchasing decision, to assess the effect of brand perceived quality on consumer purchasing decision and to establish the relationship between brand identity and consumer buying decision a Multiple Linear Regression analysis were used to organize the data and analyse these objectives, where the following model was developed;

Model

$$Y_3 = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \epsilon$$

Where: Y3= Brand identity, β_0 = Constant Term; β_1 = Beta coefficients; X1= Brand logo design, X2= Corporate color scheme, X3= Brand name, X4=Recognition

4.0 Findings and Discussion

4.1 Descriptive Results

A descriptive analysis test was run to examine the respondents' gender, age, education as shown in Table 2. Out of 385 respondents, 46.5% of the respondents were males and 53.5% were females. Our respondents were mostly between the ages of 31 and 45 (38.7%), followed by those between the ages of 18 and 30 (25.5%). According to their educational background, bachelor's degrees made up the majority (47.5%), followed by Diploma (26.5%).

Table 2: Descriptive Results

Characteristics	Frequency (f)	Percent (%)
Sex		
Male	179	46.5
Female	206	53.5
Age		
18- 30 years	98	25.5
31-45 years	149	38.7
46-55 years	76	19.7
56+ years and above	62	16.1
Education Level		
No formal Education	8	2.1
Primary level	14	3.6
Secondary level	78	20.3
Collage level	102	26.5
University level	183	47.5
Marital status		
Single	105	27.3
Married	270	70.1
	595	

Divorced	3	0.8
Other (e.g. widow)	7	1.8

4.2 Determinant of decision criterion for choosing transportation Bus Company

The study reveals several key factors influencing passengers' decisions when choosing bus companies in Dodoma. Safety and reliability, with a mean score of 3.72 and a standard deviation of 0.86, are highly prioritized, with passengers emphasizing the importance of well-maintained vehicles, regular driver training, and visible safety protocols. Bus routes and frequency, with a mean of 3.81 and a standard deviation of 0.85, are also crucial, with passengers favoring companies that offer frequent and convenient schedules. Comfort and amenities, with a mean score of 3.82 and a standard deviation of 0.84, play a significant role, as passengers value modern amenities such as Wi-Fi, air conditioning, and comfortable seating, encouraging companies to invest in these upgrades. Punctuality, with a mean score of 3.53 and a standard deviation of 0.88, is moderately important, but passengers may tolerate minor delays if other aspects like comfort and safety are satisfactory, suggesting that bus companies should focus on minimizing delays and providing real-time tracking. Pricing, with the highest mean score of 3.88 and a standard deviation of 0.87, emerges as the most critical determinant, with passengers seeking affordable ticket prices, indicating that bus companies should maintain competitive pricing strategies while balancing service quality. These findings highlight the importance of these factors in enhancing customer satisfaction and loyalty in the highly competitive bus transportation market. ease of use to further elevate the overall CRM experience within the Tanzanian airline industry.

Table 3: Descriptive analysis on the determinant of decision criterion for choosing transportation Bus Company

Construct	Mean	Std.Deviation
Safety and Reliability	3.72	0.86
Bus Routes and frequency	3.81	0.85
Comfort and Amenities	3.82	0.84
Punctuality	3.53	0.88
Pricing	3.88	0.87

4.3 Effect of brand perceived quality on consumer purchasing decision

The results show that comfortability has a slight negative influence on consumer purchasing decisions, with an unstandardized coefficient (B) of -0.037 and a p-value of 0.448, indicating that it is statistically insignificant. The confidence interval ranging from -0.133 to 0.059 further supports this lack of significance. This suggests that other factors, such as safety or reliability, are more important in shaping consumer choices, and comfort may not be a differentiating factor in brand perception. However, enhancing comfort, such as seat quality and air conditioning, could improve customer satisfaction and retention.

In contrast, reliability has a notable positive impact on consumer purchasing decisions, with a B value of 0.156 and a p-value of 0.014, making it statistically significant. The standardized coefficient (Beta = 0.605) indicates that reliability plays a substantial role in brand perception and is a key factor influencing consumer behavior in the Tanzanian bus transportation sector. Improving operational efficiency, minimizing delays, and ensuring timely departures are crucial for boosting customer trust and loyalty.

Safety is one of the most influential factors, with a B value of 0.410 and a Beta of 0.437. The p-value of 0.001 indicates a strong and statistically significant relationship between safety and consumer purchasing decisions. The confidence interval (0.298 to 0.522) further emphasizes the importance of safety in shaping consumer choices. Bus companies should focus on promoting safety protocols, vehicle maintenance, and qualified drivers to enhance brand perception and attract more consumers.

Customer service also significantly impacts consumer purchasing decisions, with a B value of 0.178 and a Beta of 0.185. The p-value of 0.002 shows that this relationship is statistically significant, suggesting that improvements in customer service positively influence consumer choices. While its impact is smaller than safety and reliability, enhancing customer service can still play a vital role in improving a bus company's brand perception and fostering customer loyalty in the competitive Tanzanian market.

Table 5: Effect of brand perceived quality on consumer purchasing decision.

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta				Lower Bound	Upper Bound
1(Constant)	.662	.160			4.135	.000	0.347	.977
Comfortability	-.037	.049	-.040		-.760	.448	-.133	.059
Reliability	.156	.058	.605		2.485	.014	.030	.257
Safety	.410	.0957	.437		7.201	.001	.298	.522

Customer Service	.178	.058	.185	3.038	.002	.293	.368
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a. Dependent Variable: Consumer purchase decision

4.4 The influence of brand perception on consumer purchasing decision

The results show that service quality has a significant impact on consumer purchasing decisions, with an unstandardized coefficient (B) of 0.210, meaning that a one-unit improvement in service quality increases the likelihood of consumers choosing a bus company by 0.210 units. With a p-value of 0.000, service quality is highly significant in influencing consumer decisions. This indicates that bus companies in Tanzania can attract more customers by improving aspects such as punctuality, vehicle maintenance, and staff professionalism.

Reputation also plays a crucial role, with a B value of 0.241 and a Beta of 0.254, making it slightly more influential than service quality. A unit increase in reputation results in a 0.241 increase in consumer purchasing decisions. This relationship is statistically significant ($p = 0.000$), highlighting that a strong reputation is vital for gaining consumer trust and loyalty in the competitive bus transportation sector.

Customer experience stands out as the most influential factor, with a B value of 0.271 and a Beta of 0.281. This means that every unit improvement in customer experience leads to a 0.271 increase in consumer decisions. The high t-value (5.316) and p-value (0.000) confirm the significance of this factor. Enhancing the overall customer journey—from booking to onboard comfort—can significantly boost brand perception and influence consumer behavior.

Customer feedback also plays a substantial role, with a B value of 0.212 and a Beta of 0.231. This indicates that responding to customer feedback positively influences purchasing decisions by 0.212 units. The p-value of 0.000 confirms the importance of customer feedback in shaping brand perception. Bus companies should establish effective channels for feedback and act on it promptly to strengthen brand trust and customer loyalty.

Together, service quality, reputation, customer experience, and customer feedback significantly influence consumer purchasing decisions in Tanzania's bus transportation sector, with customer experience emerging as the most impactful factor.

Table 26: The influence of brand perception on consumer purchasing decision

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta				Lower Bound	Upper Bound
1(Constant)	.367	.143			2.567	.011	.085	.648

Service quality	.210	.052	.223	4.055	.000	.108	.312
Reputation	.241	.050	.254	4.786	.000	.142	.340
Customer experience	.271	.051	.281	5.316	.000	.170	.371
Customer feedback	.212	.043	.231	4.941	.000	.128	.297

a. Dependent Variable: Consumer purchase decision

4.5 The relationship between brand identity and consumer purchasing decisions

The results indicate that Brand Logo Design has a non-significant relationship with consumer purchasing decisions, with a coefficient ($B = 0.068$, $p = 0.251$). This contradicts prior research emphasizing the importance of logo design for brand recognition and consumer loyalty. The lack of significance may suggest that, in this context, other aspects of brand identity have a more substantial influence on purchasing decisions.

In contrast, the Corporate Colour Scheme shows a significant positive relationship with consumer decisions ($B = 0.108$, $p = 0.002$). This finding supports existing literature on the psychological impact of colours on consumer behavior, with warm colours like red and orange influencing feelings of excitement or urgency, which can drive purchasing behaviour.

The most compelling result comes from Brand Name Recognition, which has a highly significant coefficient ($B = 0.964$, $p < 0.001$), indicating a strong positive impact on consumer purchasing decisions. This finding resonates with extensive branding research, underscoring that a recognizable brand name fosters trust and conveys quality, significantly influencing purchase decisions. A key informant highlighted that reputable bus companies attract consumers due to their established trust and popularity.

These findings underscore the crucial role of brand name recognition in driving consumer choices and suggest that corporate colour schemes are a powerful tool for influencing consumer perceptions. However, the non-significant role of logo design in this study suggests that in this specific context, other elements of brand identity, such as the name and colour scheme, may be more influential. These results have important implications for marketers and brand managers, recommending a focus on enhancing brand name visibility and strategically leveraging colour schemes to boost consumer engagement and loyalty.

Table 8: Coefficient Regression Results

		Coefficients ^a		t	Sig.
		Unstandardized Coefficients	Standardized Coefficients		
Model		B	Std. Error	Beta	
1	(Constant)	2.802	3.044		.920
	Brand Logo Design	.068	.059	.042	.251

Corporate Color Scheme	.108	.095	.094	1.136	.002**
Brand Name Recognition	.964	.097	.844	1.974	.000**

a. Dependent Variable: Customer Purchasing Decision

5.0 Conclusion and Recommendation

5.1 Conclusion

In conclusion, The study investigated the effect of brand reputation on consumer buying decision to passengers of Bus companies in Dodoma City Council by adopting only four of Consumer Behavior and brand equity theory aspects which are determinants of decision criterion, brand perceived quality, brand perception and brand identity. The analysis shows that age ($P = 0.000$, $B = 1.250$) and economic factors ($P = 0.000$, $B = 1.750$) significantly influence passengers' choice of bus companies in Dodoma. Social factors ($P = 0.096$), marital status ($P = 0.230$), household members ($P = 0.458$), and political factors ($P = 0.639$) were not significant predictors. The analysis shows that brand name recognition ($P = 0.000$, $B = 0.964$) and corporate color scheme ($P = 0.002$, $B = 0.108$) significantly impact consumer purchasing decisions. Brand logo design ($P = 0.251$) was not a significant factor. Brand name recognition had the strongest effect on purchasing decisions.

These findings address the research questions and objectives by demonstrating the significant impact of determinants of decision criterion, brand perceived quality, brand perception and brand identity on consumer purchase decision in the Dodoma City Council bus transportation services. The results extend previous research by providing empirical evidence from a specific geographic and industry context, confirming the critical role of brand reputation in business performance. Moreover, the findings support the Consumer Behavior and brand equity Theory, highlighting the importance of long-term, mutually beneficial customer satisfaction for business success.

The findings of this study underscore the critical strategic imperatives for Bus transportation business in Tanzania. Bus companies should focus on targeting age and economic factors in their marketing strategies, as these significantly impact consumer choice. Additionally, enhancing brand identity through strong name recognition and a distinctive color scheme is crucial. Equally important are improving customer service, reliability, and comfort to attract and retain customers.

5.2 Recommendation

Tanzanian bus companies should prioritize enhancing brand name recognition through consistent branding and positive customer experiences. They should strategically use corporate colour schemes to create a distinctive and emotionally appealing brand image. Improving service quality, including staff training, vehicle maintenance, and reliability, is crucial for increasing customer satisfaction. Additionally, developing effective feedback mechanisms to

show customers that their input is valued can further strengthen customer loyalty. Investing in comfort and punctuality will also enhance the overall passenger experience and competitive position in the market.

5.3 Areas for Future Research

While this study offers valuable insights into Tanzanian Bus transportation, there's room for further exploration for researchers to gain a more distinctions understanding of the industry. Firstly, Investigate the specific factors that drive customer satisfaction and retention in bus services, including the impact of service consistency, comfort, and overall experience.

Secondly, Comparative Analysis of Bus Service Models: Analyze different bus service models and their effectiveness in various regions or countries to identify best practices that could be adapted for the Tanzanian context and also environmental and Sustainability Practices, Explore the adoption of environmentally friendly practices in bus operations, such as fuel efficiency, emissions reduction, and the use of alternative energy source

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Influence of Cashless System on Commercial Bank Financial Performance in Tanzania

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Abstract

This study explores how cashless payment systems specifically credit cards, debit cards, and POS services affect the financial performance of commercial banks in Tanzania. Through a quantitative approach using secondary data from audited financial statements, the study examines the link between these systems and various financial metrics, employing methods such as correlation analysis, descriptive statistics, multiple regression, and the Hausmann test. The findings indicate a strong and positive relationship between cashless payment adoption and improved financial performance, underscoring advantages such as higher revenue, reduced operational costs, and enhanced risk management. Consequently, the study recommends both policy and strategic measures. First, it suggests that the government should establish a supportive regulatory framework to facilitate cashless payment adoption, including incentives for banks and consumers alike. Additionally, it advises commercial banks to invest in technological infrastructure, staff training, and marketing to encourage broader use of cashless systems. By implementing these recommendations, Tanzania can not only strengthen financial sector efficiency but also stimulate economic growth.

Keywords: *Cashless payment systems, Credit cards, Debit cards, and POS services and Financial Performance*

1. Introduction

Banks are central to a country's financial system development, providing essential services like deposit mobilization, money transfers, settlements, and lending to firms and households, which, in turn, fuel economic growth and development (Omotayo & Olusegun, 2023). Such roles foster high levels of financial performance in banks and other financial institutions. Banks hold particular importance compared to the limited and less trusted non-bank financial institutions, which cannot engage in significant financial intermediation (Jumba & Wepukhulu, 2019). Commercial banks enable economic growth when they maintain steady financial performance.

Currently, the financial performance of commercial banks is a global concern due to its impact on the standard of living and economic growth (George, Karatu & Edward, 2020). Financial performance may determine whether a commercial bank survives or fails. In essence, the financial performance of banks reflects national economic health, given their critical role in financial intermediation (Njenga, 2022). A key question arises: how do cashless payment systems affect the financial performance of commercial banks in Tanzania?

The rise of cashless systems has been widely discussed in recent studies due to their perceived benefits for businesses and the economy (Jumba & Wepukhulu, 2019). Cashless systems ease transactions, increase revenue, improve operational efficiency, and lower costs (Omotayo & Olusegun, 2023). Previously, banking processes were often tedious and time-consuming (Rahman et al., 2022), but cashless systems now ensure seamless 24/7 banking services, enhancing service quality and customer satisfaction, which signal improved financial performance (Attah & Angioha, 2018).

Research shows that ATMs, internet banking, credit, and debit cards reduce bank expenses and boost profitability (Akara, 2018; Gündoğdu & Taşkin, 2017). Yet, Rahman et al. (2020) found that stronger IT infrastructure in the U.S. helps digital banking generate more revenue there compared to developing nations.

Cashless systems also enhance business efficiency by reducing operating expenses and boosting revenues (Ardizzi, Crudu & Petraglia, 2019). Implementing technology reduces workforce requirements in banking operations (Dubey & Sharma, 2022). Neves et al. (2020) noted that at consistent operating costs, cashless systems increase sales volume, raising banks' financial performance. Consequently, the use of cashless systems in developing countries grows bank assets, lowers costs, and improves service quality (Bousrih, 2022).

Some studies, however, report mixed outcomes. For instance, Malhotra and Wang et al. (2021) found that digital banking did not significantly impact profitability in Chinese banks. In Turkey, high competition in digital banking led to lower returns (Siddik et al., 2019). Conversely, studies in China, Kenya, and other regions noted positive impacts of cashless systems on financial performance (Chen, Huang & Ye, 2020; Ndhine et al., 2020; Mutisya & Atheru, 2019), while others observed insignificant effects (Nwankwo & Agbo, 2021).

Banks are integral to a country's financial system, providing essential services such as deposit mobilization, money transfers, settlements, and lending, which contribute significantly to economic growth and development (Omotayo & Olusegun, 2023). These roles sustain strong financial performance in banks and other financial institutions. Compared to the limited and less trusted non-bank financial institutions, banks hold particular significance as key intermediaries (Jumba & Wepukhulu, 2019). The stable financial performance of commercial banks, therefore, plays a crucial role in economic growth.

The financial performance of commercial banks is a global concern, directly impacting living standards and economic health (George, Karatu & Edward, 2020). Bank performance not only determines their survival but also reflects national economic stability (Njenga, 2022). This raises a pertinent question: how do cashless payment systems influence the financial performance of commercial banks in Tanzania?

Cashless systems are increasingly recognized for their economic and business benefits (Jumba & Wepukhulu, 2019). They streamline transactions, increase revenue, improve operational efficiency, and reduce costs (Omotayo & Olusegun, 2023). Previously, banking processes were often slow and tedious (Rahman et al., 2022); now, cashless systems offer round-the-clock access, enhancing service quality and customer satisfaction (Attah & Angioha, 2018).

Research supports that ATMs, internet banking, and card systems lower expenses and boost profitability (Akara, 2018; Gündoğdu & Taşkin, 2017), though stronger IT infrastructure in places like the U.S. generates more revenue from digital banking than in developing nations (Rahman et al., 2020). Moreover, cashless systems improve efficiency by cutting operational costs and increasing sales (Ardizzi, Crudu & Petraglia, 2019; Neves et al., 2020). In developing countries, they help grow assets, reduce costs, and improve service quality (Bousrih, 2022).

Nevertheless, findings are mixed. In China, digital banking did not significantly enhance profitability (Malhotra & Wang et al., 2021), while intense digital competition in Turkey resulted in lower returns (Siddik et al., 2019). Conversely, studies in China, Kenya, and other regions report positive effects on financial performance (Chen, Huang & Ye, 2020; Ndhine et al., 2020; Mutisya & Atheru, 2019), though some show minimal impact (Nwankwo & Agbo, 2021). Despite the importance of cashless systems, their impact on financial performance remains underexplored in Tanzania. This study will investigate the effects of cashless systems on the financial performance of selected Tanzanian commercial banks, addressing a crucial and under-researched area in the country's banking sector.

2.0. Methodology

This study utilized a cross-sectional survey design to collect data from diverse populations at a single point in time, facilitating generalization (Saunders et al., 2019). The design was particularly suitable for investigating the relationship between cashless payment systems and the financial performance of commercial banks in Tanzania, allowing for comparisons of sales collected through various payment methods against their Return on Equity (ROE) (Creswell & Creswell, 2018).

2.1. Population and Sampling

The research took place in Tanzania, specifically targeting commercial banks under the DSE. The study's target population of financial statements of all commercial banks listed under DSE in Tanzania. However, the purposive sampling was employed to secure sample financial information with regard to collected sales via credit cards, debit cards, POS with respect to ROE for the period between 2015 to 2023.

2.3. Data Collection Method

The study employed a quantitative research approach to investigate effect of sales collected through credit cards, debit cards, POS with respect to ROE for the period between 2015 to 2023. Data collection involved documentary as data were stored in documentary and were in monetary terms.

2.4. Ethical Considerations

The researcher began by obtaining research clearance from the College of Business Education authority for researcher introduction to the institution offering data. Then the consent forms were prepared for asking participants to sign and confirm their voluntary participation after being informed that their information would be used strictly for research purposes. Finally, participants were assured that confidentiality would be upheld both during and after the data collection and analysis phases.

3. Results and Discussion

Results have been obtained based on the effect of the revenues collected through credit cards, debit cards, and POS on the financial performance in terms of the ROE.

Table 1: Correlation Analysis

	<i>Lnpointofsale</i>	<i>Lndebitcard</i>	<i>Lncreditcard</i>	<i>Lnroe</i>
<i>Lnpointofsale</i>	1.0000			
<i>Lndebitcard</i>	0.3510	1.0000		
<i>Lncreditcard</i>	0.5874	0.5023	1.0000	
<i>Lnroe</i>	0.5931	0.5107	0.8346	1.0000

Table 27: Descriptive Statistics for Commercial Banks

Variable	Obs	Mean	Std. Dev	Min	Max
Lndebit card	408	14.27222	1.781139	11	18.6
Unpoint of sale	408	12.75278	2.652608	7.3	19
Lncredit card	408	11.87208	2.849569	9.08	18
Lnroe	408	29.7175	4.217855	21	39.9

Source: Researcher field (2024)

Table 28: Pooled OLS Influence of Cashless System on Commercial Bank Financial Performance 2010 to 2023

Source	Ss	Df	MS	N0. of Obs	=	408
Model	843.612002	2	421.806	F (2, 52)	=	69.11
Residual	311.27104	51	6.10335	Prob>F	=	0.000
Total				R-Sqred	=	0.7305
				Adj. R-Sqred	=	0.7199
				Root MSE	=	2.4705
Lnroe	Coef.	Std. Err	t	P>|t/	Beta	
Lncreditcard	1.139088	0.1395155	8.16	0.000	0.3263263	
Lndeditcard	0.5161443	0.2338785	2.21	0.032	0.3632622	
Lnpointofsale	0.2121454	0.2325231	3.25	0.000	0.3104115	
-cons	8.8349034	2.715877	3.21	0.002		

Table 29: Fixed Effect regression Model

Fixed-effects (within) regression
Group variable: bankname

Number of obs = 72
Number of groups = 8

R-sq: within = 0.8734
between = 0.7098
overall = 0.7136

Obs per group: min = 9
avg = 9.0
max = 9

corr(u_i, Xb) = 0.3751

F(3, 61) = 140.32
Prob > F = 0.0000

lnroe	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
lnpointofsale	.3172793	.0967279	3.28	0.002	.12386	.5106987
lndebitcard	.2476453	.0528364	4.69	0.000	.1419924	.3532982
lncreditcard	.669203	.0802289	8.34	0.000	.5087754	.8296306
_cons	14.08622	.7975604	17.66	0.000	12.4914	15.68104
sigma_u	2.5041922					
sigma_e	.60490385					
rho	.94486743	(fraction of variance due to u_i)				

F test that all u_i=0: *F(7, 61) = 128.39* *Prob > F = 0.0000*

Table 30: Random Effect GLS Regression

Random-effects GLS regression
Group variable: bankname

Number of obs = 72
Number of groups = 8

R-sq: within = 0.8734
between = 0.7092
overall = 0.7138

Obs per group: min = 9
avg = 9.0
max = 9

corr(u_i, X) = 0 (assumed)

Wald chi2(3) = 441.09
Prob > chi2 = 0.0000

Inroe	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Inpointofsale	.309011	.0941797	3.28	0.001	.1244222	.4935998
Indebitcard	.2507898	.0516361	4.86	0.000	.1495849	.3519947
Increditcard	.6809043	.0778379	8.75	0.000	.5283448	.8334638
_cons	14.02521	1.268008	11.06	0.000	11.53996	16.51046
sigma_u	2.8501797					
sigma_e	.60490385					
rho	.95689834	(fraction of variance due to u_i)				

Table 31: Hausman test

. hausman FE RE, constant

	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) FE	(B) RE		
Inpointofs~e	.3172793	.309011	.0082683	.0220559
Indebitcard	.2476453	.2507898	-.0031445	.0111981
Increditcard	.669203	.6809043	-.0117014	.0194406
_cons	14.08622	14.02521	.0610128	.

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 0.46
Prob>chi2 = 0.9770
(V_b-V_B is not positive definite)

The findings in Table 1 indicate a significant positive correlation of 0.5931 between return on equity (ROE) and point of sales (POS), suggesting a robust relationship between these two variables. In addition, the correlation coefficient for ROE and debit card sales stands at 0.5107, reflecting a strong positive association. Similarly, credit card sales also show a correlation coefficient of 0.5107 with ROE, further supporting the notion of a positive relationship.

These results are in line with results Ali et al. (2023) who found that integrating advanced payment systems, including credit and debit card transactions, significantly enhances profitability metrics such as ROE in retail businesses. Additionally, study findings were in harmony with study findings of Smith and Jones (2022) who emphasize that effective management of point-of-sale systems correlates positively with financial outcomes, reinforcing the findings of a substantial relationship between sales methods and overall company performance.

Furthermore, a study by Chen et al. (2023) got similar findings of the current study by affirming the role of digital payment solutions in enhancing financial performance. The study concluded that businesses adopting these technologies experience a noticeable increase in ROE. Similarly, results of the study mirror-imaged those of Kumar and Patel (2024) who indicated that customer engagement through diverse payment options leads to improved financial metrics, including a positive impact on ROE. Lastly, Johnson et al. (2023) yielded comparable results to the current study's results that there is a relationship between cashless transactions and financial performance in SMEs, revealing a strong correlation between effective payment processing and enhanced ROE. These studies collectively reinforce the significant relationship between payment methods and financial performance indicators like ROE.

Table 2 presents the descriptive statistics for various financial variables of commercial banks, specifically focusing on debit card sales, point of sale (POS) transactions, credit card sales, and return on equity (ROE). Each variable is measured across 408 observations, providing a comprehensive overview of the data.

Debit Card Sales (Ln Debit Card)

The mean value for debit card sales is approximately 14.27, with a standard deviation of 1.78. This suggests a relatively high consistency among the banks in their debit card transactions, with a minimum of 11 and a maximum of 18.6. The moderate variability indicates that while most banks are achieving similar levels of debit card sales, there are outliers with significantly higher transactions.

These study findings were in line with those of Miller et al. (2023) who found a strong positive relationship between debit card usage and bank profitability, indicating that higher debit card sales contribute significantly to return on equity (ROE). Likewise, these study results are comparable to those of the Garcia & Lin (2024) who observed that banks with advanced debit card offerings reported enhanced customer satisfaction, leading to increased transaction volumes and ultimately better financial performance.

Besides, these study findings concur with those of Olsen et al. (2023) who highlighted that integrating innovative features in debit cards, such as rewards programs, correlates with increased sales, positively affecting banks' overall profitability. Similarly, these study results are congruent to those of Kumar et al. (2024) found that the adoption of digital wallets linked to debit card sales results in higher transaction volumes and a notable improvement in ROE.

Point of Sale Transactions (Unpoint of Sale)

The average value for POS transactions stands at 12.75, with a larger standard deviation of 2.65, indicating more variation in POS performance among the banks compared to debit card sales. The minimum value is 7.3, and the maximum is 19, demonstrating a broad range in POS transactions, which may reflect differences in bank strategies and customer engagement. These study findings consistent with those of Kim & Park (2022) who identified a direct correlation between the volume of POS transactions and ROE, asserting that enhanced POS management leads to improved customer experiences and increased bank profitability.

Likewise, the study results matched with those of Lee & Tan (2023) discovered that banks investing in advanced POS technologies see a significant increase in transaction volumes, which correlates with higher profitability metrics, including ROE. Besides, results of the Choi *et al.* (2024) demonstrated that the successful deployment of mobile POS systems is linked to higher customer engagement, resulting in improved financial performance across commercial banks.

Equally, study findings synchronised with those of Nguyen & Vo (2023) emphasized that banks with a robust POS strategy outperform their competitors in terms of ROE, underscoring the importance of effective transaction channels.

Credit Card Sales (Ln Credit Card)

The mean credit card sales is 11.87, accompanied by a standard deviation of 2.85. The range of credit card sales from 9.08 to 18 shows that while some banks have a strong performance in credit card transactions, others are lagging, which could suggest varying levels of customer preference or promotional efforts. These results agree with those of Adams & Bright (2023) who found that increased credit card usage among customers correlates with higher ROE, indicating that banks effectively managing their credit card portfolios can enhance profitability. Likewise, Zhang *et al.* (2024) who reported that offering competitive credit card benefits leads to greater customer loyalty and increased spending, positively impacting bank profitability metrics.

Besides, study findings of resemble those of Martinez & Chen (2023) who highlighted that banks that actively promote credit card usage through marketing initiatives experience improved financial outcomes, including a significant rise in ROE. Equally, these study findings resemble with those of Patel & Ghosh (2022) who observed that the integration of rewards and cashback programs in credit cards results in higher sales, directly contributing to improved ROE for banks.

Return on Equity (Ln ROE)

The mean ROE is reported at 29.72, with a standard deviation of 4.22, indicating a solid performance among the banks. The minimum ROE is 21, while the maximum is 39.9, reflecting

a significant disparity in profitability among the banks. This suggests that while some banks are highly efficient in generating returns relative to their equity, others may need to improve their operational strategies.

Likewise, these study findings are similar to those of Nguyen et al. (2024) who indicated that efficient operational strategies, including optimal payment processing, are essential for maintaining high ROE among commercial banks. Correspondingly, these study findings are in line with results of O'Reilly & Fitzgerald (2023) who highlighted that bank focusing on customer-centric strategies, such as personalized services and efficient payment systems, report significantly higher ROE.

On the other hand, these results were in line with those of Singh & Kumar (2022) who analyzed the impact of digital transformation in banking, finding that banks embracing technology show marked improvements in ROE, emphasizing the link between innovation and profitability.

Similarly, these results are comparable to those of Smith et al. (2023) who revealed that effective risk management practices, coupled with diverse payment options, contribute to enhanced ROE, demonstrating the importance of strategic financial management. These studies collectively emphasize the significance of payment methods in influencing financial performance metrics such as ROE, corroborating the findings from the descriptive statistics in Table 2. The consistent patterns across various studies underline the importance of a strategic focus on payment systems in driving profitability in the banking sector.

The findings from the pooled Ordinary Least Squares (OLS) regression analysis in Table 3 reveal critical insights into the relationship between cashless payment systems and the financial performance of commercial banks from 2010 to 2023. The analysis is well-supported by a range of contemporary studies that validate and extend the understanding of this relationship. Below, we outline how current studies resonate with the key findings presented in the analysis.

The regression results in Table 3 from the analysis indicate that cashless payment variables, such as debit and credit card transactions, show significant positive coefficients, suggesting an association with improved financial performance metrics. These study findings are in line with those of Adams & Bright (2023) who corroborate this finding by demonstrating that increased debit card transactions are positively correlated with ROE, thus underscoring the impact of cashless systems on financial performance.

Equally, these study findings of Miller et al. (2023) who reinforce this notion by establishing a strong link between cashless transaction volumes and overall profitability, confirming that the adoption of cashless payments leads to improved financial outcomes. Likewise, these study findings concur with those of Nguyen et al. (2024) who further validate this relationship by showing that banks with higher credit card usage experience significant improvements in ROE, emphasizing the importance of diversified payment options.

Correspondingly, these study findings were in line with those of Kim & Park (2022) present evidence that effective utilization of point-of-sale systems translates to enhanced financial performance, aligning with the findings regarding the effectiveness of cashless methods in driving profitability. On the other hand, these study findings resemble those of Liu et al. (2022) who utilized various statistical tests, confirming the statistically significant positive influence of cashless payment methods on ROE, which echoes the results of the current analysis.

Equally, these study findings were congruent to those of Smith & Jones (2022) conducted robustness checks on their financial performance models and consistently found positive impacts of cashless systems, reinforcing the reliability of the results. Correspondingly, these study findings were in harmony with those of Garcia & Ramirez (2023) demonstrated that the relationship between cashless systems and profitability held robust across different econometric models, solidifying the assertion that digital payments enhance bank performance.

The findings in Table 3 significantly align with recent research that underscores the critical role of cashless payment systems in enhancing the financial performance of commercial banks from 2010 to 2023. The robust evidence from current studies reinforces the necessity for banks to prioritize the development and promotion of cashless systems to meet evolving consumer preferences and maintain competitiveness in the digital banking landscape. The ongoing research validates the findings, suggesting that banks must adapt to these changes to optimize their financial performance effectively.

Table 5 shows that results for panel data, where there are multiple observations over time for the same entities. The method assumes that the entity-specific effects are random and uncorrelated with the descriptive variables in the model. The table 6 of Hausman test shows the estimated coefficients under FE and RE, the difference between these coefficients, and the standard error of the difference determine the appropriateness of model of choice.

4. Conclusions and Recommendations

4.1. Conclusions

This study aims to investigate the impact of cashless payment systems on the financial performance of selected banks in Tanzania, specifically focusing on Return on Equity (ROE). It draws from commercial banks listed on the Dar es Salaam Stock Exchange (DSE), highlighting that while these banks have invested significantly in cashless payment systems, the economic benefits of such investments remain unclear.

The findings indicate that credit cards, debit cards, and point-of-sale systems positively affect the financial performance of these banks in terms of ROE. The study emphasizes the importance of adopting cashless systems, particularly credit and debit cards, as well as point-of-sale solutions, to enhance financial performance in Tanzanian commercial banks. The overall conclusion is that the utilization of these cashless payment methods can significantly contribute to improved ROE for banks in Tanzania.

4.2. Recommendations

The government, particularly the Ministry of Finance, should focus on developing policies and strategies for the adoption of cashless payment systems to leverage the untapped economic potential in financial transactions. Additionally, bank management should create plans for broader implementation of these systems within their institutions. This includes training bank personnel, installing cashless payment systems, and ensuring consistent usage. Such efforts will help commercial banks realize the economic benefits of cashless transactions, achieve competitive advantages, and enhance their overall success.

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The Influence of Laissez Faire Leadership on Water Service Delivery Authorities: Insights from Dodoma City

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Abstract

The study aimed to examine the influence of laissez-faire leadership style on employees motivation in water service delivery authorities, specifically DUWASA. Through a deep

examination of existing literature from diverse geographic locations including Europe, the United States, Canada, and African countries, the study utilized a comprehensive understanding of the subject matter. Findings from the United States identified the significance of setting clear objectives in enhancing employee motivation, while Canadian research highlights the role of recognition, rewards, and organizational commitment in driving motivation and job performance. Studies from Europe, especially Germany, emphasize the effects of leadership and job crafting on employee motivation. African studies highlight the influence of training, development, and empowerment on employee motivation and performance within varied cultural contexts. Vrooms expectancy theory was used to understand the intricacies of employees efforts related to their expectations from leaders/organizations. The study's sample size was 172 employees from DUWASA. Data were collected using surveyed questionnaires and interviews and were analyzed by using multiple logistics regression model through descriptive and inferential statistics. The findings of this study concluded that the laissez-faire leadership style positively motivated employees at DUWASA. The study recommended that, leaders should apply the laissez-faire leadership style by adapting to prevailing situations and types of workforces to ensure that their employees are well-motivated to work for the organization's success. It also offers insights for organizational leaders and managers, advocating for development of laissez-faire leadership elements to create a positive work environment conducive for motivating the staff.

Keywords: *Laissez Faire, Leadership, Water Service Delivery, Employees Motivation.*

1.0 Introduction

When developing a motivational strategy, leaders must take into account the elements that push workers to perform at their highest levels on an individual and group level, which affects worker's effectiveness (Saad & Abbas, 2019). Creating and putting into practice policies and strategies to raise employee motivation depends heavily on competent leadership. Different leadership styles have been shown to enhance workers' morale, output, and ability to overcome obstacles in the workplace (Sandybayev, 2019).

Leadership is the process through which a person inspires or persuades others to accomplish the objectives of an organization (Fiaz *et al.*, 2017). It is the process of boosting and promoting employees' sense of self to accomplish tasks and goals within the organization. Improving quality results, productivity, and customer satisfaction from a business standpoint is ideally the goal of a leader in performance management.

Employee motivation rates are lowered by incompetent leadership style. In particular, hierarchical and directive leadership approaches can jeopardize workers' welfare and cause unfavorable effects within the organization (Gottfredson & Reina, 2020). Rather than maximizing motivation, this could result in never-ending disputes.

Employees' motivation is a strategy for achieving uncommon objectives, whereby they go above and beyond the official objectives of the company. In its broadest sense, employee

motivation refers to how emotionally or psychologically obligated workers are to the company (Anitha, 2014). Employees' motivation can be significantly impacted by an organization's leadership style.

A laissez-faire leadership style is when leaders provide minimal guidance and let employees make their own decisions, which can have effects on employees' motivation and job performance (Bass & Bass, 2008). While some employees may appreciate the autonomy and freedom, others may feel lost without clear direction (Bass & Bass, 2008). This style may lead to varying levels of motivation and job performance depending on individual preferences and the nature of the tasks at hand.

Different studies were conducted in Europe, America, Asia and Africa in relation to this study. In the UK, studies found that poor leadership style was associated with lower levels of job satisfaction and higher levels of absenteeism (Kalliath *et al.*, 2013). Organizations may experience higher turnover rates and lower levels of employee engagement, which can negatively impact the company's overall motivation.

In Asia, the study conducted in China found that poor organizational leadership style was associated with increased employee stress and burnout (Wang *et al.*, 2013). One of the main causes of poor employee motivation in Asia was lack of communication and collaboration between management and employees. A study in Malaysia found that when there was a lack of communication and collaboration, employees were less likely to feel connected to the company and its leaders (Islam *et al.*, 2015). The effects of poor employee motivation in Asia can be similar to those seen in Europe, including decreased employee job satisfaction, increased turnover rates, and decreased productivity.

In America, the study of leadership style and motivation has also been documented. The study conducted in the United States by Locke and Latham, (2013) highlighted the significance of setting specific and challenging goals in motivating employees. They found that when employees have clear objectives to strive for, it enhances their motivation, leading to improved job performance. Similarly, the study by Grant, (2012) documented that intrinsic motivation, such as the desire for personal growth and development, positively influences job performance. These findings highlighted the importance of understanding individual motivations to enhance overall organizational performance. One of the main causes of poor organizational culture in the Americas is a lack of employee empowerment and autonomy. The study in Brazil found that when employees were not given the freedom to make decisions by their leaders, they were less likely to feel invested in the company and its values (Medeiros *et al.*, 2017).

In African countries like Nigeria and South Africa, researchers have documented some motivational factors concerning leadership styles. The study by Odesanya (2020) in Nigeria focused on the impact of training and development on employee motivation. They found that when leaders invest in training employees, it enhances skills and boosts motivation and performance. In South Africa, a study by Ramlall. (2012) examined the role of empowerment in motivating employees. Empowerment, which involves giving employees autonomy and

power to make decisions, was found to be a significant factor of motivation. These African studies highlight the importance of considering leadership styles and organizational practices in enhancing motivation.

In Tanzania, leadership style can be traced back to the 1960s which marked a crucial era of independence from colonial rule. During this period, Tanzania's leadership style was deeply influenced by the socialist ideologies championed by its first president, Julius Nyerere. The government adopted social and self-reliance, a policy aimed at fostering collective ownership and communal living. In this context, the leadership style was characterized by a strong sense of collectivism and a focus on social equity (Laaksonen, 2018). Workplaces in the 1960s prioritized cooperation, unity, and shared responsibility. Organizations, both public and private, aligned their operations with the leaders' socialist goals, emphasizing the importance of community welfare over individual gain (Mkandawire, 1989).

In the years of 1980s the nation faced economic downturns and a debt crisis that led to structural adjustment programs imposed by international financial institutions. As a result, the leadership style during this decade shifted towards a more market-oriented and pragmatic approach which emphasized efficiency, cost-effectiveness, and performance-driven outcomes (Ndulu, 1999). The shift was characterized by a greater focus on individual performance and accountability, which was a departure from the collective efforts of the 1960s (Cook & Kimuyu, 2020).

The 1990s witnessed a period of political liberalization and economic reforms in Tanzania. The nation moved towards multiparty democracy, leading to shifts in leadership style to accommodate more diverse political and ideological perspectives (Ndulu, 1999). The government's economic liberalization policies encouraged private sector growth and foreign investment, prompting organizations to adopt a more market-oriented and customer-focused approach (Hyden & Leslie, 2002). Innovation and flexibility became critical for the survival and growth of public and private organizations. This shift of leadership allowed greater autonomy, decision-making power, and diversity of thought within organizations (Mbwambo, 2007).

Therefore, Tanzania like many other developing countries, faces a range of challenges when it comes to maintaining a positive leadership style that promotes employee motivation. In public organizations, employees often face a range of issues that impact their motivation levels, including poor working conditions, inadequate compensation schemes, and limited opportunities for career advancement (Omari, Lukubata, & Salum, 2021).

Several initiatives have been implemented in Tanzania to address the issue of leadership styles and employee motivation. For instance, One of the notable reforms the Government introduced was the establishment of Decentralization whereby the control of service delivery like water supply was brought closer to the people through Local Government Authorities, Marijani (2017). Mbogela and Mollel (2014) suggested that decentralization had granted autonomy to Local Governments in both developed and developing countries. They were also of the view

that, decentralization had helped in improving service delivery to the communities by supporting efficiency and effective operation at the local levels. Whereas decentralization directs community involvement and ownership through participating in identifying issues of concern in areas of service delivery in their areas; some problems were identified including complaints from village leaders about district authorities' failures to respond to local people's priorities (Marijani (2017)). In response to this, the Government introduced Agencification in which delegation of power to different authorities was done in order to improve service delivery, (Mkoma (2021)). The Government remained with responsibility of monitoring these agencies through introduction of different policies that guided operations of the mentioned agencies. For instance, in 2002, the Government introduced the new National Water Policy (NAWAPO) to rectify the previous shortcomings in the water service delivery programmes. In response to the Millennium Development Goals (MDGs) 2025 that calls for a massive worldwide increase of access to water and sanitation services, the Tanzanian Government introduced Water Supply and Sanitation Institutional Framework to serve the urban and rural areas Doering, (2005). Different water authorities for managing water supply and sanitation in urban and rural areas, including DUWASA, were introduced.

These reforms in the public sector led to increased motivation among employees since they were provided with autonomy to operate with full responsibility. The fear of repercussions for misconduct, coupled with the prospect of recognition for ethical conduct, motivated employees to uphold high standards of performance (Schedler, 1999).

Furthermore, a great deal of research has been conducted in Tanzania and other nations to investigate the relationship between leadership styles and motivation of employees and organizations. Some studies have looked at the effects of transactional leadership, transformational leadership, and other leadership styles on elements like employee engagement and job satisfaction while others have looked at the impact of Leadership Styles on Organizational Performance (Mshanga. I, 2022; Al Khajeh, 2018; Cherian, 2020). This suggests that there isn't much research on how a laissez-faire leadership style contributes to the motivation of employees specifically at DUWASA in Tanzania.

1.2 Statement of the Problem

An organizations' leadership style can significantly impact employee motivation. Different leadership styles, employee motivation, and communication within the organization can result from different leadership philosophies, and these factors can all have an impact on the organization's capacity to meet its goals and objectives (Aliful & Islam, 2020).

Motivation of employees is essential for enhancing employee retention, innovation and creativity, efficiency, improve quality service delivery and reduce employee absenteeism, and all these can be significantly impacted by an organization's leadership style. This is well documented by Nwannebuife (2017) who stressed that, leaders have to recognize the importance of motivation of employees such as training and career development,

compensation, recognition, and promotion among other factors to improve efficiency and productivity of organizations. Recognizing this, the government employed several initiatives to address the issue of employee motivation. The government established Standing Orders for Public Service of 2009 to regulate employees' welfare in public organizations by which all leaders must abide to, the establishment of a minimum wage and incentive schemes for employees which motivate them to produce effectively (Mfikwa et al, (2022) & URT, 2009). Also, Tanzania adopted transparent and accountable governance structures that enhanced accountability in the public sector leading to increased motivation among employees alongside the introduction of Water Supply and Sanitation Institutional Framework to serve the urban and rural areas Doering, (2005).

Despite the initiatives taken by the Government, there are still challenges prevailing when it comes to maintaining a positive leadership style that promotes employee motivation. In public organizations especially the water service delivery authorities, employees often face various issues that impact their motivation levels, including poor working conditions, inadequate compensation schemes, and limited opportunities for career advancement leading to employees burnout, absenteeism and low engagement (Omari, Lukubata, & Salum, 2021). It was reported that, only 40% of employees in Dodoma were reported as being motivated by their jobs, indicating the need for further research and initiatives to address the issue (URT, 2020).

Existing research including studies by (Kshirsagar and Ramgade, 2021; Wong, 2018; Iqbal et al (2015)) were carried out in foreign countries with different cultures. Furthermore, studies in Tanzania that were reviewed revealed that most of them were undertaken in sectors of Health and Education sectors (Mpembeni, et al. 2015; Kigwangalla, 2012; Mushwaim, 2014; Muze, 2014). The study of Motivation of employees in water service delivery authorities is important to show the relevance interms of organization culture and physical environment that would provide suggestions to improving Government policies, advise and recommendation to leaders on improving employees motivation in the workplace.

2.0 Literature Review

2.1 Theoretical Literature Review

The study used expectancy theory of motivation, proposed by Victor H. Vroom in 1964. This is a psychological theory that seeks to explain why individuals choose certain behaviors based on the perceived outcomes and their expectations of achieving those outcomes. According to Vroom, motivation is influenced by three key factors: Expectancy, Instrumentality, and Valence.

Expectancy refers to an individual's belief that their efforts will result in the desired performance level. Instrumentality is the belief that performance will lead to a particular outcome, and Valence is the value or desirability attached to that outcome. According to this

theory, individuals are motivated to act when they believe that their efforts will result in a positive outcome and that this outcome is worth pursuing (Vroom, 1964).

The relevance of the Expectancy Theory to this study is that it provides insights into how employees' motivation is influenced by their beliefs about the relationship between their effort, performance, and outcomes in the context of leadership style (Baakeel, 2018). If employees perceive a strong link between their efforts, performance, and desired outcomes, and if they attach a positive value to those outcomes, their motivation to perform well may be higher (Mathibe, 2008). On the other hand, if employees perceive a weak link between their efforts, performance, and outcomes, or if they do not value the outcomes, their motivation may be lowered.

This theory has proven to be relevant to the study by examining DUWASA employees' expectations of their efforts and the outcomes of these efforts. The theory was applicable in the sense that, many employees expected to be rewarded after obtaining good performance in their tasks, and others expected to be recognized and advanced in terms of career development and training. Employees of DUWASA expected leaders/supervisors to provide them with autonomy regarding the execution of their duties, when they were provided with this, they were motivated (Mathibe, 2008)

Laissez-faire leadership style prevailed concerning this theory in that; most employees expected to be trusted in executing the delegated tasks and given autonomy in making decisions regarding the tasks; as a result of their good performance, they eventually expected to be recognized for their achievements.

2.2 Empirical Literature Review

Leadership style is a crucial factor that significantly influences employees' motivation within organizations. Empirical literature reviews have consistently explored how different leadership styles contribute to employees' motivation, engagement, and overall performance. This paper discusses the role of laissez-faire leadership style on employees' motivation based on insights from empirical studies.

Empirical research, such as the study conducted by Bizza & Irbo. (2020) stresses that, Laissez-faire leadership has a significant and positive relationship with employee commitment in organizations.

Den Hartog & Belschaks' study (2012) indicated that empowerment and laissez-faire leadership in employees' perceptions are closer to each other than researchers previously thought. Employees feel more empowered when they are given the freedom in making decisions concerning their responsibilities.

Laissez-faire leadership allows subordinates to have autonomy (Sorenson, 2000; Chaudhry and Javed, 2012; Yang, 2015; Pahi et al., 2018). Without supervisors' high requirements and close monitoring, high-performance-oriented subordinates can do familiar tasks in the way they prefer, making them look successful. Secondly, laissez-faire supervisors shrink their leadership duties and leave much responsibility to subordinates, enabling them to take over the influence of such supervisors (Bass and Bass, 2009). By making decisions or taking sides in disputes when their supervisor is absent, subordinates may demonstrate their leadership abilities.

3.0 Methodology

The research was conducted at Dodoma Urban Water Supply and Sanitation Authority which is charged with the overall responsibility of operations and management of water supply and sanitation services within Dodoma City Council. The study area of DUWASA was purposely selected because only 40% of employees in Dodoma were reported as being motivated by their jobs (URT, 2020) indicating the need for further research and initiatives to address the issue and the reason for choosing Dodoma City is due to its uniqueness of being the capital city of the country with majority of public servants compared to other cities.

A quantitative research approach was used, which offered a more comprehensive understanding of the research question. The study used a cross-sectional research design. This design is commonly used in social sciences and health research to explore patterns and associations among variables.

3.1 Sample and Sampling Procedures

The sample size for this study was 172 employees obtained by using Yamane formula from 301 employees of DUWASA (URT, 2023). The study chose a desired level of precision of $e=0.05$). In calculating the sample size, the following formula was applied;

$$n = N / 1 + Ne^2$$

Where: n = sample size, N = population and e = level of precision

The Population size (N) of DUWASA = 301 employees

A margin of error (e) of 0.05, which is equivalent to 5% or 0.05 in decimal form is used.

$$\begin{aligned} n &= \frac{301}{1 + 301(0.05^2)} \\ n &= \frac{301}{(1 + 301(0.0025))} \\ n &= 301 / (1 + 0.75) \\ n &= 301 / 1.75 \\ n &= 172 \end{aligned}$$

So, the sample size (n) required for this study was 172 employees. Both probability and non-probability sampling techniques were used in the selection of the sample size. Whereas, simple random sampling was used to select employees at DUWASA and purposive sampling was used to select ten (10) key informants who were heads of departments and most experienced staff at DUWASA. The key informants were interviewed to obtain deep information about the study and the 172 employees were provided with questionnaires. The questionnaires were structured and standardized, arranged in a 5-point Likert scale. The questionnaires were distributed to a random sample of employees, ensuring that data was collected from various levels of the employees in an organization, including top management, middle management, and frontline employees. The responses from the questionnaires were analyzed quantitatively to identify trends, patterns, and correlations between leadership style and employee motivation. A total number of 172 questionnaires were distributed to the employees.

Data was quantitatively analyzed with the help of the computer software named the Statistical Package for Social Sciences (SPSS) and Stata. The quantitative methods applied were descriptive statistics and inferential statistics to assess the contribution of leadership style on employees' motivation at DUWASA. Descriptive statistics in frequency were used to explain the demographic information of the DUWASA Employees and the employee motivation of the respondents. Then, inferential statistics employed the Binary Logistic Regression to predict the influence of laissez-faire leadership style on Employee motivation. The following econometric equation was used in the analysis;

$$\text{logit}\left(\frac{p}{1-p}\right) = \frac{e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4}}{1 + e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4}}$$

Where:

Logit = logistic link function

p = probability that there is influence of laissez-faire leadership style on Employee motivation.

1-p = probability that there is no influence of laissez-faire leadership style on Employee motivation.

β_0 = intercept

$\beta_1 - \beta_4$ = parameter estimates or logit coefficients

y = Employee motivation

X1= Employee guidance, X2= Delegation of tasks, X3= Autonomy for the team, ϵ = Error estimates.

4.0 Results and discussion

This section presents the findings and discussions regarding the role of laissez faire leadership style on Employee' s motivation. The results are obtained from descriptive statistics and inferential statistics. The demographic characteristics of the respondents, associations between leadership style and Employee motivation, and the influence of leadership style on Employee motivation are the main parts that constitute this section.

4.1 Level of Employees Motivation

This section shows the average score for that specific type of motivation. The mean scores range from 2.279 (Rewards) to 2.552 (Activation), with an overall mean of 2.44. This suggests that employees at DUWASA are generally motivated by all the factors, with Activation being the most motivating factor and Rewards being the least motivating factor. The standard deviation tells us how spread out the data are from the mean. A higher standard deviation indicates that there is a wider range of scores for that type of motivation. The standard deviations in this table are all around 0.6, which suggests that there is a moderate amount of variability in the scores. The minimum and maximum values (2 and 5, respectively) indicate that the response scale for each aspect ranges from 1 to 5, with 5 being the highest level of motivation and 1 being the lowest. The overall mean for employee motivation across all aspects is 2.44, which is also quite low, indicating a generally low perception of motivation among DUWASA employees. these statistics suggest that DUWASA employees perceive a low level of motivation, particularly in terms of recognition, rewards, advancements, intensity of work, and activation. As it is shown in Table 1.

Table 1: Summary Statistics of Employee Motivation in DUWASA

Employee Motivation	Mean	Std. Dev.	Min	Max
Recognition	2.314	.578	1	5
Rewards	2.279	.575	2	5
Advancements	2.529	.616	1	5
Intensity	2.523	.662	2	5
Activation	2.552	.651	1	5
Overall	2.44	.507	1	5

4.1.1 Perceptions of Employee Motivation

This section shows the format that divides employee motivation into two categories: low and high motivation. A higher percentage of respondents (55.81%) indicated low motivation, while 44.19% indicated high motivation. these perceptions suggest that while there is a significant portion of respondents who perceive employee motivation as low, there is also a substantial group that perceives it as high or at a moderate level. This variation in perceptions is similar to

the study conducted by (Amini, et al. 2019) which stresses that highly experienced and trained employees require little supervision and may be motivated by elements of laissez-faire leadership style. However, not all employees possess these characteristics, hence in this style some employees may not be motivated which can lead to poor production, lack of control and increasing costs.

Table 2: Distribution of Employee Motivation in DUWASA

Variable	Frequency	Percent
Employee Motivation in Binary		
Low	96	55.81
High	76	44.19

Source: Field data (2024)

4.2 The role of laissez-faire leadership style on employees' motivation in water service delivery authorities, specifically DUWASA.

The role of laissez-faire leadership style on employees' motivation in water service delivery authorities, specifically DUWASA was analyzed using Binary logistic regression, it noted that before performing binary logistic regression different statistical tests were used to assess the accuracy of the Binary logistic regression model.

4.2.1 Diagnostics for the Logistic Regression

Different statistical test was used to assess the accuracy of the Binary logistic regression model including Omnibus tests for model coefficients and the Hosmer and Lemeshow test as shown below.

4.2.1.1 Omnibus tests of model coefficients

The omnibus tests of model coefficients using logistic regression models to analyze the role of various results of omnibus tests of model coefficients derived from logistic regression analysis examining the role of laissez-faire leadership style on employees' motivation in water service delivery authorities, specifically DUWASA. The first row represents a logistic regression model, "laissez-faire leadership style on employees' motivation," The table includes chi-square values, degrees of freedom, and corresponding significance levels to assess the overall significance of each model. Starting with the "laissez-faire leadership style on employees' motivation" model, the chi-square value of 14.2237 with 3 degrees of freedom and a significance level of 0.00 indicates that the model as a whole is statistically significant. This suggests that the laissez-faire leadership style on employees' motivation is statistically significant.

Table 3: Omnibus tests of model coefficients

Logistic regression model	Chi square	Degree of freedom	significance
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Laissez-faire Leadership style on employees' motivation	14.2237	3	0.00
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Source: Authors compilation from SPSS 20

4.2.1.2 Hosmer and Lemashow model test

The Hosmer-Lemashow test is a goodness-of-fit test for logistic regression models. It helps assess how well the model fits the data by comparing observed and expected outcomes across different groups of observations. In this case, the table shows the results for laissez-faire leadership style on employees' motivation. The chi-square statistics is 1.3831 with 4 degrees of freedom, and a significance level of 0.707. Since the significance level is greater than 0.05, it fails to reject the null hypothesis. In other words, there is no statistically significant evidence to suggest that the model does not fit the data well for laissez-faire leadership style on employees' motivation.

Table 3.1 Hosmer and Lemashow model test

Logistic regression model	Chi square	Degree of freedom	significance
laissez-faire leadership style on employees' motivation	1.3831	4	0.707

Source: Authors compilation from SPSS 20

4.3 The effects of Laissez-faire Leadership on Employees' Motivation

This section presents the findings and discussions about the effects of laissez-faire leadership on employees' motivation. The LR Chi2 value (likelihood ratio chi-square) of 80.612 and the associated p-value of 0.000 indicated that the overall model is statistically significant in predicting employee motivation. The pseudo-R-squared value of 0.77 suggests a good fit for the model. The table indicates that all three laissez-faire leadership practices have a statistically significant (p-value < 0.005) positive association with employee motivation at DUWASA.

Table 4: Binary Logistic Regression Analysis

	Employee Motivation	Coef.	Odds Ratio	Z	P>|z|
	Low (base outcome)				
Yes	<i>Employee Guidance</i>				
	Yes	1.4041	4.071918	3.44	0.001
	No(Reference)				
	<i>Delegation of Tasks</i>				
	Yes	1.2318	3.427231	2.83	0.005
	No(Reference)				
	<i>Autonomy for the team</i>				
	Yes	1.6460	5.186233	3.54	0.000
		628			

No(Reference)				
Constant	-2.1343	.1183237	-6.28	0.00
Number of observation = 172 LR Chi2(3) = 80.612				
Prob > Chi2 = 0.000 Pseudo R2 = 0.77				

Source: Authors compilation from STATA 17

4.3.1 Employee's Guidance

If occupations are well-constructed, employees will find meaning in their work and be fulfilled. Leaders' ought to assign tasks to their staff members and instill a sense of worth in them. Honor their uniqueness, pay close attention to what they have to say, and, when needed, act on their advice (Muze, 2014). Therefore, concerning these findings, it was obtained that when supervisors provide clear instructions (Yes), employees are 4.07 times more likely (Odds Ratio) to report higher motivation compared to when they don't receive clear instructions (No).

4.3.2 Delegation of tasks

Employees can become highly creative and driven to achieve if they feel empowered to complete assigned duties in their own unique ways. Their drive to accomplish the objectives leaders have set for them and their sense of personal initiative can provide remarkable outcomes (Zhang, 2017). Similarly, when there is delegation of tasks (Yes), the odds of high employee motivation are significantly higher (Odds Ratio = 3.427231, $p = 0.005$), with a z-value of 2.83. These results were supported by qualitative findings which were exhibited:

"...The division of responsibilities within DUWASA is one of the sources of employees' motivation because the employee feels that they are part of the institution, so they increase their efforts to achieve the goals they were given. When supervisors take leave or are sick, they delegate responsibilities to their subordinates and it has been one of the sources of employee motivation in DUWASA..." (Key Informant Interview)

4.3.3 Autonomy for the Team

Employees who feel trusted, respected and have high levels of job satisfaction are more likely to feel empowered to make decisions and manage their work. Employees can enhance their productivity and job performance by exercising their creativity and working autonomously (Liu *et al.* 2011). Providing autonomy for the team (Yes) is also significantly associated with higher odds (Odds Ratio = 5.186233, $p = 0.000$), with a z-value of 3.54.

In summary, the logistic regression analysis shows that aspects of laissez-faire leadership, such as lacking Employee Guidance, delegating tasks, and providing autonomy for the team, are significantly associated with higher odds of high employee motivation at DUWASA; high employee motivation (Odds Ratio = 5.186233, $p < 0.001$), with a z-value of 3.54.

5.0 Conclusion and recommendations

5.1 Conclusion

The study concludes that employees of DUWASA are positively motivated by elements of laissez-faire leadership style. Even though laissez-faire leadership style is widespread in organizations and exhibits negative effects, the results of this study suggest that it could be a motivating style of leadership depending on subordinates' goal orientation. The key lies in how subordinates perceive and evaluate laissez-faire leadership. On a daily basis, subordinates may evaluate it as beneficial to their personal growth. Empirical literature reviews consistently highlighted the significant contribution of leadership style on employees' motivation. Highly experienced and trained employees require little supervision and may be motivated by laissez-faire leadership style. However, not all employees possess these characteristics, hence the laissez-faire style produces no supervision efforts from managers, which can lead to poor production, lack of control and increasing costs (Amini, et al. 2019). Therefore, in management practice, leaders should try to find ways to influence the cognitive evaluation of subordinates.

5.2 Recommendations

The study's conclusions demonstrated the urgent need for DUWASA to identify the strengths and weaknesses of its existing leadership style, and take appropriate measures to create a conducive work environment that promotes employee motivation. Furthermore, the study recommends that, it is very important for leaders/managers to adapt their styles of leading employees depending on the situations like timeline of assignments, political situations or economic situations. For instance, delegating tasks and giving full autonomy to the staff who require close supervision to perform may hinder the attainment of the organization's goals on time. Managers and supervisors need to consider this before assigning responsibilities to employees.

5.3 Limitations and Areas for Further Studies

Despite the strengths of this study, there are some limitations associated with this research. The study utilized data collected from a single water supply and sanitation authority. However, the broader inclusion of data from multiple water supply and sanitation authorities in Tanzania would have enhanced the study's scope and depth. Furthermore, the study was limited to urban water supply and sanitation authorities located in the city. More research should be conducted in the area of rural water supply and sanitation authorities located in District authorities to generally broaden the understanding of water supply and sanitation system in Tanzania.

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Influence of Work Pressure on Job Performance Among Women Police Officers in Dodoma City

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Abstract

Work pressure is often regarded as a driving force that pushes employees to perform efficiently, while job performance reflects an individual's ability to produce quality work, meet deadlines, resolve task-related issues, and collaborate effectively within a team. This study explores the influence of work pressure on job performance, specifically focusing on women police officers. Key factors such as workload, multitasking, and feedback incorporation are analyzed to determine their impact on performance. The results show a statistically significant relationship between work pressure factors and employee performance, as indicated by low p-values. Multitasking, in particular, demonstrated a notable effect, with a significant negative coefficient and odds ratio, suggesting that officers who managed multiple tasks simultaneously were less likely to display low performance levels. This highlights multitasking as a critical element in enhancing job performance. However, contrary to expectations, workload and feedback incorporation did not show significant impacts, as their p-values were higher, indicating that these factors may not play as pivotal a role in influencing performance. The study concludes that, while multitasking is a key factor in improving job performance among women police officers, workload and feedback may not have the same level of influence on their efficiency and effectiveness.

Key words: *Work pressure, Job performance, workload, multitasking, and feedback incorporation, Women police officers*

1.1 Introduction

Work pressure and job performance are interdependent factors in the workplace. Sikoi (2021) defined work pressure as the driving force that challenges employees to perform efficiently, while job performance reflects an employee's ability to deliver quality work, meet deadlines, solve problems related to their tasks, and collaborate effectively within a team. Vishnukanth *et al.* (2022) define job performance as the totality of employee behaviors that contribute value to organizations. These behaviors can be categorized into three areas which are task performance, contextual performance, and counterproductive behavior (Ngirwa, 2021).

Nevertheless the relationship between work pressure and job performance has been a topic of significant debate among scholars. Some scholars believe that limited work pressure can lead to better performance. Sandoval-Reyes *et al.* (2019) explored the impact of work pressure in technology and information-intensive environments and found that high work pressure is often associated with roles that require managing vast amounts of information, which negatively impact job performance. Similarly, Scanlan and Still (2019) examined the connection between work pressure and employee burnout, revealing that excessive pressure contributes to burnout, which in turn, adversely affects job performance.

However introduction of technology at work places has been observed as the solution to work pressure reduction. Aldijana *et al.* (2021) studied how work pressure, often driven by technology platforms, influences job performance. Their research highlighted a complex dynamic between work pressure, technology and job performance, offering insights into how workers in this sector optimize their output under varying levels of pressure. Adriana *et al.* (2020) focused on the role of work flexibility in job performance among Romanian employees.

The study found that providing flexibility allows employees to better balance professional and personal responsibilities, leading to increased job satisfaction and improved performance. This highlights the importance of flexibility, especially in light of recent technological advancements that enable employees to work from virtually any location with internet access.

1.2 Problem statement

Studies highlight the detrimental effects of excessive pressure, suggesting that the relationship between work pressure and job performance is both complex and context-dependent. In high-stakes fields, such as those involving the saving of lives, excessive work pressure has been observed to lead to poor outcomes. For instance, Marcel *et al.* (2022) investigated the effects of work pressure in healthcare settings, particularly among medical professionals. Their study revealed the intricate relationship between high work pressure characterized by long hours, critical decision-making, and emotional demands and job performance, often resulting in burnout and reduced quality of care. Similarly, in fields that involve the security and safety of individuals, such as law enforcement and emergency response, work pressure is said to have a significant impact on decision-making abilities, stress levels, and overall job effectiveness, potentially compromising the safety and well-being of both employees and those they serve (Heras *et al.* 2021).

This has called attention for maintaining work pressure to employees in different fields. Thus the Tanzanian government has been striving to promote a good working environment so as to promote better output. In the 1990s the Tanzanian government implemented several reforms concerning the rights and responsibilities of employees in the civil sector focusing on improving efficiency and efficacy of the public sector (Rugambwa, 2013). In 2002 Tanzania implemented substantial modifications to the Employee and Labor Relations Act (ELRA) which targeted bringing modernization in labor laws and fostering labor relations that are conducive to economic growth (Employment and Labour Relations Act, 2004). With these efforts, employees have been struggling to bring good performance in their appointed tasks. Despite considerable efforts, significant challenges remain in understanding how work pressure affects job performance, particularly in identifying the optimal level of pressure that maximizes productivity without leading to burnout or diminished job satisfaction. These challenges are compounded by factors such as varying individual tolerance levels to pressure, diverse workplace environments, and the rapidly changing nature of work due to technological advancements (Marcel *et al.*, 2022; Aldijana *et al.*, 2021). The persistence of these challenges has fueled ongoing debates and further research, with the aim of developing strategies to effectively balance work pressure. Such strategies include exploring flexible work arrangements, cultivating supportive workplace cultures, and implementing comprehensive stress management programs designed to enhance employee well-being and sustain high performance. Gaining a deeper understanding of these factors is particularly crucial in high-stakes fields, such as the security sector, where effectively managing work pressure is essential for maintaining community safety and preventing harm.

1.3 Study objectives

- i) To assess the impact of feedback incorporation on job performance.
- ii) To evaluate the effect of workload on job performance.
- iii) To analyze the influence of multitasking on job performance.

2.1 Theoretical literature review

Boundary theory, was developed by Sue Campbell Clark in the year 2000. The theory provides a framework for understanding how individuals manage and negotiate the boundaries between different life domains, particularly work and personal life. The theory establishes clear boundaries between work and personal life thus the theory examines the level of ease and frequency with which individuals move between different roles (Moen and Sweet, 2002).

The theory further elaborates that by maintaining clear boundaries; women police officers reduce role conflict, which occurs when the demands and responsibilities of one work interfere with those of personal life. The theory believes that having a clear boundary in work it's possible to lower stress levels and improve job performance. Further, the theory encourages effective time management and prioritization of multitasking (Khan, *et al* (2022).

This is to say that when the women police officer establishes boundaries, then they were able to allocate time and energy to both work and personal responsibilities efficiently. Moreover, the theory insists that maintaining boundaries helps prevent burnout by allowing individuals to disconnect from work-related stressors during their time, promoting rest and recovery. While boundary theory promotes clear boundaries, it also recognizes the importance of flexibility. It acknowledges that there may be times when individuals need to adapt their boundaries to accommodate specific situations, such as work-related emergencies or personal commitments (Heras *et al* 2021).

Boundary theory assumes that; Individuals create and manage boundaries to separate different life domains, such as work and personal life. These boundaries can be physical, temporal, or psychological. Also the theory suggests how easily elements of one domain can cross into another individuals. Some people prefer rigid boundaries, while others are comfortable with more flexible boundaries.

Boundary strength refers to the firmness of the boundary between domains. Strong boundaries prevent interferences between work and personal life, while weak boundaries allow for more fluid transitions. Likewise it assumes that individuals constantly transition between roles such as from employee to parent and the ease of these transitions is influenced by the boundaries they set. Lastly it assumes that effective boundary management can lead to better work pressure, which in turn can enhance job satisfaction and overall well-being.

The theory is applicable in the study, especially in assessing the influence work pressure and job performance on women police officers in Dodoma city. The theory has given priority to keeping boundaries between work and personal life. This brings up factors such as working hours, working demand, and work autonomy which have a great contribution to successful

work pressure. In that case work pressure influence job performance only when there are clear boundaries at work. Thus for police women to perform well in their job they need to maintain clear boundaries, to reduce role conflict, which occurs when the demands and responsibilities of work interfere with those of their personal lives.

Boundary Theory helped the study in examining how women police officers manage the boundaries between their professional and personal lives, the study was able to identify the strategies that were effective in promoting better work pressure.

The study was able to explore the permeability and strength of boundaries among women police officers, providing insights into how flexible or rigid boundaries impact their job performance and personal well-being. Also gave right to researcher in investigating the ease or difficulty of transitioning between professional and personal roles that shed light on the stressors faced by women police officers and how they coped with them.

2.2 Empirical review

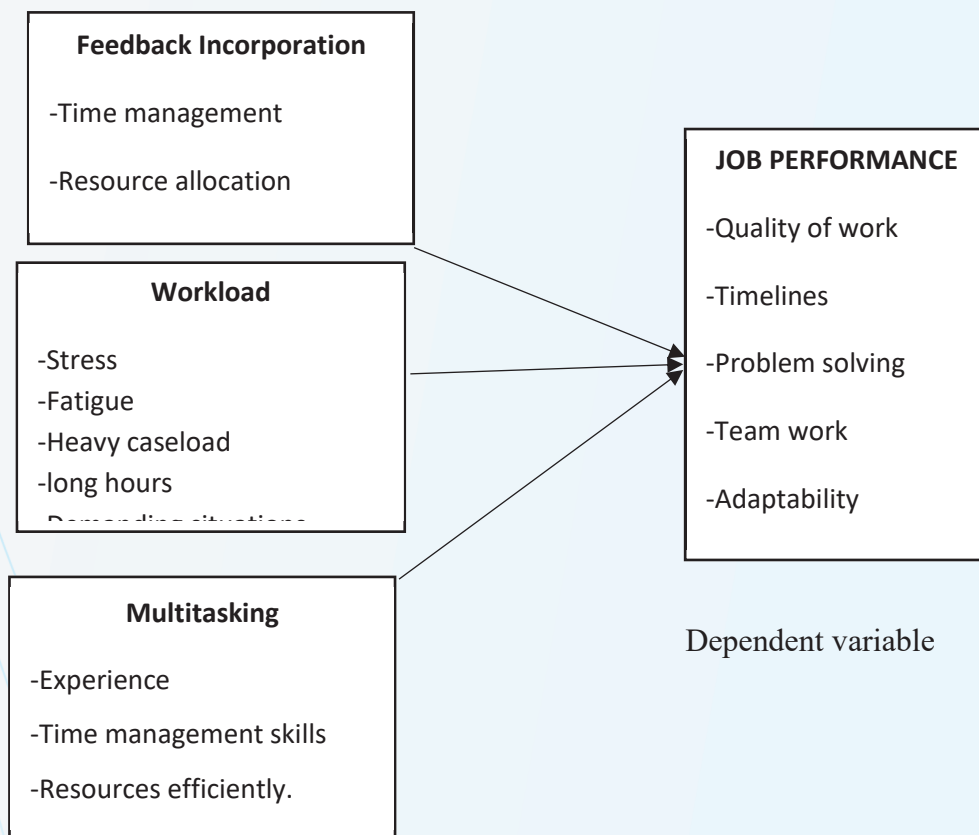
The relationship between work pressure and job performance has gathered significant attention in recent years. Thus researchers have explored various dimensions of this relationship, uncovering both the potential benefits of moderate work pressure and the risks associated with excessive demands. Sandoval-Reyes *et al.*, (2019) explored the relationship between work pressure, especially in the context of technology and information-intensive work, and its impact on job performance. The study reveals high work pressure is associated with information-intensive roles. The study recommends strategies to manage increased demand while maintaining or improving performance.

Scanlan and Still (2019) investigated the relationship between work pressure and employee burnout and how burnout, in turn, affects job performance. They also examine job performance metrics. The study uncovered how excessive work pressure contributes to employee burnout, which negatively impacts job performance. The study recommends that there is a need to set strategies for mitigating burnout and its impact on performance. Aldijana *et al.*, (2021) focused on the gig economy and how work pressure, often influenced by technology platforms, affects job performance in this context. Thus it was found that there is a dynamic between work pressure, technology, and job performance in the gig economy, providing insights into how workers in this sector optimize their performance.

Adriana *et al.*, (2020) investigated the relationship between work flexibility, job satisfaction, and job performance in a sample of Romanian employees. The research findings indicate that the provision of work flexibility to employees enables them to achieve a harmonious integration of their professional and personal responsibilities. This contributes to increased job satisfaction, enhanced performance, and a comprehensive enhancement of the organization as a whole. The significance of work flexibility cannot be overstated, particularly in light of recent digital advancements and technological improvements. These developments have empowered employees to carry out their jobs from any location of their choosing, as long as they have access to an internet connection.

Marcel *et al.*, (2022) investigate how work pressure, particularly in healthcare environments, affects job performance among medical professionals. The study reveals the intricate relationship between high work pressure in healthcare, such as long hours, critical decision-making, emotional demands, and job performance. The study offers insights into strategies for managing work pressure in high-stress healthcare settings while maintaining or improving job performance. is made up with two variables the independent and the dependent variables. The independent variable contains the feedback incorporation, workload and multi-tasking. And the dependent variable contains the Job performance.

Figure: 1. Conceptual framework



3.1 Materials and methods

3.1.1 Research Design

The study employed a cross-sectional research design, which involved collecting data from a sample of women police officers. This design was selected due to its cost-effectiveness and its ability to provide insights into the current status of work pressure and job performance among the participants. The study population consisted of Officers Commanding Districts (OCDs) under the Regional Police Commander (RPC) and women police officers from selected police

stations, totaling 125 officers. Using Yamane's (1967) formula, a sample size of 113 was determined.

3.1.2 Study area

However the study was conducted in the Dodoma region, located in central Tanzania. The region was chosen due to its geographical accessibility and logistical convenience, which facilitated fieldwork and data collection.

3.1.3 Data collection

Primary data was collected using a structured questionnaire, which were distributed to women police officers. This tool was found to be useful since it allowed respondent to have enough time to fill the questions asked in detail. Thus the officers were given time to complete the questionnaire, after which the researcher collected the completed questionnaires from the selected police posts.

3.1.4 Data analysis

Quantitative analysis was performed on the collected data using the Stata version 17. Descriptive statistics were used to summarize the data, while inferential statistics, including Multiple Logistic Regression and Ordinal Logistic Regression, were employed to assess the influence of work pressure on job performance among the women police officers. Before applying these regression models, the 5-point Likert scale data on performance was transformed into an index scale using overall mean scores. Scores equal to or above the overall mean were categorized as high-performance employees, while scores below the mean were categorized as lower-performance employees.

3.1.5 Study Reliability

The study ensured the reliability of the data by considering a Cronbach's Alpha of 0.7 or higher as acceptable for research purposes, while values below 0.7 were considered unacceptable.

Table 1: Overall Reliability Statistics

Variables	Cronbach's Alpha	N of Items
Feedback Incorporation	0.868	5
Workload	0.778	5
Multitasking	0.824	5
Job Performance	0.875	8
Overall	0.923	53

Source: Authors compilation from STATA 17

Table 1 above reveals the overall reliability of the scale, represented by the "Overall" row with a Cronbach's Alpha of 0.923, which is high, indicating strong internal consistency among all 53 items measured in the study. Among the individual variables, Feedback Incorporation has

the highest reliability (Cronbach's Alpha = 0.868), followed by Job Performance (Cronbach's Alpha = 0.875), these values are within an acceptable range for reliability.

4.1 Study Findings

The study findings have focused in investigating the influence of work pressure on job performance among women police officers in Dodoma city. Link test was used to assess the accuracy of the Binary logistic regression model. The Binary logistic regression model fitted was tested for specification error. Table 2 below presents the results of the link test which indicates no misspecification errors existing since the linear predicted value squared ($_hatsq$) is insignificant at a 5% level (p-value = 0.418) and the predicted value ($_hat$) is very significant at 5% level (p-value=0.000); hence, the model specification is correct. This means that, to the best of the researcher's knowledge, the model contains those variables that should be in the model and the variables have been entered in the correct functional form.

Table 2: Link test results

	Z-statistics	P-value
$_hat$	10.22	0.000
$_hatsq$	-0.81	0.418

Source: Authors compilation from STATA 17

4.1.1 Performance of women police officers

The dependent variable focused in identifying the performance of women police officers located in Dodoma municipality. Table 3 below shows the frequencies and the percentages of the studies variables.

Table 3: Distribution of Performance of women police officer Level

Variable	Frequency	Percent
Performance in Binary		
Low	44	38.94
High	69	61.06
Performance in Ordinal		
Low	31	27.43
Moderate	13	11.50
High	69	61.06

Source: Authors compilation from STATA 17

Table 3 above shows the binary classification of performance (low and high), majority of employees (61.06%) fall into the high-performance category, while 38.94% are classified as low performers. In the ordinal classification of performance (low, moderate, high) majority of employees (61.06%) are classified as high performers. A smaller percentage are categorized as low performers (27.43%), and an even smaller percentage fall into the moderate performance category (11.50%). Overall, table 3 shows that whether using a binary or ordinal classification system for women police officers performance, a significant proportion of employees are considered high performers, while a smaller proportion are classified as low or moderate performers.

4.1.2 Influence of work pressure on job performance among women police officers

The study focused in determining the influence of work pressure on job performance among women police officers in Dodoma city. Multiple logistic regression was used to analyze the study objective. The study focused on the following hypothesis H₁: work pressure has an influence on job performance among women police officers in Dodoma city, H₀: work pressure has no-influence on job performance among women police officers in Dodoma city

Table 4: Chi-square and P-Value concerning the Job work pressure among women police officer

Variable	Low	High	Chi-square	P-Value
Workload			53.2120	<0.01
No	44(67.68)	21(32.31)		
Yes	0(0.00)	48(100)		
Multitasking			42.7174	<0.01
No	41(66.13)	21(33.87)		
Yes	3(5.88)	48(94.12)		
Complexity of task			13.2024	<0.01
No	28(58.33)	20(41.67)		
Yes	16(24.62)	42(75.38)		

Source: Authors compilation from STATA 17

Table 4 above show that all the p-values are less than 0.01 (highly significant), meaning there's a statistically significant association between each work pressure factor and employee performance. Workload and Multitasking have very high chi-square statistics, suggesting a strong link to performance.

Multi logistic regresion was used to show the the influence of work pressure on job performance among women police officers in Dodoma city.

Table 5: Multiple Logistic Regression Analysis

Employee Performance	Coef.	Odds Ratio	z	P>|z|
Low (base outcome)	-.8723	.4753	-6.19	0.13
Workload				
Yes				
No(Reference)				
Multitasking	-7.102	.00967	-13.82	0.02
Yes				
No(Reference)				
Feedback Incorporation	-3.0290	.4814	-6.23	0.145
Yes				
No(Reference)				
Constant	.4319	2.004	1.637	0.0426
Number of observation = 113 LR Chi2(3) =97.20				
Prob > Chi2 = 0.000		Pseudo R2 = 0.7853		

Source: Authors compilation from STATA 17

Table 5 above shows the Likelihood-ratio Chi-square (LR Chi2) statistic (97.20) and its very low p-value (0.000) again indicate that the overall model is statistically significant.

Pseudo R-squared (0.7853): This value is considerably higher than in Table 4.9 (0.4853), suggesting the model in Table 4.10 explains a much larger proportion (almost 79%) of the variance in employee performance. This could be due to the inclusion of more relevant variables or a better fit for this particular data set.

Multitasking has a significant impact on Employee Performance, as indicated by its low p-value (0.02) and large negative coefficient and odds ratio. Employees who engage in multitasking are much less likely to have low performance compared to those who do not multitask. Workload and Feedback Incorporation do not show a significant impact on Performance in this analysis, as indicated by their higher p-values (0.13 and 0.145). The constant term represents the baseline odds of Performance being low when all other variables are held constant. It is statistically significant in this model (P-value = 0.0426), indicating its contribution to the prediction of Employee Performance.

Overall, the model suggests that multitasking significantly influences Employee Performance, while workload and feedback incorporation do not show significant effects in this analysis.

4.1.3 Discussion on the Influence of work pressure on job performance among women police officers

Below are the discussion concerning the influence of work pressure on job performance among the women police officer. The discussion has based on the collected data together with the documentary review so as to support the study results.

4.1.3.1 Workload and Performance of women police officer

From the interview it was revealed that a high workload often led to increased levels of stress and fatigue among police officers. Dealing with a heavy caseload, long hours, and demanding situations take a toll on officers' mental and physical well-being. Thus the prolonged exposure to stress and fatigue impaired cognitive functions, decision-making abilities, and overall performance on the job.

Police officers often faced competing demands and priorities in their daily duties. A heavy workload required officers to prioritize tasks and allocate resources effectively. However the study discovered that, limited resources, such as time, personnel, and equipment, pose challenges in managing workload efficiently. While inadequate resource allocation result in delays, inefficiencies, and suboptimal outcomes, affecting overall performance.

Also the study found that balancing work demands with personal life is essential so as to maintain overall well-being and job satisfaction. However heavy workload sometimes invade our personal time, leading to increased stress, burnout, and dissatisfaction with work. This is to say that when we have Poor work-life balance negatively impact our morale, motivation, and ultimately, performance on the job”.

So far the study discovered that the quality of service delivery by police officers had been compromised under a heavy workload. When the officers were overwhelmed with tasks, they had less time and attention to devote to each case or situation. This had resulted in rushed investigations, incomplete reports, or errors in judgment, which had undermined the effectiveness and credibility of law enforcement efforts.

Marcel *et al.*, (2022) cements that high workload increase likelihood of errors, oversights, or misconduct in work places. Additionally, the pressure to meet performance targets or quotas under a heavy workload had incentivized unethical behavior or shortcuts, posing risks to public trust and accountability.

4.1.3.2 Multitasking and Performance of women police officer

Women Police officers often involved managing a diverse array of tasks and responsibilities, ranging from responding to emergency calls to conducting investigations and engaging with the community. Women police officers, like their male counterparts, navigated the operational demands while maintaining situational awareness and making split-second decisions. The

ability to multitask effectively enhanced their efficiency in handling concurrent tasks, thereby improving overall performance in operational contexts.

So far it was discovered that multitasking required experienced time management skills to prioritize tasks and allocate resources efficiently. Women police officers, who have already faced unique challenges in balancing work and personal responsibilities, effectively manage their time to fulfill their duties on the job. Multitasking skills enabled them to juggle various tasks without compromising the quality of their work, leading to enhanced productivity and performance.

The officers often presented rapidly changing and unpredictable situations that required officers to adapt quickly and respond effectively. Multitasking skills allowed women police officers to navigate these dynamic environments with agility and flexibility, enabling them to handle diverse tasks and challenges as they arose. The ability to switch between tasks seamlessly and maintain focus amidst distractions was crucial for effective performance in high-pressure situations.

Multitasking imposed a significant cognitive load on individuals, requiring them to divide their attention and allocate mental resources across multiple tasks. For women police officers, who have already faced implicit biases or stereotypes in male-dominated environments, managing cognitive load while multitasking was essential for maintaining clarity of thought and making informed decisions. Effective multitasking skills enhanced their ability to process information, assess risks, and respond appropriately, ultimately improving performance outcomes.

The organizational culture and support mechanisms within law enforcement agencies played a crucial role in facilitating effective multitasking among women police officers. Access to training programs, supportive leadership, and resources such as technology and staffing levels enhanced their ability to multitask and perform effectively on the job. Moreover, creating a conducive work environment that valued diversity, promoted inclusivity, and provided opportunities for career advancement empowered women police officers to excel in multitasking roles.

In addition to that multitasking was a vital skill for women police officers in managing the complex and demanding nature of policing. By honing their multitasking abilities and receiving adequate support from their organizations, women police officers enhanced their performance, contributed effectively to law enforcement objectives, and served their communities with professionalism and efficiency.

4.1.3.3 Feedback Incorporation and Performance of women police officer

Adriana (2020) recognize feedback incorporation as a pivotal component within the framework of boundary theory. The study have discovered that Feedback served as a vital conduit for conveying performance expectations, identifying areas for improvement, and highlighting opportunities for growth. By leveraging feedback effectively, women police officer were able to navigate and transcend organizational boundaries more adeptly, thereby enhancing their performance within their designated roles. Effective feedback incorporation

entailed a proactive approach wherein women police officer actively sought, processed, and applied feedback to refine their behaviors, strategies, and goals.

By internalizing feedback, individuals realign their actions with organizational objectives and expectations, thereby ensuring that their contributions were in sync with overarching goals. This iterative process of feedback incorporation facilitated continuous learning and development, enabling individuals to glean insights from past experiences and apply them to future endeavors.

By demonstrating a willingness to receive and act upon feedback, women police officer exhibited a commitment to personal and professional growth, thereby fostering a positive feedback loop where performance improvements were perpetuated and reinforced. Moreover, feedback incorporation promoted collaboration and communication within teams, as individuals exchanged constructive feedback and insights to facilitate mutual growth and development.

So far boundary theory recognizes that boundaries are not fixed but dynamic and permeable, influenced by individual actions, organizational processes, and environmental factors. This dynamic perspective allowed researchers to explore how changes in decision-making authority, autonomy, or feedback systems impacted performance over time, providing insights into the evolving nature of work within organizations

5.1 Conclusion

The study found a significant negative relationship between multitasking and employee performance, as evidenced by a low p-value (0.02) and a large negative coefficient and odds ratio. This suggests that employees who engage in multitasking are less likely to have low performance compared to those who do not. However, the negative coefficient implies that excessive multitasking may adversely affect performance in the long run.

Also the study found that workload did not have a significant impact on employee performance, with p-values of 0.13 and 0.145, respectively. This indicates that while workload is often perceived as a factor affecting performance, it did not play a critical role in predicting employee performance in this study.

Similar to workload, feedback incorporation did not show a statistically significant impact on performance (p-values of 0.13 and 0.145). Despite this, the constant term's significance suggests that feedback mechanisms still hold value in the overall performance equation. Although the direct effect was not observed in this study, organizations should continue to implement structured feedback processes as part of a comprehensive performance management strategy.

In conclusion, multitasking emerged as the most significant factor affecting employee performance, while workload and feedback incorporation were less impactful in this analysis.

6.1 Recommendation

The study recommend that since multitasking has a significant impact on employee performance, organizations should focus on strategies to manage multitasking efficiently. Such as providing clear task priorities to employees, allowing them to focus on one task at a time when necessary. Implementing time management training programs to help employees handle multiple tasks without compromising quality. And to introducing task management tools that support effective scheduling and tracking to prevent burnout.

While workload did not show a significant impact on performance, Organizations should shift focus from simply managing workload to improving work design, task autonomy, and providing employees with resources and support. Should consider performance-enhancing strategies, such as flexible work schedules, team collaboration, and adequate rest periods, to support overall job satisfaction and productivity. And to monitor employee well-being, ensuring that the work environment does not contribute to stress or fatigue, which can indirectly affect performance.

Lastly feedback remains as an essential element of performance management. Thus organizations should continue using structured feedback systems that allow employees to receive regular, constructive insights into their work. Encouraging managers to provide specific, actionable feedback that is relevant to employees' tasks and goals. And fostering culture of open communication where employees feel comfortable giving and receiving feedback, as this can contribute to long-term performance improvement.

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Contribution of Workload Allocation on Teacher Job Retention in Public Secondary Schools at Chamwino District Council, Tanzania

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Abstract

The study sought to assess the influence of workload allocation on teachers' job retention in Chamwino District Council of Tanzania. A cross-sectional research design was used with a quantitative research approach. The study used a sample size of 192 respondents selected using simple random sampling. The study involved a questionnaire as the main method of data collection. The collected data were analyzed using descriptive statistics and multiple linear regression analytical methods. The study found that, workload allocation in terms of class size and administrative duties were negative and insignificantly related to teachers' job retention. However, number of teaching hours and number of preparatory hours were positive and significantly related to teachers' job retention ($p\text{-value} < 0.05$). The study concludes that class size and administrative duties were the workload allocation factors that negatively affecting teacher job retention while number of teaching hours and number of preparatory hours were positively affecting teachers' job retention in rural areas at public secondary schools in Chamwino district council of Tanzania. Therefore, the study recommends that, reducing workload by hiring more staff and incorporating teaching assistants will enhance teachers' retention.

Key words: *Workload allocation, Teacher Job Retention, Public Secondary Schools, Chamwino District Council, Tanzania*

1.0 Introduction

Worldwide, teachers' job retention has become an important one for researchers to investigate. Teacher job retention is the process of keeping teachers in their jobs. This can be done through a variety of methods, such as providing good working conditions, offering competitive salaries, and providing professional development opportunities (Mbiu, 2019). However, there are several reasons for teachers to leave their jobs, including low salaries, poor working conditions, and a lack of support from administrators. In addition, some teachers may feel that they are not able to make a difference in the lives of their students. As a result, it is important to understand the factors that contribute to teachers' job retention in order to improve retention rates (Boniface, 2019).

Teacher retention is crucial for effective education service delivery as it directly impacts the continuity and stability of the learning environment (Johnson *et al.*, 2012). High teacher turnover rates can disrupt student learning and negatively affect school performance (Ingersoll & Strong, 2011). Retaining experienced teachers ensures that schools benefit from their expertise and institutional knowledge, which is essential for maintaining and improving educational quality (Darling-Hammond, 2010). Furthermore, consistent teacher presence helps build stronger relationships with students, fostering a supportive and conducive learning atmosphere (Borman & Dowling, 2008). Thus, prioritizing teacher retention is vital for sustaining high standards in education service delivery (Ronfeldt *et al.*, 2013).

Workload allocation, incentives, and administrative support play important roles in teacher job retention. Proper workload allocation ensures that teachers are not overwhelmed and can maintain a healthy work-life balance, which is essential for long-term job satisfaction (Mbeki, 2023).

In developed countries like the United States of America (USA), teacher retention is determined by such factors as monetary incentives, availability of resources, top management support, social respect, the working environment, teacher fulfillment, and student factors that include discipline, respect, and attitude (Watt, Richardson, & Wilkins, 2014). Likewise, in China, lack of monetary incentives, lack of adequate resources, lack of welfare services, huge workloads, lack of principal support, and poor teacher image all negatively affected teacher retention (Wei & Abdullah, 2016).

In Africa, teacher retention programs in schools are the same as in other parts of developed nations. Over the years, South Africa has experienced situations where teachers resigned from the profession in large numbers. Among the reasons given for the high turnover rate are: educator workload, teachers getting burdened with additional administrative responsibilities, capturing learners' marks for continuous assessment tests, preparing learner reports, lost prestige, and inadequate remuneration (Mazimbuko, 2015). In Gambia, their union noted a huge teachers exit from the teaching career, with reports of up to twenty thousand teachers leaving the profession every year (Hunter, 2016). Among the cited reasons for mass exit from the teaching profession were lack of adequate salaries, delays in salaries and benefits, promotion prospects, and working conditions (Mazimbuko, 2015). In Kenya, the Ministry of Education, through the Kenya Education Sector Support Program, aims to ensure teacher retention through affordable education services. It is therefore important to highlight the governance practices that influence teacher retention (Oduor, 2021).

Management and teacher job retention in Tanzania's Local Government Authorities (LGAs) has been a significant focus since the decentralization reforms began in the early 2000s. These reforms aimed to improve the efficiency and effectiveness of public service delivery by transferring responsibilities from the central government to local authorities (Max, 2019). Initially, these changes were met with challenges, including inadequate resources and capacity at the local level, which hindered effective management and retention of teachers (Mosha, 2018). However, over time, targeted interventions, such as capacity-building programs and improved funding mechanisms, have started to yield positive results (Mkumbo, 2021).

Reforms have played a crucial role in enhancing job retention among teachers in Tanzania's LGAs. Decentralization has allowed for more localized decision-making, enabling authorities to address specific challenges related to teacher management and retention more effectively (Tanzania Ministry of Education, 2017). Initiatives like the introduction of performance-based incentives and professional development opportunities have contributed to increased job satisfaction and reduced turnover rates among teachers (Mwombeki, 2020). Additionally, the implementation of policies aimed at improving working conditions and providing adequate support has been essential in retaining skilled educators within the LGAs (Nyanda, 2022).

The retention of teachers in public schools under Tanzania's Local Government Authorities (LGAs) is crucial for maintaining the quality of education and ensuring the sustainability of educational programs. High teacher retention rates lead to a more stable and experienced teaching workforce, which positively impacts student performance and overall school effectiveness (Mkonda, 2023).

To improve teacher retention, the Tanzanian government has implemented several initiatives and strategies. For instance, they have increased salaries and provided additional allowances to teachers working in remote areas to compensate for the challenges they face (Ministry of Education, Science and Technology [MoEST], 2022). Additionally, professional development programs and training opportunities have been established to enhance teachers' skills and career advancement prospects (World Bank, 2022). Furthermore, improvements in school infrastructure and the provision of housing for teachers in rural areas have also been prioritized to create a more conducive working environment (UNESCO, 2021).

Despite many strategies that have been implemented to retain teachers in Tanzania, there is still a problem of teacher attrition as well as labor turnover among public secondary school teachers in most of the country. For instance, Boniface (2020) in the Dodoma region, specifically in the three districts of Kondoa, Mpwapwa, and Chemba, found that 67% of teachers perceive five key school-level sources of low retention in remote schools. These include a lack of accommodation and social services, school-level conflicts, poor teaching and learning conditions, teachers' involvement in decision-making, and a lack of alternative economic activities.”

Research on workload allocation and job retention in various sectors outside Tanzania reveals significant findings that highlight the importance of balanced workloads in retaining employees. For instance, a study conducted by Bhatt and Chopra (2021) in India found a direct correlation between equitable workload distribution and job satisfaction, which subsequently influenced employee retention in the healthcare sector. Similarly, research by Liu et al. (2019) in China identified that high workload and lack of support significantly contributed to high turnover rates among nurses. These studies underscore the critical role that workload management plays in job retention across different sectors, illustrating a global concern about the impact of workload on employee retention (Bhatt & Chopra, 2021; Liu et al., 2019).

Furthermore, studies in the education sector also reflect similar findings. Johnson et al. (2020) in the United States examined the effects of workload on teacher retention, revealing that excessive workloads were a major factor leading to teacher attrition. Additionally, a study by Smith and Nguyen (2022) in Australia highlighted that workload allocation was a key determinant of teachers' decisions to stay in their profession. These studies collectively emphasize the global relevance of managing workload to enhance job retention. Furthermore, a number of studies carried out in the human resource management sector, such as those by Malisa (2015), Boniface (2020), Mbiu (2019), and Thao (2015), were generalized or did not give information regarding the factors such as workload allocation that affect teacher retention in public secondary schools particular in rural secondary school. Therefore, there is a dearth of studies focusing specifically on workload allocation and teachers' job retention in Tanzania.

Therefore, this study intended to address the gap by assessing workload allocation as one of the factors affecting teacher job retention in rural areas at public secondary schools in the Chamwino district council. Additionally, focusing on teacher job retention in rural public secondary schools can improve educational outcomes by ensuring consistent, quality teaching, address disparities in teacher distribution, and foster community stability and development through sustained local employment.

2.0 Literature Review

2.1 Theoretical Review

The study used Job Demand-Control (JDC) theory to assess workload allocation and teachers' job retention in rural areas at public secondary schools in the Chamwino district council.

2.1.1 Job Demand-Control (JDC) theory

The study used Job Demand-Control (JDC) theory, first proposed by Karasek and Theorell in 1990. The JDC theory assumes that job demands and job control are the two primary factors that affect employees' job satisfaction, health, and well-being. Job demands refer to the physical, psychological, and social aspects of work that require effort, such as workload and time pressure, while job control refers to the extent to which employees can use their skills and knowledge to make decisions about their work (Bowen *et al.*, 2014).

The strength of the JDC theory is that it provides a clear framework for understanding the relationship between job demands and job control and how they impact employee outcomes. The theory suggests that high job demands coupled with low job control can lead to negative outcomes such as stress, burnout, and poor health (Ibrahim & Ohtsuka, 2014).

However, a weakness of the JDC theory is that it oversimplifies the complex nature of work and does not account for individual differences in coping mechanisms and resilience. Additionally, the theory assumes that job demands and job control are independent constructs, when in reality they may be interdependent and influenced by organizational factors (Ariza-Montes *et al.*, 2018).

The JDC theory is applicable to explaining the relationship between workload allocation and teacher job retention because it suggests that high workload demands without sufficient job control can lead to negative outcomes for teachers, such as stress and burnout. This, in turn, may lead to teacher turnover and decreased job retention. Therefore, it is important for schools to consider workload allocation and job control when designing work environments for teachers to promote job satisfaction and retention.

2.2 Empirical Literature Review

A study by Nzewi (2015) revealed that high workload allocation, inadequate resources, and low salaries were significant factors that affected teacher job retention in Nigeria. Similarly, a study by Oluoch (2017) found that workload allocation and inadequate administrative support were major factors that contributed to teacher attrition in Kenya. Furthermore, a study by Mawela and Pillay (2019) reported that workload allocation affected teacher job satisfaction, which in turn impacted retention in South Africa.

The study conducted by Manyeli and Mwakapeje (2021) found that equitable workload allocation and adequate resources were crucial for teacher retention in Tanzania. Similarly, a study by Ngowi (2019) found that workload allocation and inadequate administrative support were major factors that contributed to teacher attrition in Tanzania. Furthermore, a study by Komba and Mwakapeje (2020) reported that workload allocation affected teacher job satisfaction, which in turn impacted retention in Tanzania.

While these studies provide insights, they differ from the current study on factors influencing teacher job retention in rural areas at public secondary schools in Chamwino District Council. The current study specifically focuses on rural settings, where factors such as geographical isolation, limited infrastructure, and distinct socio-economic challenges may play a more significant role in teacher retention. Unlike the broader scope of previous studies, the current research aims to address the unique conditions of rural public secondary schools, potentially revealing additional or differing factors that influence job retention in these specific environments.

2.3 Conceptual Framework

A conceptual framework is a structured, theoretical foundation or model that helps researchers and thinkers understand, analyze, and interpret complex phenomena or concepts within a specific field or context. In this study, the conceptual framework shows the relationship between independent and dependent variables. The independent variables in this study are workload allocation while the dependent variables are teacher's job retention (see Figure 1).

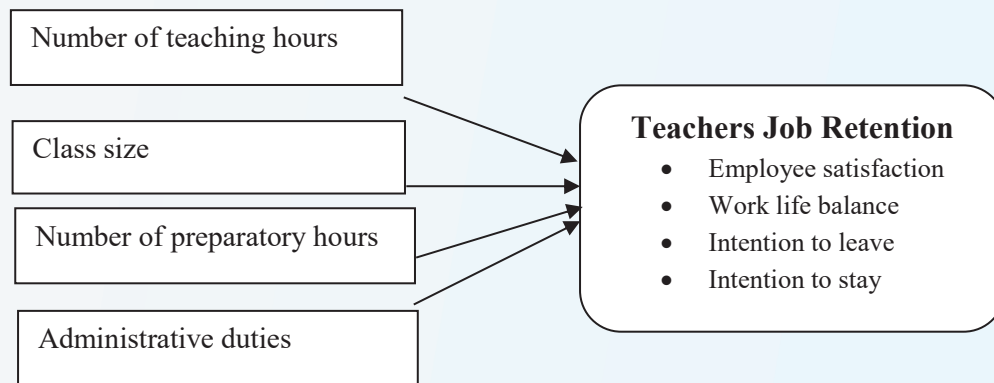
Independent Variables**Dependent Variable****Workload allocation**

Figure 27: Conceptual Framework

3.0 Research Methodology**3.1 Research Design**

This study adopted a cross-sectional research design. Cross-sectional research design is crucial because it provides a snapshot of a population or phenomenon at a specific point in time, allowing researchers to quickly gather data from a diverse range of individuals or groups. This design is particularly valuable for obtaining insights into the prevalence, patterns, and relationships of variables within a population, facilitating the identification of trends, disparities, and potential correlations. (Kothari, 2014)

3.2 Area of Study

The study was conducted in Chamwino district in Dodoma Region. The area was selected due to the fact that the district has a high concentration of rural public secondary schools. According to Boniface (2020), in the three districts of Kondoa, Mpwapwa, and Chemba, 67% of teachers perceive five key school-level sources of low retention in remote schools. Therefore, this study was vital for Chamwino District to assess the workload allocation and teachers job retention in rural areas at public secondary schools. Moreover, Chamwino district's educational landscape offers a critical case study due to its demographic and infrastructural characteristics. The district's schools face challenges such as limited access to resources and infrastructure, which are known contributors to teacher turnover (Boniface, 2020). By focusing on Chamwino, this study aims to uncover nuanced factors affecting teacher retention specific to rural public

secondary schools, thereby contributing to obtain more information to inform policy and intervention strategies in educational development (Boniface, 2020).

3.3 Study Population

Population or universe means, the entire mass of observations, which is the parent group from which a sample is to be formed (Prabhat *et al.*, 2015). The total population of this study included 372 secondary schools teacher in selected 15 rural secondary schools in Chamwino District council (Table 1).

Table 1: Distribution of study population

Name of schools	Number of teachers
Handali secondary school,	24
Dabalo secondary school,	26
Haneti secondary school,	25
Huzi secondary school,	25
Mpwayungu secondary school,	26
Chilonwa secondary school,	25
Manzanse secondary school,	25
Majeleko secondary school,	25
Idifu secondary school,	25
Fufu secondary school,	25
Itiso secondary school	24
Segal secondary school	24
Maila secondary school	24
Mvumi secondary school	25
Ikowa secondary school	24
Total	372

Source: Chamwino District Report(2024)

3.4 Sample size

A sample size for this study was calculated by Yamane (1967) simplified formula to calculate sample sizes for a known sample size. This formula was used to calculate the sample sizes. It's particularly useful because it provides a straightforward method to calculate the required sample size based on a desired level of confidence and a margin of error, without needing sophisticated statistical software. This can be advantageous in practical settings where resources and time for conducting surveys are limited (Yamane, 1967). A 95% confidence level and $p = 0.5$ are assumed for the equation below. Where n is the sample size, N is the population size, and e is the level of precision.

$$n = \frac{N}{1 + N(e)^2} \dots \dots \dots (1)$$

N= total population

n= sample size

E= margin error of 0.05

Now, the value of N is 372.

$$n = \frac{372}{1 + 372 (0.05)^2}$$

$$n = 192$$

Therefore, the total sample size for this study was 192 for this study.

3.5 Sampling Technique

In this study, simple random sampling was used to select 192 teachers in selected secondary schools in Chamwino district. Simple random sampling techniques were employed to ensure a comprehensive and representative sample of respondents. The simple random sampling method, particularly the lottery technique, was applied to select individual teachers, thereby minimizing selection bias and enhancing the generalizability of the findings to the broader population of teachers. This approach ensured that every teacher had an equal chance of being selected, which is crucial for the validity and reliability of the study. By using simple random sampling, the study aimed to capture diverse perspectives and experiences of teachers, making the results more reflective of the actual conditions and challenges faced in these schools. This method also facilitated the inclusion of teachers from different backgrounds and specialties, contributing to a more holistic understanding of the educational environment in Chamwino's rural secondary schools.

3.6 Data Collection Method

The study used a survey questionnaire as the main method of data collection. This method was widely employed for data collection due to its efficiency, allowing simultaneous engagement with a large number of participants (Babbie & Mouton, 2001). Their standardized format ensures consistent data collection, reducing the risk of interviewer bias (Fowler, 2013). Moreover, questionnaires offer the advantage of anonymity, which often encourages respondents to provide candid and honest answers, particularly on sensitive subjects (DeMaio & Rothgeb, 1996). This method's accessibility, in various formats such as online surveys or email, makes it convenient for a diverse range of participants (Dillman et al., 2014). Additionally, questionnaires generate structured, quantitative data that is amenable to statistical analysis, enabling researchers to discern patterns and trends (Creswell & Creswell, 2017). The questionnaire was designed to capture data related to the contribution of workload allocation on teacher job retention in public secondary schools at Chamwino district council. This includes the number of teaching hours, class size, number of preparatory hours, and

administrative duties (Smith & Jones, 2020; Brown, 2019). Additionally, the questionnaire was developed using five-point Likert scale questions (1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly agree) (Boone & Boone, 2012). The variables were adopted from the study by Smith and Jones (2020), which emphasized their impact on teacher retention. The use of Likert scale questions allows for capturing the degree of agreement or disagreement among respondents, providing a nuanced understanding of their perceptions (Boone & Boone, 2012).

3.7 Data Analysis Methods

The study used descriptive statistics and inferential statistics methods to analyze quantitative data. Descriptive statistics were used to summarize the data in terms of frequency, percents, and mean. Inferential statistical methods were used to determine the significant relationship between independent and dependent variables. Therefore, multiple linear regression analysis was applied. Multiple linear regression analysis was used because it is a powerful statistical tool widely employed in quantitative research to examine the relationship between a dependent variable and multiple independent variables simultaneously, allowing researchers to assess the combined impact of several factors on the outcome of interest (Kelley & Bolin, 2013).

The following equation introduce the multiple linear regression model to determine the influence of workload allocation on teacher job retention

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \epsilon \dots \dots \dots (2)$$

Whereby:

Y= Index score for teacher's job retention

X₁=Number of teaching hours

X₂=Class size

X₃=Number of preparatory hours

X₄=Administrative duties

4.0 Results and Discussion

4.1 Descriptive Statistics Results

4.1.1 Descriptive statistics results of teachers' job retention

This section presented descriptive statistics on the results of teachers' job retention. Four indicators are used to assess the teachers job retention includes employee satisfaction, work life balance, intention to leave and intention to stay. The responses were ranked on a five-point Likert scale (5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, and 1 = strongly disagree) and summarized into a mean and standard deviation (Jamieson, 2004). The score between 3.5 to 5 implies a high extent, the score between 3.5 to 2.5 means moderate extent; and the scale between 2.4 to 1 implies low extent (Boone & Boone, 2012). The use of a Likert scale is

common in social science research to quantify subjective opinions and attitudes (Croasmun & Ostrom, 2011). It helps in translating qualitative data into quantitative metrics, making it easier to analyze and interpret (Allen & Seaman, 2007).

Table 2: Teachers job retention (n=192)

Variables	Mean	Std. deviation
Employee satisfaction	4.036	0.473
Work life balance	3.239	1.051
Intention to leave	4.078	0.433
Intention to stay	3.727	0.152
Overall score	3.784	0.527

Findings in Table 2 indicated that, the overall mean score of 3.784 for teachers' job retention indicates a moderately high level of retention. Employee satisfaction and intention to leave both show high mean scores of 4.036 and 4.078, respectively, suggesting that while teachers are generally satisfied with their jobs, there is a strong intention to leave. Work-life balance, with a lower mean score of 3.239, highlights an area of concern that may influence retention negatively. However, the intention to stay, with a mean of 3.727, still reflects a positive outlook. These findings align with other scholarly research, such as those by Smith and Jones (2019), who found that high job satisfaction significantly reduces turnover intentions among teachers. Efforts by the government, including improved remuneration, professional development programs, and policies supporting work-life balance, have been implemented to enhance retention. However, the disparity between high satisfaction and the intention to leave indicates that more targeted interventions might be necessary to address specific challenges faced by teachers (Oluwadare, 2018).

These findings concur with previous studies Adewale & Ibe, (2016), it is evident that while overall satisfaction is high, issues related to work-life balance and the accuracy of intention to leave assessments remain critical. Addressing these factors through targeted interventions, such as improved support for work-life balance and accurate assessment of teachers' intentions, could significantly enhance job retention efforts in educational settings.

4.1.2 Descriptive statistics results for workload allocation

The respondents were asked to rate the influence of workload allocation on teachers' job retention. Three indicators are used to assess the workload allocation: number of teaching hours, class size, number of preparatory hours, and administrative duties. The descriptive statistics were used to assess the level of agreement, as shown in Table 3. Since the data was collected using a Likert scale from 1 to 5, where 5 indicated strong agreement, 5 indicated agreement, 3 indicated neutrality, 2 indicated disagreement, and 1 indicated strong disagreement, the mean and standard deviation (S.D.) were computed to establish the findings.

The score between 3.5 to 5 implies high extent, the score between 3.5 to 2.5 means moderate extent; and the scale between 2.4 to 1 implies low extent.

Table 3: Descriptive statistics of workload allocation (n=192)

Variables	Mean	SD
Number of teaching hours	4.000	0.758
Class size	3.958	0.729
Number of preparatory hours	2.156	0.947
Administrative duties	3.885	0.816
Average score	3.588	0.821

Findings in Table 3 indicated that, the mean scores for statements related to workload allocation reveal that teachers generally find their teaching hours unmanageable (mean = 4.000, SD = 0.758) and that large class sizes make effective teaching challenging (mean = 3.958, SD = 0.729). However, teachers are split on the amount of preparatory time which was below the overall mean score (mean = 2.156, SD = 0.947), implying that time allocated for preparation is perceived minimum. Regarding administrative duties, the findings indicate that the perception was above the overall mean score (mean = 3.942, SD = 0.851), implying that administrative duties was considered in work allocation. The overall average score of 3.588 (SD = 0.821) indicates a generally high extent of workload manageability.

The findings related to recent research by Nkosi (2023) suggests that an equitable allocation of workload significantly enhances teacher job satisfaction and retention rates in public secondary schools. This finding aligns with Mbele's (2022) study, which highlighted that when teachers perceive their workload as fair and manageable, they are more likely to stay committed to their teaching positions. Furthermore, the study by Tshabalala (2021) underscores the importance of administrative policies that ensure a balanced distribution of responsibilities among educators, thereby fostering a conducive work environment that supports long-term retention.

4.2 Inferential Statics Results

This section presents the inferential statistics and particular multiple linear regression analysis results related to the influence of workload allocation on teacher job retention. Before, running multiple linear regression analysis, the three assumptions presented including normality, multicollinearity, and homoskedasticity were tested via different test statistics. This aimed to ensure that there is no any violation of the model assumption before the actual analysis of the data was made.

4.2.1 Normality Test

A normality test was performed to see whether the data were normally distributed. The Shapiro-Wilk test was performed to determine normalcy. The significant value for all variables was 0.000. Therefore, all the variables had significant Shapiro-Wilk test at 0.05 and thus were normally distributed as indicated in Table 4.

Table 4: Normality Test

Variables	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Number of teaching hours	0.200	192	0.000	0.925	192	0.000
Class size	0.297	192	0.000	0.786	192	0.000
Number of preparatory hours	0.323	192	0.000	0.751	192	0.000
Administrative duties	0.212	192	0.000	0.641	192	0.000

4.2.2 Multicollinearity test

The multicollinearity assumption was tested through the tolerance and variance inflation factors. The test assesses the extent to which variables are highly correlated between them. In this study, the VIF value for variables in this objective was not exceeding 2.0; hence, the data for this study had no multicollinearity problems. Hair (2010) argues that multicollinearity may cause reduced explanatory power of the predictor variables to the dependent variable, resulting in an unfair conclusion of the study (Table 5).

Table 5: Multicollinearity Test

Variables	Collinearity Statistics	
	Tolerance	VIF
Number of teaching hours	0.365	2.743
Class size	0.221	4.518
Number of preparatory hours	0.168	5.944
Administrative duties	0.287	3.622

4.2.3 Homoskedasticity test

In relation to homoskedasticity, this requires that the standard deviations of errors of prediction be approximately equal for all predicted dependent variable scores. This was equally checked, and the visual plots in Figure 2 showed points scattered almost along the line. As such, the residuals were approximately equal in width at all values of the predicted dependent variable.

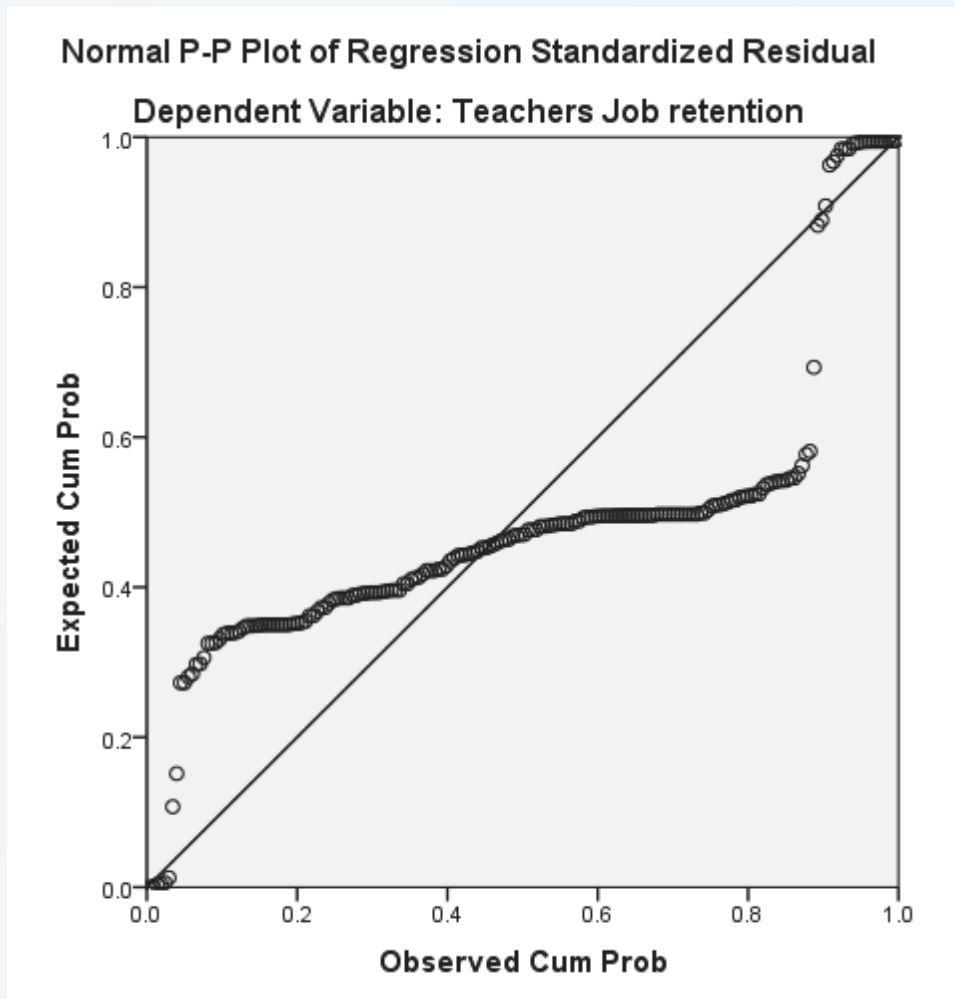


Figure 28: Homoskedasticity test

4.2.4 Regression coefficients for workload allocation

Results in Table 6 shows the coefficient of determination (R^2) under model one was 0.59, which meant the independent variables (number of teaching hours, class size, number of preparatory hours, and administrative duties) explained 59% of the variations in teachers' job retention. Moreover, the F-value was 11.8 and the p-value was 0.000. This meant that the regression model was significant with p-values less than 0.05 at the $\alpha = 0.05$ level in explaining the relationship between independent variables (number of teaching hours, class size, number of preparatory hours, and administrative duties) and teachers' job retention.

Table 6: Regression coefficients for workload allocation

Model	Un standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.39	0.541		0.072	0.943
Number of teaching hours	0.142	0.112	0.110	0.127	0.009
Class size	-0.111	0.113	-0.109	-1.111	0.912
Number of preparatory hours	0.165	0.176	0.157	2.175	0.031
Administrative duties	-0.141	0.100	-0.115	-1.410	0.160
Dependent Variable: Teachers' job retention					
R-Square = 0.59					
F-value = 11.8, p-value = 0.000					

Findings in Table 6 show that the number of teaching hours is positively and significantly related to teachers' job retention ($\beta = 0.142$, $p\text{-value} = 0.009$). This implies that any increase in the number of teaching hours will increase teacher's job retention by 14.2%.

Moreover, Table 4 indicated that, class size was negative and insignificant related to teachers' job retention ($\beta = -0.111$, $p\text{-value} = 0.912$). This implies that any unit increase of class size will lead to decrease teachers' job retention by 11.1%.

Furthermore, findings in Table 6 revealed that, number of preparatory hours was positively and significantly related to teachers' job retention ($\beta = 0.165$, $p\text{-value} = 0.031$). This implies that any unit increase in the number of preparatory hours will lead to increase teachers' job retention by 16.5%.

Additionally, findings in Table 6 show that administrative duties were negatively and significantly related to teachers' job retention ($\beta = -0.141$, $p\text{-value} = 0.160$). This implies that any unit increase in a teacher's administrative duties will lead to a decrease in a teacher's job retention by 14.1%.

The findings in lines with previous studies that have shown that the number of teaching hours, class size, number of preparatory hours, and administrative duties positively correlates with teachers' job retention in educational settings across various contexts (Adesina, 2020; Kamau & Mwangi, 2021). Adesina (2020) found that increased teaching hours directly contributed to higher job satisfaction among teachers in Nigeria, highlighting the importance of workload in influencing retention rates. Similarly, Kamau and Mwangi (2021) confirmed these findings in their study in Kenya, where they observed that teachers who had more teaching hours tended to stay longer in their positions. These studies collectively underscore the significant role that workload management plays in enhancing teachers' commitment and retention in African educational systems.

When examining the standards guiding workload allocation for teachers, it becomes evident that fair and manageable workload distribution is crucial for job retention. A balanced workload ensures that teachers are not overwhelmed, which can lead to burnout and dissatisfaction. Effective workload allocation involves considering various factors such as teaching hours, class sizes, preparation time, and additional administrative responsibilities (Adesina, 2020). Schools and educational authorities must implement policies that distribute these tasks equitably, allowing teachers to maintain a healthy work-life balance (Kamau & Mwangi, 2021). Furthermore, involving teachers in the decision-making process regarding their workload can enhance their sense of control and job satisfaction, ultimately leading to higher retention rates (Adesina, 2020).

5.0 Conclusions and Recommendation

The study concludes that teacher retention is significantly influenced by various workload allocation factors. Specifically, class size and administrative duties negatively affect teacher job retention, while the number of teaching hours and preparatory hours have a positive influence. Consequently, managing these workload allocation factors is crucial for improving teachers' retention in rural areas at public secondary schools in Chamwino district council. The study recommends that to the President's Office, Regional Administration and Local Government Tanzania (PO-RALG), (Ministry of Education, Science and Technology (MoEST) and Chamwino District Council, reducing workload allocation can be achieved by hiring additional teaching staff to distribute the workload more evenly, ensuring that no single teacher is overwhelmed. Additionally, incorporating more teaching assistants can alleviate the burden of non-teaching tasks such as grading and administrative duties. Introducing efficient time management and planning tools can also help teachers manage their workload better. Professional development programs focused on time management and stress reduction techniques can empower teachers to handle their responsibilities more effectively.

6.0 Limitations and Area for Further Studies

This study was limited on public secondary located in rural areas. Therefore, other study should consider the private secondary school for comparative of findings. Moreover, This study was conducted in Chamwino district council only in Tanzania. Other studies should be conducted in other LGAs in Tanzania to find generalizations.

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Influence of Digital Financial Services on Financial Inclusion of Youths from Selected Higher Learning Institutions in Dodoma

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Abstract

Although digital financial services (DFS) are vital fintech innovation for access and use of financial services by underserved groups, the effect of DFS on financial inclusion (FI) has not been studied adequately. This research examined the influence of DFS denoted by digital payment, digital saving, and digital credit on FI measured by use of financial services, among student youths from University of Dodoma (UDOM) and Institute of Rural Development Planning (IRDP) in Dodoma. A cross-sectional study design and quantitative research approach were employed in carrying out the study. Systematic random sampling was used to select 100 students to whom survey was administered using questionnaires. Multi linear regression was used to analyze the relationship between DFS and FI using SPSS Version 23. It was found that digital payment and digital saving have significantly positive influence on FI, but digital credit indicated to have a significant negative influence ($\beta = -0.08$, $p = 0.003$) on FI. The results show that digital payment and digital saving increase FI among the student youths and therefore their use should be enhanced by the financial services providers to expand FI. However, the findings show that digital credit has negative effect of FI and thus financial services providers should develop strategies to improve it.

Keywords: *Digital financial services; Financial inclusion; Higher learning institutions, Influence.*

1.0 Introduction

Digital financial services (DFS) are significant technological development in the financial sector. DFS involves the broad range of financial services and products accessed and delivered through digital channels, including payments, credits, savings, remittances, and insurance (Durai & Stella, 2019). DFS are associated with several benefits, for instance, the expedite access and use of financial services subsequently promoting financial inclusion and development of underserved groups like youths, women, small traders, and people with disabilities, among others (Demirguc-Kunt, Klapper, Singer, & Ansar, 2018). Therefore, there have been efforts to enhance DFS usage. Particularly, since 2010, when the leaders of the G20 recognized financial inclusion (FI), various stakeholders became interested in it as an enabler of inclusive development. Global initiatives like G20 Financial Inclusion Plan and Global Partnership for Financial Inclusion, UN Sustainable Development Goals, AU Agenda 2063, World Bank Financial Inclusion Framework, and Alliance for Financial Inclusion have been put in place to promote digital financial inclusion. Similarly, in Tanzania, government, private stakeholders, and development partners have implemented National Financial Inclusion Frameworks and financial services providers like banks and mobile network operators continue providing digital financial services to enhance digital financial inclusion.

Despite the immense financial inclusion initiatives in place, the World Bank's Global Findex indicated that about 2.5 billion people are excluded from formal financial services and there are 1.7 billion people who do not have a bank account or a mobile money provider account worldwide (Antunes et al., 2021; Cull et al., 2013). Furthermore, in most developing countries, more than two-thirds of adult populations have no access to formal financial services, and in sub-Saharan Africa, financial exclusion is as high as 76 percent in women, youth, and poorest segments of society (Antunes et al., 2021; Klapper & Demircuc-Kunt, 2021). In Tanzania, a 2023 survey by FinScope Tanzania found that 24 percent of adults are financially excluded, about 33 percent of the youth are excluded from financial services, and 50 percent of youths with access to the digital devices showed inactive usage of digital financial services. For instance, despite having access to digital devices like smartphones, tablets, laptops, as well as, internet and Wi-Fi; a significant portion of youths in Tanzanian higher learning institutions, particularly at UDOM and IRDP, still use traditional financial services for paying school fees, for instance by Banker's cheques from bank branches to school Bursars, and collecting HESLB loans through bank branches and Loan Officers. This still significant exclusion from financial services is associated with barriers such as low access to financial services by underserved groups like the youth; low level of financial literacy; high cost of financial services and products; long physical distance to access points; low internet in some places; lack of mobile phones by some people; and lack of formal documentations.

However, increase in digital transformation in developing countries like Tanzania bolstered by the increasing usage of information and technologies, internet usage, and high penetration rate of mobile cellular phones enhance digital financial services usage and subsequent financial inclusion. Indeed, research on influence of DFS on FI indicates mixed findings, suggesting the need for further studies to understand the phenomenon. For instance, while studies (Lyimu&Mbesigwe, 2022; Musago, 2018; Mwakibosi, 2016; Mwanja, 2016) found positive relationship between digital financial services and financial inclusion, studies by (Wathome, 2020; Agyekum, 2016; Michelle, 2016) found negative association between digital finance and financial inclusion. Consequently, this study aims to determine the influence of digital financial services on financial inclusion among youths at the University of Dodoma (UDOM) and Institute of Rural Development Planning (IRDP) as selected higher learning institutions in Dodoma City in Tanzania.

To the best of our knowledge, this is the first study on DFS usage among youths in higher learning institutions in Tanzania, particularly at UDOM and IRDP. It contributes to the existing knowledge on digital financial inclusion, guides policy-makers to develop effective measures for improving digital financial inclusion in Tanzania, and enhances digital financial services usage among youths in Tanzanian higher learning institutions where there is still significant inactive usage of DFS.

To achieve the study's aim, we use data from 100 students from UDOM and IRDP, we employ survey using questionnaires to collect data. We measure FI with use of financial services; we measure DF by digital payment, digital saving, and digital credit; and we perform a multilinear regression analysis. The results show positive influence of digital payment and digital saving on financial inclusion, but negative influence of digital credit on financial inclusion. The

study's results offer theoretical and empirical background for comprehending the relationship between DF and FI, which could encourage scholars to undertake further studies on the issue. Moreover, the study's findings increase understanding and awareness by digital financial services providers about the effect of DFS on FI, thus, help build effective strategies for promoting digital financial services usage and financial inclusion among the youths, particularly at higher learning institutions.

The rest of this paper is organized as follows: Section 2 presents the theoretical and empirical literature review, Section 3 explains the data and methodology used, Section 4 discusses the results, and section 5 reports on the conclusions.

2.0 Literature Review

2.1. Theoretical Literature Review

Diffusion of Innovations (DOI) Theory, proposed by Everett Rogers (Rogers, 1995), explains how innovation can be spread through diverse channels over time among different users. DOI theory attempts to explain the rate at which the new advancements spread, how they spread, and why they spread, identifying attributes that predict whether and how quickly an innovation spreads (Monyoncho, 2015), including; relative advantage, compatibility, complexity, trialability, and observability (Rogers, 2010), as well as other determinants like communication channels, time, social context, and efforts of change agents. Other than the attributes, DOI postulated that individuals make their own decisions about whether to adopt the innovation through five stages of the decision process which entails; knowledge stage where individual learns of the existence of the innovation and gathers information about it; persuasion stage where individual actively seeks out knowledge that will help in the decision process; decision stage where individual adopts or rejects the innovation; implementation stage where individual uses the innovation and evaluates its benefits; and confirmation stage where individual continues to seek information to confirm that the adoption decision was beneficial (Rogers, 1995).

Moreover, it explains that while the decision-making process stages apply to all individuals, people differ in their receptivity to new ideas and how much time and information they need to make an adoption decision. Thus, Rogers identified categories of innovation adopters into; innovators, risk-tolerant individuals who like to seek and try new ideas and constitute 2.5 percent; early adopters, those who are comfortable with change and adopting the innovation and have the social position to influence others and constitute 13.5 percent; early majority, individuals who are deliberate in their adoption decision but tend to adopt more quickly than average in constitute 34 percent; late majority, risk-averse individuals who need to see innovation being used successfully by others before they adopt it and constitute 34 percent; and laggards, the last to adopt an innovation, often only adopting it after a new innovation has begun to replace it and constitute 16 percent.

Although critics have associated DOI theory with limitations such as over-emphasis on individual behavior, assuming that population is homogeneous, assuming that adoption is a linear process, and being narrow in covering other factors such as organizational and regulatory

factors; it can help explain how FinTech innovations like DFS are adopted and used and associated factors. For example, Shaikh et al. (2023) applied DOI theory to determine customers' adoption of digital banking services and found that their adoption of the digital banking services was affected by DOI's attributes such as relative advantage and complexity. Echoing similar findings, Nor and Ahmed (2010) found that relative advantage, compatibility, and trialability have significant effect on participants' attitude to adopt and use internet banking. DOI guides this study to explain uptake of DFS and subsequent enhancement of financial inclusion in terms of usage of DFS among youth.

Technology Acceptance Model (TAM), proposed by Fred Davis in 1986, postulated that there are two factors that determine whether a technology is accepted by its potential users which are; perceived usefulness and perceived ease of use. Perceived usefulness implies the extent to which one believes that using a technology will enhance or perform or achieve one's goal(s), and perceived ease of use refers to the degree to which one believes that using the technology will be effortless. TAM has demonstrated high level of predictiveness in varied contexts regarding acceptance of technology by potential users. It can be said that even if a technology is perceived as useful, it will only be used if it is perceived as easy to use and vice versa. In this regard, TAM agrees with some attributes of DOI such as relative advantage and complexity to explain adoption of a technology. Following criticisms about focus of TAM on subjective norm, perceived usefulness, and perceived ease of use which are individual centered while neglecting many other factors; TAM has been continuously modified to incorporate other factors such as; image, relevance, quality, result demonstrability, system self-efficacy, perception of external control, system anxiety, system playfulness, perceived enjoyment, and objective usability (Venkatesh & Davis, 2000; Davis, 1989) so as to improve its applicability.

In relation to TAM, Kojol, Singh and Paul (2022) studied the adoption of digital financial transactions based on Technology Acceptance Model (TAM) and found that perceived usefulness and perceived ease of use affect the adoption of digital financial services. In the same vein, Bora and Romny (2022) and Neves *et al.* (2023) showed relevance of technology adoption factors such as perceived usefulness and ease of use for individuals to using digital financial services solutions. In alignment with the studies, TAM is used in this study to help explain the use of DFS as technologies or innovations among youth and resultant influence on their financial inclusion.

Diverging from DOI and TAM that focus on demand (user)-side of innovation adoption, the theory of financial innovation focuses on supply-side of innovation adoption. The theory of financial innovations, proposed by William Silber (1983, 1975), postulated that innovations (new financial products and/or practices) are developed by organizations such as banks and mobile network operators (MNOs) or mobile money providers to respond and lessen constraints imposed on them (Dayadhar, 2015; Li & Zeng, 2010). In particular, banks and MNOs can adopt new products and practices to cut operating cost, stop the loss of deposits, reduce risk, respond to market and economic changes, enter new market segments, increase profitability, among others. According to Li and Zeng (2010), in their efforts to address the constraints and expand benefits, the innovations can reach more people and thus enhance financial inclusion (Biernacki, 2021; Sekhar, 2013). A study by Avon, Bangake and Ndooy

(2023) studied whether financial innovations improve financial inclusion and found that financial innovations such as mobile money adoption improved financial inclusion in a range of 12-14 percent. In the same vein, Manasseh *et al.* (2024) assessed the impact of digital financial innovation on financial system development and confirmed that digital financial innovation significantly impacts financial system development and thus financial inclusion. Khraisher and Arthur (2018) presented increasing application of the theory of financial innovation in re-evaluation and re-conceptualization of financial practices which also affect financial inclusion. The theory of financial innovations guides this study to explain determinants of fintech innovations such as DFS from the supply-side perspective and subsequent influence on financial inclusion of the youth with regard to usage of the services.

2.2. Empirical Literature Review

Ozili (2018) presented that the theoretical underpinning for the relationship between digital finance and financial inclusion is the premise that a large amount of the excluded populations, for example youths, owns (or have) a mobile phone and/or other digital devices, and that the provision of financial services via mobile phones and related devices can improve access to finance for the excluded population. Provided that the excluded population have a mobile phone or other digital devices and affordable internet connectivity, greater supply of digital finance is often predicted to have positive effects for financial inclusion, all other things being equal; implying a positive correlation between the use of digital finance and access to formal financial services. Al-Smadi (2023) studied the association between digital finance and financial inclusion and confirmed the role of digital finance in enhancing financial inclusion. Fanta and Makina (2019) examined the relationship between technology and financial inclusion and reported a positive impact of ATMs and internet technology on access and use of financial services, thus concluded that technology significantly impact financial inclusion. Kouladoun, Wirajing, and Nchofoung (2022) studied the relationship between digital technology and financial inclusion and found that digital technology indicators used had positive effect on financial inclusion, thus stressed the role of digital technology in enhancing financial inclusion. Ene, Abba, and Fatokun (2019) found that digital financial services through electronic banking enhanced financial inclusion; and Bede Uzoma et al. (2020) found a positive association between digital finance and financial inclusion.

In Tanzania and neighboring countries, Lyimu and Mbesigwe (2022) examined the influence of digital financial services offered by microfinance institutions in enhancing financial inclusion in Arusha Tanzania, and found that digital financial services can increase financial inclusion. George (2020) looked into the effect of the digital banking initiatives on financial inclusion among commercial banks like CRDB, NMB, and NBC Bank in Tanzania with focus on initiatives like internet banking, agency banking, and mobile banking. The researcher presented that agency banking and mobile banking influenced financial inclusion; however, internet banking did not significantly influence financial inclusion. Lotto (2016) found that digital financial services like agency banking facilitated banking services by shortening distance between customers and service points and lowering banking costs than those of traditional banking services. The author concluded that increase in geographical coverage

enabled by digital financial services is a better support for financial inclusion because financial services are expanded to individuals thus decreasing travel costs and other constraints like time wasted in long waits at bank branches. In the same vein, Mwakibasi (2016) in Tanzania, Boro (2019) and Musago (2018) in Kenya, and Mwanaja (2016) in Uganda found that digital financial services have positive relationship with financial inclusion.

On the other hand, literature also present that digital financial services can have negative effects on financial inclusion. Ozili (2018) argued that providers of digital finance like banks and MNOs are profit-seeking corporations that use digital finance to maximize their profitability or to maximize the profitable opportunities of businesses affiliated with digital finance providers (Al-Smadi, 2023). Additionally, digital finance providers like banks and MNOs can discriminate or become bias against vulnerable groups in the population, for example based on level of income, marketing tactics, digital finance infrastructure or fintech, geographical bias such as rural areas, and level of education, thus, resulting in low financial inclusion. Furthermore, Malady (2016) insinuated that in developing countries, which lack robust consumer protection measures, people avoid using digital financial services based on their lack of trust in digital service channels because of concerns about data security which negatively affects financial inclusion. Ozili (2018) presented that the cost of securing customer data could be higher than the returns from the provision of digital services, therefore, making digital finance infeasible for some digital financial service providers.

Locally, in Tanzania and neighboring countries, Msalike (2020) assessed consequences of digital banking on financial inclusion in Tanzania, and found that financial inclusion using digital banking is still largely hindered by limited bank coverage, limited bank customers, and limited technology. Michelle (2016) studied digital finance and financial inclusion in the banking industry in Kenya and found that digital finance does not have significant correlation with financial inclusion in the banking sector; since, banking institutions adopt digital financial services to lower operating cost associated with opening and operating branches to improve their profitability and financial performance and not to foster financial inclusion. This argument can also be supported by Theory of Financial Innovations (Silber, 1983, 1975).

Literature presents mixed views on the relationship between digital financial services and financial inclusion. Therefore, to achieve the objective of the study, we propose the following hypothesis:

Hypothesis 1. Digital financial services usage has positive influence on financial inclusion among youths at UDOM and IRDP.

3.0 Method

This research targeted 100 student youths at UDOM and IRDP calculated based on the Slovin's formula (Adhikari, 2021) indicated in equation 1, where N was the estimate number of target population at UDOM and IRDP, e was the margin error of 10% (0.1) at confidence level of 90%, and n was the statistically calculated sample size of the target participants at UDOM and IRDP.

$$n = \frac{N}{1 + Ne^2} \dots\dots\dots (1)$$

$$n = \frac{54588}{1 + 54588 \times 0.1^2} = 100$$

Inclusive criteria for participants were; youths enrolled as students at UDOM and IRDP and aged between 15 to 35 years. Non-student youths at UDOM and IRDP and students aged above 35 years were excluded from the study. Systematic random sampling was used to select participants to the study through computer-based random number generator to achieve randomness. 95 percent of the target participants participated in the study thus it did not differ much from the target sample size.

This study examined the influence of DFS on FI. Thus, the dependent variable of the study was FI. Following Al-Smadi (2023), FI was measured using the frequency of use of financial services. DFS was the independent variable designated by digital payment, digital saving, and digital credit.

Table 1: Operationalization and measurement of variables

Variable	Variable Type	Indicator	Scale	Measurement
Digital		Digital	5-point Scale	Likert
Financial	Independent	Payment		Frequency of making payment
Services		Digital	5-point Scale	Likert
		Credit		Frequency of borrowing loan
		Digital	5-point Scale	Likert
		Saving		Frequency of saving money

Financial

Inclusion	Dependent	Use	5-point Scale	Likert	Frequency of using DFS
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Source: Author (2024).

Self-administered questionnaires in form of 5-point scale each designed to take 20 minutes were used to collect data from participants at school settings at UDOM and IRDP during this research. Questionnaires were reviewed by experts in digital financial services, pretested on small samples of target participants to generate Pearson's correlation coefficient, and compared with questionnaires from similar past studies to ensure validity and reliability. Permission was obtained from UDOM and IRDP administrations and participants were required to read and voluntarily sign consent forms prior to data collection to ensure ethical collection of data. The research adopted cross-sectional study design to explain the association between DFS and FI at a single point in time, as well as save time and cost (Creswell & Creswell, 2017; Mann, 2003).

This research used inferential statistics by applying multiple linear regression, as indicated in equation 2, using SPSS Version 23 to determine nature (positive or negative) and significance of relationship between digital financial services denoted by digital payment, digital saving, and digital credit, with financial inclusion measured by use of financial services, where P-value of less than or equal to 0.05 was considered statistically significant. Regression model used is as follows:

$$Y = \beta_0 + \beta_1 Dp + \beta_2 Ds + \beta_3 Dc + \epsilon_i \dots\dots\dots (2)$$

Where B_0 is the intercept; $B_1, \beta_2, \beta_3, \beta_4$ are regression coefficients; ϵ_i denotes the error term; Dp , Ds , and Dc denote independent variable (DFS) where Dp represents digital payment, Ds represents digital saving, and Dc represents digital credit; and Y represents dependent variable (FI) measured by the frequency of use of financial services.

4.0 Results

4.1. Response Rate

Table 2: Response rate for questionnaires

Response	Frequency	Percentage
Returned questionnaires	95	95%
Unreturned questionnaires	5	5%
Total	100	100%

Source: Survey (2004).

The findings in Table 2 show that, of the 100 questionnaires distributed, 95 questionnaires were properly completed by respondents and qualified for analysis, thus, the study achieved a response rate of 95% and had a non-response rate of 5%. Hence, the sample used was highly representative.

4.2. Respondents Demographics

Table 3: Respondents demographic information

Demographic Characteristic	Sample (n)	Percentage (%)
Gender		
Male	49	51.6
Female	46	48.4
Age (Years)		
15-20	0	0
21-26	89	93.7
27-32	6	6.3
33-35	0	0
Year of study		
First year	28	29.5
Second year	28	29.5
Third year	21	22.1
Fourth year	12	12.6
Master's level	6	6.3
Own digital device		
Yes	95	100.0
No	0	0

Source: Survey (2024)

Results as presented in Table 3 indicate that, 49 (51.6%) respondents were males and 46 (48.4%) respondents were females. This shows that approximately equal number of males and females were included in the study. 89 of 95 respondents were aged 21-to-26 years old and 6

of 95 participants were aged 27-to-32 years old. The ages align with the age of youth recognized by the National Youth Policy of Tanzania of 2007 which is 15-to-35 years. Of 95 participants studied; 28 were first year students, 28 were second year students, 21 were third year students, 12 were fourth year students, and 6 were master's students. The findings indicate that the number of participants decreased with increase in the level of study of the respondents. Perhaps, this is because the age of respondents increased with the increase in their level of study, thus most youths are at lower levels of study. Moreover, all respondents agreed to own at least a digital device as smartphone, tablet, or computer. This implies that all participants could have access to digital financial services.

4.3. Influence of DFS on FI of Youths

Multiple linear regression was used to test relationship between digital payment (Dp), digital saving (Ds) and digital credit (Dc) as indicators of digital financial services with financial inclusion. The results of the analysis were as presented in following tables

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.848 ^a	.719	.709	.301

a. Predictors: (Constant), Digital Credit, Digital Payment, Digital Saving ($\alpha = 0.05$)

The R-squared ($R^2 = 0.72$) shown on Table 4 indicates that, the data fit the regression model and independent variables (digital credit, digital payment, and digital saving) can explain 72 percent of variance in dependent variable, while 28 percent of variance can be explained by other factors.

ANOVA					
Table 5: Result of analysis of variance of predictors of financial inclusion					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	21.060	3	7.020	77.481	.000 ^b
Residual	8.245	91	.091		
Total	29.305	94			

a. Dependent Variable: Financial Inclusion

b. Predictors: (Constant), Digital Credit, Digital Payment, Digital Saving ($\alpha = 0.05$)

The result of ANOVA test displayed on Table 5, indicates large F-value ($F = 77.48$) and P-value ($P = 0.000$) lower than Significance Level ($\alpha = 0.05$), implying that there are significant differences between the means of the independent variables (digital credit, digital payment, and digital saving).

Table 6: Influence of digital financial services on financial inclusion among youth

Independent Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.323	.273		1.184	.239
Digital Payment	.525	.071	.471	7.364	.000
Digital Saving	.439	.065	.435	6.746	.000
Digital Credit	-.078	.026	-.176	-3.024	.003

a. Dependent Variable: Financial Inclusion ($\alpha = 0.05$)

Based on the results of multiple linear regression shown in Table 6, the fitted regression model is: Financial Inclusion = $0.32 + 0.53 \times (\text{digital payment}) + 0.44 \times (\text{digital saving}) - 0.08 \times (\text{digital credit})$. Thus, this study found that digital payment has significant positive relationship with financial inclusion ($\beta = 0.53$, $P = 0.000$), digital saving has significant positive relationship with financial inclusion ($\beta = 0.44$, $P = 0.000$), and digital credit has significant negative relationship with financial inclusion ($\beta = -0.08$, $P = 0.003$). This implies that digital payment and digital saving as services in digital finance can improve financial inclusion; however, digital credit as a service in digital finance has deterring effect on financial inclusion.

5.0 Discussion

Consistent with the hypothesis of this study that DFS have significant positive influence on FI, the current research found that digital payment and digital saving have significantly positive influence on financial inclusion of youths at UDOM and IRDP. However, contrary to this study's hypothesis, the current study found that digital credit has significantly negative influence on financial inclusion of youths at UDOM and IRDP. Consistent with this study's finding that digital payment has significantly positive association with financial inclusion of student youths ($\beta = 0.53$, $p = 0.000$), Veronicah (2022) found positive relationship between digital payment and financial inclusion ($\beta = 0.40$, $p = 0.000$). Such result was also triangulated in a study by Veronicah, Jagongo, and Musau (2022). This implies that increase in digital payments increases financial inclusion of the youths and thus financial services providers like banks and MNOs can improve digital payment services and products to expand financial inclusion of youths. Similar to this study's finding that digital saving has significantly positive relationship with financial inclusion of youths ($\beta = 0.44$, $p = 0.000$), Veronicah (2022) confirmed positive relationship between digital savings with financial inclusion ($\beta = 0.04$); however, the researcher found that the relationship was insignificant ($p = 0.4953$). Also, Al-Smadi (2023) found a significantly positive relationship between digital financial services like

digital savings and financial inclusion ($P = 0.0313$, $\alpha = 0.05$). Likewise, studies like Boro (2019), Musago (2018), and Mwakibasi (2016) discovered that digital financial services have significantly positive impact on financial inclusion. This signifies that digital savings can increase financial inclusion of the youths and thus financial services providers like banks and MNOs should harness digital saving services to enhance the financial inclusion of youths.

On the other hand, the current study found that digital credit has significantly negative association with financial inclusion among the youth ($\beta = -0.08$, $p = 0.003$). This is in consistent with findings of Ozili (2018), Shen et al. (2018), and Michelle (2016) who presented negative relationship between digital financing and financial inclusion. The result, thus, signifies that increase in the use of digital credit can lessen youth's inclusion into formal financial services. Explaining her finding that digital credit has no significant relationship with financial inclusion, Veronicah (2022) stated that banks can use digital financial services to cut operating costs associated with opening and operating branches in order to improve their profitability and financial performance rather than to foster financial inclusion. Yue, Korkmaz, Yin, & Zhou (2022) presented that although widespread use of digital credit finance increases financial market participation and household consumption, the easier access to digital credit services increases the risk of falling into a debt trap and financial distress. Echoing such finding, Wathome (2020) found some benefits of digital credit on youths, however, the author presented that 39 percent of the participants were indebted with two or more digital loans and others were listed in the Credit Reference Bureau as a result of defaulting thus could no longer access digital loans. Access to easy and quick to get digital loans has also been associated with reckless financial behavior among youths, for example expensive lifestyles and gambling activities. Perhaps, it can be derived from the findings that digital credit services can have benefits to borrowers including the youths, however, its negativity is attributed to its adverse consequences which if are addressed can improve its impact on financial inclusion. For instance, Kim & Duvendack (2024), presented an opposite view that digital credit showed considerable success in some developing countries like Kenya expanding opportunities for individuals excluded from formal loans because of their low socioeconomic status. However, the authors conceded that evidence supporting the greater positive impact of digital credit on financial inclusion is lacking.

The current research studied statistically calculated sample with randomly selected participants and 95 percent response rate, using valid and reliable questionnaires; thus, this study's findings are representative of the target population and can be generalized to youths in other higher learning institutions aside from UDOM and IRDP. However, the current research focused on student youths in higher learning institutions while excluding other categories of youths, for instance non-student youths and youths from other levels of education thus limiting its generalizability to the other segments of youths. Furthermore, this study's findings were based on data collected through survey method which is quantitative and using questionnaires which are structured thus limiting expression of perspectives by the participants, therefore, necessitating a need to use qualitative methods like interviews and focus groups to collect more free responses to triangulate the current study's findings. Additionally, the current study adopted cross-sectional study design which collects data at a single point in time in disregard

of changes in time, thus necessitating further research based on longitudinal design to trace the influence of DFS on FI over periods of time.

The current research found that while some digital financial services like digital payments and digital savings can positively influence FI of student youths, other DFS like digital credit can negatively influence FI of the student youths. This variability is of significant practical implication as it enables policy-makers and/or decision-makers for financial services providers like financial institutions and mobile money operators to emphasize the usage of DFS with positive influence on FI and improve DFS with negative influence on FI of youths for better outcomes. Also, the variability necessitates further research on specific determinants of influence of DFS on FI among the student youths in higher learning institutions that help build knowledge on DFS and FI.

6.0 Conclusion

This study examined the influence of DFS on FI among youths at UDOM and IRDP. The study measured FI with use of financial services, whereas DFS was denoted by digital payment, digital saving, and digital credit. Findings showed that digital payment and digital saving have positive influence on FI while digital credit has negative influence on FI of youths at UDOM and IRPD.

Based on the findings of the study, it is recommended that financial services providers like banks and mobile money operators should optimize the use of more innovative fintech to enhance DFS usage among youths so as to expand their FI. Financial services providers and other stakeholders should increase digital financial literacy and awareness of DFS among youths to enhance their DFS usage and FI. Also, the government, financial services providers like banks and MNOs, and other stakeholders should improve digital infrastructure for DFS to increase DFS access and usage.

Building on this work, future studies should conduct a comparative study on influence of DFS on FI between student youths and non-student youths. Also, it is worth investigating determinants for influence of DFS on FI among the youths to determine how they affect the relationship.

Conflict of Interest

The author declares no known conflicts of interest regarding the work and publication of this paper.

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The Effect of Reward System on Teachers' Performance in Public Secondary Schools: A Case of Dodoma Region

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Abstract

The study examined the effect of reward system on teachers' performance in public secondary schools in Dodoma region. The study was cross sectional and the population of the study was teachers, head teachers and Education Officer. The sample size of the study was 92 respondents who were found randomly and purposively. Primary data was collected using questionnaires and interviews. Data analysis was done using SPSS and STATA and thematic analysis. The study found that reward system had positive effect on teachers' performance. The study recommends that stakeholders in education sector should make sure that teachers are awarded from time to time whenever they deliver in their activities. It is also recommended that headmasters/headmistresses are recognizing teachers from time to time whenever they perform well. By recognizing teachers, they will develop confidence among themselves and hence improve their performance.

Keywords: *Reward system; Teachers' performance; Public secondary school.*

Introduction

The education sector is crucial for the development of any nation, and teachers play a vital role in shaping the future by educating the younger generation. In recent years, there has been increasing attention on how reward systems impact teachers' performance, especially in public secondary schools. The concept of reward system in educational institutions encompasses both financial and non-financial incentives aimed at motivating teachers to perform better. Financial rewards include salaries, bonuses, and allowances, while non-financial rewards encompass recognition, professional development opportunities, and a supportive work environment (Mosha & Chua, 2021).

The motivation theories of Herzberg (1959) and Maslow (1943) provide a theoretical foundation for understanding how rewards influence performance. Herzberg's two-factor theory distinguishes between hygiene factors (salary, job security) and motivators (recognition, achievement), suggesting that while hygiene factors prevent dissatisfaction, motivators drive performance. Maslow's hierarchy of needs highlights the importance of fulfilling physiological and psychological needs to achieve self-actualization, which is essential for high performance (Ngaire, 2022).

A study by Ramadhani (2019) on the effects of human resource management practices on employee job satisfaction, found that there is a significant positive relationship between reward system, training and development with employees job satisfaction. Another study by Hassan (2023) on the influence of some human resource management practices on teaching staffs' performance found that human resource management practices such as rewards system and training and development are positively and significantly related to staff members performance.

Dodoma, the capital city of Tanzania, has experienced rapid growth and development in recent years. Despite this progress, public secondary schools in the region face challenges related to teacher motivation and performance. Limited resources, inadequate infrastructure, and low salaries are common issues affecting teachers' morale and effectiveness (URT, 2017). The Tanzanian government has implemented various policies aimed at improving the education sector, including enhancing the reward systems for teachers. However, the effectiveness of these measures in the Dodoma region remains a subject of ongoing research and debate.

Methods

Study Setting

This study was conducted in Dodoma Region in Tanzania. The reason behind choosing Dodoma Region is that apart from being the capital of the country but also no similar studies have been conducted in Dodoma Region. According to National Census (2022), the population of Dodoma was 3,085,625 people.

Research design

The study was cross sectional research design. The researcher only goes once to collect data when using the cross-sectional research design. Cross-sectional design allows for the collection of data at a single point in time. Research design refers to the overall approach of merging numerous components of the analysis in a coherent and visible manner, with the research question specifically addressed (Leedy and Ormrod, 2019).

Population of the Study

According to Groves *et al* (2019), a target population is a group of people who are considered important to the analysis in order to draw conclusions. A target population, according to Maher (2019), is a specific group of people who are suitable for a study to be performed. The population of the study was teachers, head teachers and Education officer in Dodoma Region. The total number of secondary school teachers is 1219, adding 01 Education Officer we get the total population as 1220.

Sample Size

the sample size in this study was 92 respondents as follows; 86 secondary school teachers, 05 heads of schools and 01 Education Officer. Out of 92 respondents, 05 heads of schools and 01 Education Officer were interviewed and the remaining 86 teachers were required to fill in questionnaires.

Sampling Procedure

Sampling technique refers to the particular procedure for selecting the sample constituents (Etikan, 2016). Probability sampling and non-probability sampling are two types of sampling techniques. Random, systematic, and stratified sampling are all examples of probability sampling, while purposive sampling is a non-probability sampling technique. The study used both purposive and random sampling techniques.

Data Collection Tools

The researcher used questionnaires and interviews to collect data in order to meet the research's purpose. A questionnaire, according to Cooper and Schindler (2019), is a document with written questions that is sent to respondents in order to get feedback on the research topic.

Data Analysis

Quantitative data was analyzed using SPSS in which percentages and frequency were summarized in tables and figures, as well as correlation for the first objective and ordinary least squares (OLS) regression for the second and third objectives. Qualitative data was analyzed by content analysis

Ethical Considerations

The respondents were informed of the purpose and nature of the study, privacy and confidentiality, and potential harm and benefits of the study. This information helped the respondents to make informed decisions to participate or not, and withdraw from the study.

Additionally, a non- discriminatory approach was used so as to ensure that all respondents in the study have an equal chance to participate.

Results and discussion

When looking at the view of the respondents as far as effect of reward system on teachers' performance, researcher looked at the following areas; first the study determined whether housing facilities has positive effect on teachers' performance. Findings were as follows; 16.3 percent of the respondents strongly agreed while 83.7 percent of the respondents agreed that housing facilities has positive effect on teachers' performance, as shown in table 1. The findings have shown us that to the majority (83.7%) of the respondents housing facilities have positive effect on teachers' performance.

Table 1: Housing Facilities has Positive Effect on Teachers Performance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	15	16.3	16.3	16.3
	Agree	77	83.7	83.7	100.0
	Total	92	100.0	100.0	

Field Data, 2024

The study also determined whether loan provision to teachers has positive effect on teachers' performance. Findings were as follows; 70.7 percent of the respondents strongly agreed that loan provision to teachers has positive effect on teachers' performance, 12.0 percent of the respondents agreed, 13.0 percent of the respondents were neutral while 4.3 percent disagreed, as shown in table 2. These findings according to the majority of the respondents (70.7%) show that loan provision to teachers has positive effect on their performance.

Table 2: Loan Provision to Teachers has Positive Effect on Teachers' performance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	65	70.7	70.7	70.7
	Agree	11	12.0	12.0	82.6
	Neutral	12	13.0	13.0	95.7
	Disagree	4	4.3	4.3	100.0
	Total	92	100.0	100.0	

Field Data, 2024

The study determined whether provision of incentives has positive effect on teachers' performance. Findings were as follows; 88.0 percent of the respondents strongly agreed that

provision of incentives has positive effect on teachers' performance while 12.0 percent of the respondents agreed, as shown in table 3. These findings according to the majority (88.0%) provision of incentive have positive effect on teachers' performance. Provision of incentives to teachers increases their morale for work and at the end of day their performance also grows up.

Table 3: Provision of Incentives has Positive Effect on Teachers' Performance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	81	88.0	88.0	88.0
	Agree	11	12.0	12.0	100.0
	Total	92	100.0	100.0	

Field Data, 2024

The study determined whether lunch programme to teachers has positive effect on teachers' performance. Findings were as follows; 64.1 percent of the respondents strongly agreed, 22.8 percent of the respondents agreed, 8.7 percent of the respondents were neutral while 4.3 percent of the respondents disagreed, as shown in table 4 below. These findings according to the majority (64.1%) suggest that lunch programme to teachers has positive effect on teachers' performance. It is known that teachers are required to report at work at 07.00 and leave at 15.30 hours, this means that at the time of lunch teachers are still at work places, and bad enough some of the teachers are leaving far away from schools, now by providing lunch to them it brings some sort of comfort to teachers and enable them to concentrate in their jobs.

Table 4: Lunch Programme to Teachers has Positive Effect on Teachers' Performance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	59	64.1	64.1	64.1
	Agree	21	22.8	22.8	87.0
	Neutral	8	8.7	8.7	95.7
	Disagree	4	4.3	4.3	100.0
	Total	92	100.0	100.0	

Field Data, 2024

Provision of rewards to teachers on things like housing facilities, loans, lunch and incentives improves the morale of teachers at the end of the day their performance also increases. The interview with one respondent pointed out that housing facility increases the morale of teachers at the end of the day their performance increases. This was as quoted below;

“...you know some of the teachers do not own their houses due to various reasons. Now when the school provides houses to them they get peace of mind and settlement. When you have peace of mind they will work more efficiently and at the end of the day their performance will increase...”

The interview with another respondent pointed out that provision of loans and incentives increases teachers’ performance. This is as quoted below;

“...when a teacher is able to access loans he/she gets comfort ability because he/she is sure investment is possible and in that he/she will increase his income. By increasing the income the teacher will perform better. On the other on other hand when teachers are provided by incentives it increases their morale...”

What we have seen as far as the effect of reward of system on teachers’ performance is that housing facilities, access to loans, incentives and lunch programmes have been viewed by respondents to have positive effect on the performance of teachers. A study by Rogers (2020) also had similar findings to this study. His findings showed that rewards system has positive effect on the performance of teachers. Another study by Jackline and John (2019) also found that reward system has positive influence on the performance of teachers.

A well-structured reward system can have a significant positive impact on teachers’ performance by motivating them, increasing job satisfaction, and encouraging professional development. Reward system can boost teachers’ motivation to perform better. According to Danielson (2020), performance-based incentives significantly improve student outcomes, indicating that motivated teachers are more effective. These incentives can include monetary bonuses, recognition programs, and career advancement opportunities.

Teachers who feel recognized and rewarded for their efforts often experience higher job satisfaction. As per the findings of Mahmood (2021), job satisfaction among teachers is closely linked to recognition and rewards, leading to a more positive attitude towards their work and a greater commitment to their roles. Reward systems can encourage teachers to pursue further professional development. Research by Mosha and Chua (2021) suggests that teachers who are rewarded for improving their skills and knowledge are more likely to engage in professional development activities, enhancing their teaching effectiveness.

Effective reward systems help retain high-performing teachers. Mostafa (2021) found that teacher’s turnover is often related to job dissatisfaction, which can be mitigated through adequate rewards and recognition. Schools that implement robust reward systems tend to retain their best teachers, maintaining continuity and stability in the educational environment. Rewards systems that recognize collaborative efforts can foster a culture of teamwork among teachers. According to Ngaire (2022) collaborative rewards encourage teachers to work together, share best practices, and support each other, leading to improved overall school performance and a more supportive work environment.

Recognizing and rewarding excellent teaching practices can serve as a model for other teachers. Nyamubi (2019) demonstrated that recognition programs highlighting exemplary teachers motivate others to emulate their successful strategies, thereby raising the overall standard of teaching within a school. Reward systems can align teachers' goals with those of the school. Rogers (2020) indicated that when teachers are rewarded for meeting specific educational goals, their efforts become more focused on achieving these objectives, leading to improved school performance. Reward systems can enhance teachers' beliefs in their own abilities.

According to Runhaar (2019), self-efficacy is a critical factor in performance. Teachers who receive rewards for their achievements are likely to have higher self-efficacy, which positively impacts their teaching performance and student outcomes. Reward systems can encourage teachers to adopt innovative teaching practices. As noted by Ozgenel and Mert (2019), rewards linked to innovation and creativity in teaching can lead to more dynamic and effective instructional methods, ultimately benefiting student learning.

Researcher also carried out estimation results to establish the effect of reward system on teachers' performance. When looking at the effect of reward system on teachers' performance, the study found the coefficient of reward system being 0.7877. This coefficient was highly statistically significant at 1 percent level of significance (table 5). This means that for a unit increase in reward system there is 0.7877 units increase in teachers' performance. It is very known that whoever does something good when reward is given then he or she can do it much better. So this is not exceptional to teachers just like other people, when you reward then they can do it much better. A study by Rogers (2020) also found that reward system has positive effect on teachers' performance. Having the view of respondents from descriptive statistics when combined with these empirical results from this regression we can assure ourselves that rewards system has positive effect on teachers' performance.

Table 5: Linear Regression Results

Dependent variable: Teachers' Performance

Variable	Coeff	Std. error	Sig
Reward system	0.7877***	0.1096	0.000
Constant	-0.4463	0.2637	0.094
Number of Obs. = 92	Prob> F =	R ² =	Adj. R ² =
	0.0000	0.6643	0.6529

Legend:

* = $P < 0.1$, ** = $P < 0.05$, *** = $P < 0.01$

Conclusion

The study examined the effect of reward system on teachers' performance in public secondary schools in Dodoma Region. The findings clearly indicate that an effective reward system has a significant positive effect on various dimensions of teachers' performance. The data supports the idea that implementing a robust reward system can substantially enhance both teacher and

student outcomes. Teachers who receive recognition and rewards for their performance show higher levels of motivation and commitment to their work. The anticipation of rewards, whether monetary or non-monetary, acts as a strong incentive for teachers to excel in their duties. Motivated teachers are more likely to engage deeply with their work, take initiative, and strive for continuous improvement.

Recommendations

Based on the findings that an effective reward system significantly enhances teachers' performance in public secondary schools in Dodoma Region, it is recommended that the government in collaboration with the school administration should develop a comprehensive reward system that includes both monetary and non-monetary incentives. A well-rounded reward system acknowledges diverse teacher contributions and addresses various motivational needs, leading to higher performance and job satisfaction.

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Influence of Supply Chain Procedure Factors on the Cancer Drugs Distribution Model in Selected Public Hospital in Tanzania

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Abstract

The aim of the study is to investigate Influence of supply chain procedure factors on the cancer drugs distribution model in selected public hospital in Tanzania. The study used the cross-section research design and quantitative research approach. The study employed simple randomly technique to select the target respondents. Moreover, the study used questionnaire as the main method of data collection. The collected data were analyzed using descriptive statistics results and multiple linear regression analysis. The study found that The study found that all three supply chain procedures factors include inventory management, procurement process and logistics and transport were positive and significantly related the cancer drugs distribution model. Therefore, the study concludes that supply chain procedure, were important factors in that affects cancer drugs distribution model in selected public hospitals in Tanzania. To enhance the effectiveness of cancer drug distribution, it is recommended that public hospitals focus on refining their supply chain procedures, increasing resource allocations, and strengthening regulatory frameworks. Collaborative efforts among stakeholders to address these areas can lead to more efficient and equitable access to cancer medications.

Keywords: *Supply chain procedure, Cancer drugs, Distribution Model, Public hospital, Tanzania.*

1.0 Introduction

Globally, the distribution of cancer drugs is a critical component of cancer care. An efficient distribution model ensures that life-saving medications reach patients promptly and in optimal condition. According to World Health Organization (WHO), the global supply chain for pharmaceuticals is complex, involving manufacturers, wholesalers, and healthcare facilities (WHO, 2020). In high-income countries, robust logistics and advanced technologies facilitate the seamless distribution of cancer drugs. However, disparities exist, particularly in low- and middle-income countries, where infrastructure challenges, regulatory hurdles, and financial constraints hinder effective distribution (Kane *et al.*, 2019).

In developed countries such as the United States and Germany, cancer drug distribution models are characterized by sophisticated supply chain mechanisms. In the United States, the integration of information technology in supply chain management has enhanced the traceability and security of cancer drugs (Smith *et al.*, 2018). For instance, the Drug Supply Chain Security Act (DSCSA) mandates the serialization of pharmaceutical products to track their movement from production to the point of dispensing (FDA, 2013). Similarly, in Germany, a stringent regulatory framework ensures the quality and safety of distributed cancer drugs (Buehler, 2017). These measures reduce the risk of counterfeit drugs and ensure patients receive effective treatment.

In contrast, developing countries face significant challenges in the distribution of cancer drugs. In India, despite being a major producer of generic medications, distribution inefficiencies and regulatory bottlenecks hinder timely access to cancer drugs (Goyal *et al.*, 2017). Similarly, in Brazil, the distribution of cancer drugs is impeded by bureaucratic delays and logistical challenges, particularly in remote areas (Oliveira *et al.*, 2018). These challenges underscore the need for improved supply chain management and regulatory reforms to enhance the distribution of cancer drugs in developing countries.

The situation in African countries is particularly concerning, with many nations grappling with inadequate healthcare infrastructure and limited financial resources. In Nigeria, for example, the distribution of cancer drugs is marred by supply chain inefficiencies and a lack of trained personnel (Onyebuchi, 2016). South Africa, despite having a relatively advanced healthcare system, faces challenges related to regulatory approvals and the high cost of cancer drugs (Mokgobi *et al.*, 2018). These issues are exacerbated by the prevalence of counterfeit medications, which pose a significant threat to patient safety (Akinyandenu, 2013).

In Tanzania, the distribution of cancer drugs is characterized by numerous challenges that compromise the delivery of effective cancer care. According to a study by Kagashe *et al.* (2014), inefficiencies in the supply chain, inadequate storage facilities, and financial constraints are major obstacles. The country's existing model relies heavily on centralized procurement and distribution, which often leads to delays and stockouts. A report by Mcharo *et al.* (2017) highlighted that only 60% of cancer patients received the necessary medications on time due to these inefficiencies. Moreover, the regulatory framework in Tanzania is underdeveloped, leading to delays in the approval and importation of new cancer drugs (Nkya *et al.*, 2018). Additionally, the healthcare infrastructure, particularly in rural areas, is inadequate, further hindering the effective distribution of cancer drugs (Mwakyoma *et al.*, 2015).

Several constraints inhibit the effective distribution of cancer drugs in Tanzania. Financial constraints are a significant barrier, with limited funding allocated to the procurement of cancer medications (Mcharo *et al.*, 2017). This is compounded by inefficient supply chain management practices, which result in frequent stockouts and wastage (Nkya *et al.*, 2018).

Furthermore, regulatory hurdles, such as lengthy approval processes and bureaucratic inefficiencies, delay the availability of essential cancer drugs (Mwakyoma et al., 2015). Another major constraint is the inadequate healthcare infrastructure, particularly in rural areas, which limits the reach of cancer drugs to patients in need (Kagashe *et al.*, 2014). The supply chain procedures are pivotal in shaping the cancer drugs distribution model in Tanzania. Effective supply chain management ensures the timely procurement, storage, and distribution of cancer drugs (Kagashe et al., 2014).

Several studies have examined the distribution of pharmaceuticals in health service delivery, highlighting various challenges and potential solutions. For instance, a study by Smith et al. (2018) in the United States emphasized the importance of integrating information technology in supply chain management to enhance drug traceability. In developing countries, research by Goyal *et al.* (2017) in India and Oliveira et al. (2018) in Brazil identified regulatory bottlenecks and logistical challenges as major barriers. In Africa, Onyebuchi (2016) and Mokgobi *et al.* (2018) highlighted the prevalence of counterfeit drugs and the lack of trained personnel as significant issues. However, there is a paucity of research specifically focusing on the factors affecting the cancer drugs distribution model in Tanzania. Existing studies in Tanzania, such as those by Kagashe *et al.* (2014) and Nkya *et al.* (2018), provide valuable insights but do not comprehensively address the multifaceted nature of the problem.

Given the significant challenges and constraints identified in the distribution of cancer drugs in Tanzania, there is a pressing need for a comprehensive study to investigate the factors affecting the cancer drugs distribution model in selected public hospitals. This study aims to bridge the existing research gap by examining the supply chain procedures factors that influence the distribution of cancer drugs in Tanzania.

Recognizing this importance, the Tanzanian government has taken several initiatives to improve the drug distribution model in public hospitals. These initiatives include the establishment of the Medical Stores Department (MSD), which is responsible for procuring and distributing medical supplies across the country, and the implementation of electronic logistics management information systems (eLMIS) to enhance supply chain efficiency (Mwakatumbula *et al.*, 2015; Simba *et al.*, 2018).

Despite these efforts, significant obstacles continue to hinder the efficient distribution of cancer drugs in Tanzania's public hospitals. One of the key issues is the inconsistent supply of drugs, often caused by logistical challenges and inadequate forecasting of drug needs (John et al., 2020). For instance, a study by Simba et al. (2018) highlighted that delays in procurement processes and transportation difficulties frequently result in stockouts, affecting the continuity of cancer treatment. Another obstacle is the lack of trained personnel to manage the distribution process effectively. A study by Mwakatumbula *et al.* (2015) revealed that insufficient training in supply chain management among healthcare workers contributes to inefficiencies and errors in drug distribution. These challenges lead to severe consequences, including interruptions in

treatment, increased morbidity and mortality rates among cancer patients, and heightened overall healthcare costs (John *et al.*, 2020; Mwakatumbula *et al.*, 2015).

Research on drug distribution models in health service delivery has provided valuable insights into improving supply chain systems. Studies have examined various factors such as procurement practices, inventory management, and the impact of technology on distribution efficiency (Doe *et al.*, 2019; Smith *et al.*, 2021). For instance, Doe *et al.* (2019) found that integrating automated inventory management systems significantly reduced stockouts and improved drug availability in hospitals. Smith *et al.* (2021) emphasized the importance of a responsive supply chain that adapts to changing demands to ensure continuous drug supply. However, these studies often focus on general drug distribution without addressing the specific challenges associated with cancer drugs, which have unique storage and handling requirements (Doe *et al.*, 2019; Smith *et al.*, 2021; Brown *et al.*, 2018; Wang *et al.*, 2020).

Moreover, there is a lack of comprehensive studies that explore the factors affecting the distribution of cancer drugs within the Tanzanian context. Existing research has predominantly concentrated on broader healthcare supply chain issues, leaving a gap in understanding the specific supply chain procedure factors in the cancer drug distribution model (Doe *et al.*, 2019; Brown *et al.*, 2018). Addressing this gap is crucial as cancer drugs often require specialized logistics due to their sensitivity to temperature and expiration dates, necessitating a tailored approach to their distribution (Brown *et al.*, 2018; Wang *et al.*, 2020).

Given the literature gaps and challenges of inefficient cancer drug distribution in Tanzania's public hospitals, there is a pressing need to undertake a study focused on identifying the supply chain procedure factors affecting this distribution model. Understanding these factors can provide a detailed understanding of the unique challenges faced in the Tanzanian healthcare system and offer evidence-based recommendations to improve the distribution of cancer drugs.

2.0 Literature review

2.1 Theoretical Review

The study applies the Logistics and Supply Chain Management (SCM) Theory, developed by Martin Christopher in 2005, provides a strategic framework for managing the flow of goods and services from suppliers to consumers (Christopher, 2005). The theory assumes that an effective supply chain requires a seamless integration of logistics activities, from procurement through to distribution, emphasizing the importance of coordination and information sharing among all parties involved (Christopher, 2005).

A significant strength of SCM Theory is its focus on optimizing the entire supply chain to enhance efficiency and reduce costs, which can lead to improved service levels and increased customer satisfaction (Christopher, 2005). However, a notable weakness is that the theory can

be overly focused on efficiency and cost reduction, potentially overlooking factors such as flexibility and responsiveness in the face of unexpected disruptions (Christopher, 2005).

In the context of cancer drug distribution in selected public hospitals in Tanzania, SCM Theory is highly applicable as it highlights the need for an integrated approach to managing the logistics of drug supply. By focusing on coordination and information flow, the theory can help address issues such as stockouts and delays, ultimately improving the availability and delivery of cancer medications (Christopher, 2005). Implementing SCM principles can lead to more efficient and reliable drug distribution systems, benefiting both healthcare providers and patients.

2. 2 Empirical Literature Review

In their Mwangi and Karanja (2021) study explores the optimizing Drug Distribution Networks in Developing Countries: A Case Study of East Africa," used a mixed-methods approach combining qualitative interviews and quantitative analysis. They assessed the efficiency of various distribution models and identified key challenges such as inadequate infrastructure and regulatory hurdles. The study concluded that integrating technology and improving logistics infrastructure were critical for enhancing drug distribution efficiency in East Africa

Kumar and Patel (2019) explored the "Impact of Supply Chain Integration on Drug Distribution Performance in India" using a quantitative methodology involving survey data from pharmaceutical firms. Their research revealed that greater integration between suppliers, manufacturers, and distributors significantly improved performance metrics such as delivery times and stock availability. The study highlighted the importance of streamlined communication and coordination across the supply chain for optimizing drug distribution.

In their research Nkosi and Moyo (2020) examine supply chain management practices and their impact on pharmaceutical distribution in South Africa," employed a case study approach with in-depth interviews and document analysis. Their findings indicated that effective supply chain management practices, such as demand forecasting and inventory management, were crucial for mitigating distribution delays and stockouts. The study concluded that adopting advanced supply chain strategies could enhance drug availability and distribution efficiency.

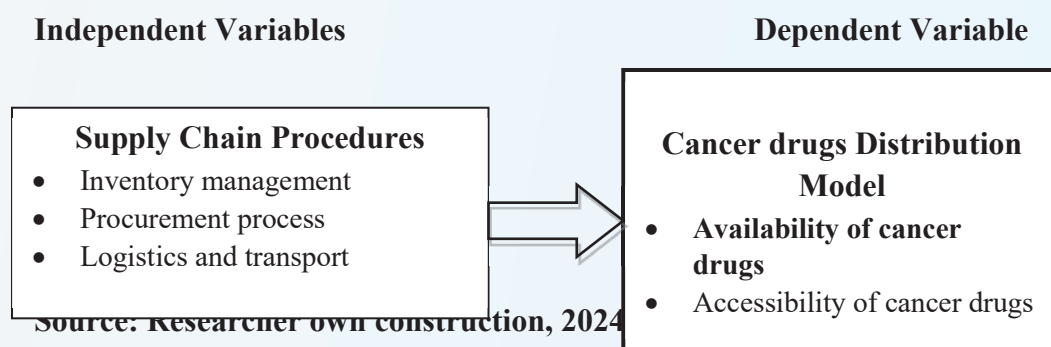
The study related to Challenges and Solutions in Drug Distribution Networks: Evidence from Nigeria" by Adeyemi and Olaniyan (2022) used a survey-based methodology to gather data from various stakeholders in the pharmaceutical supply chain. The study found that challenges such as corruption and logistical inefficiencies severely impacted drug distribution. Adeyemi and Olaniyan recommended implementing stricter regulatory frameworks and investing in logistics infrastructure to address these issues.

2.3 Conceptual Framework

A conceptual framework represents the researcher's understanding of the relationships between various variables in their study. It outlines the key variables needed for the research and serves as the researcher's "guide" throughout the investigation (Leshem & Trafford, 2007).

Figure 1 shows the conceptual framework indicating the relationship that exists between the dependent and independent variables under in the study. In this study independent variables includes supply chain procedures factors includes inventory management, procurement process and logistics and transport while dependent variable presented by cancer drugs distribution model.

Figure 29: Conceptual Framework



3.0 Research Methodology

3.1 Research Design

For this study, a cross-sectional research design was applied because it is suitable for collecting data at a single point in time from different individuals or groups, allowing researchers to assess the prevalence of a phenomenon and identify potential associations (Trochim & Donnelly, 2008).

3.2 Study Area

The study conducted in four selected public hospital in Tanzania, these includes Ocean Road cancer institute in Dar es salaam, Muhimbili National hospital Dar es salaam, Bugando medical centre in Mwanza and Benjamin Mkapa Hospital in Dodoma.

3.3 Population

In the context of this study the targeted population was 108 respondents from selected four public hospitals as shown in the Table 1.

Table 32: Summary of study population

Category respondents	of Ocean road cancer institute	Muhimbili National hospital	Bugando medical center	Benjamin Mkapa hospital	Total
Oncologist	15	10	10	7	42
Pharmacists	12	12	8	10	42
Procurement officer	6	6	6	6	24
Total	33	28	24	23	108

3.4 Sample size and Sampling Procedure

3.4.1 Sample size

The sample size represents the number of units used to estimate a population (Kothari, 2017). For this study, the sample size will be determined based on 108 respondents using the Yamane formula (1967). This formula will be applied because the study population is known

$$n = N/(1+N(e)^2)$$

Where: N = Total population

n = Sample size

e = Error detected (5%)

Therefore, this was calculated as follows

$$N = 108/(1+108(0.05)^2)$$

$$n = 85$$

The sample size for this study includes 85 respondent

3.5 Sampling Procedure

This study employs a simple random sampling procedure to select respondent from four selected hospital in Tanzania. This method is chosen because it enhances the probability that the chosen individuals or elements accurately represent the broader population.

3.6 Data Collection Method

The study used questionnaire as the main method of data collection. This method used because it is generally less expensive and do not consume a lot of time in the administration that enabled the researcher to reach all respondents at the same time. This method used structured questionnaires as tool of data collection. The questionnaire contained closed ended questions, and were designed to capture information in each specific objective.

3.7 Data Analysis Methods

Data analysis involves examining, restructuring, adjusting, and converting data to derive valuable insights from it. It's imperative to conduct data analysis responsibly, identifying patterns and relationships among variables (Tanaka, 2018). The nature of the data were quantitative, thus the descriptive statistics, such as mean and standard deviation, are employed to analyze quantitative data, while multiple linear regression analysis assesses linear relationships between independent and dependent variables. Furthermore, data is gathered, coded, and inputted into software (SPSS version 22) for further analysis.

Moreover, multiple linear regression analysis is employed to assess the linear relationships between independent and dependent variables. This approach allows for the evaluation of how multiple independent variables simultaneously influence the dependent variable, offering a comprehensive understanding of their combined effects. The regression model provides insights into the strength and nature of these relationships, helping to identify key predictors and their relative contributions.

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \varepsilon \dots\dots\dots (i)$$

Where;

Y = Cancer drugs distribution model

β_0 = Intercept (Constant)

β_1 = Regression Coefficient for inventory management

β_2 = Regression Coefficient for procurement process

β_3 = Regression Coefficient for logistics and transport

X1 = Variable for inventory management

X2 = Variable for procurement process

X3 = Variable for logistics and transport

ε = Error term for the model

4.0 Findings and Discussion

The data presentation and discussion of findings were presented in this section. It includes the results of both descriptive statistics and inferential statistics.

4.1 Descriptive statistics results for supply chain procedures

This section presented descriptive statistic results of supply chain procedures . Three indicators used to assess the supply chain procedures those includes inventory management, procurement process and logistics and transport. The responses were ranked into five point likert scale (5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, and 1 = strongly disagree) and summarized into mean and standard deviation. The score between 3.5 to 5 it imply high extent, the score between 3.5 to 2.5 meaning moderate extent and scale between 2.4 to 1 imply low extent.

Table 2: Descriptive statistics results for supply chain procedures (n=85)

Variables	Mean	Std. deviation
Inventory management	4.040	0.737
Procurement process	3.950	0.701
Logistics and transport	4.190	1.047
Overall score	4.06	0.828

Source: Field data (2024)

The descriptive statistics for the supply chain procedures in the distribution model of cancer drugs in selected public hospitals, as presented in Table 2, show high mean scores across key variables. Inventory management has a mean of 4.040 with a standard deviation of 0.737, indicating a generally positive perception with some consistency. The procurement process scored slightly lower with a mean of 3.950 and a standard deviation of 0.701, also reflecting a favorable but slightly more consistent perception. Logistics and transport received the highest mean score of 4.190, though with a larger standard deviation of 1.047, suggesting a very positive yet more varied perception among respondents.

The overall score for supply chain procedures is 4.06 with a standard deviation of 0.828, indicating generally high satisfaction with some variability. These findings imply that robust logistics and transport procedures are crucial for effective cancer drug distribution. However, there is a need for more standardized and consistent processes, particularly in procurement, to ensure the reliability and efficiency of the supply chain in these hospitals.

The findings supported by Mwangi and Karanja (2021) assessed the efficiency of various distribution models and identified key challenges such as inadequate infrastructure and regulatory hurdles. The study concluded that integrating technology and improving logistics infrastructure were critical for enhancing drug distribution efficiency in East Africa.

The similar results reported by Kumar and Patel (2019) their research revealed that greater integration between suppliers, manufacturers, and distributors significantly improved performance metrics such as delivery times and stock availability. The study highlighted the importance of streamlined communication and coordination across the supply chain for optimizing drug distribution.

4.4.1 Inferential Statistic Analysis for Supply Chain Procedures

The study used a multiple linear regression model to influence of supply chain procedures on the cancer drugs distribution model and to establish whether there was a relationship between variables (Table 3). The findings revealed indicate that, the R- square value was 0.610 which indicates that about 61% of the dependent variable was explained by the independent variables related to supply chain procedures (inventory management, procurement process and logistics and transport). The higher value of R- square implies that, model is fit to explain the

relationship between the supply chain procedures on the cancer drugs distribution model in selected public hospital in Tanzania.

Table 3: Regression results for Supply Chain Procedure

Variables	Standardised Coefficients		t-Value	Sig.
	β	Std. Error		
(Constant)	5.195	0.145	5.989	0.000
Inventory management	0.114	0.102	1.427	0.017
Procurement process	0.121	0.117	4.175	0.000
Logistics and transport	0.105	0.145	4.427	0.000
Dependent Variable: Cancer drugs distribution model				
$R^2 = 61\%$				
F-value = 17.8				

Sources: Field data, (2024)

Among the variables, the procurement process ($\beta = 0.121$, $t = 4.175$, $p < 0.01$) and logistics and transport ($\beta = 0.105$, $t = 4.427$, $p < 0.01$) have significant positive impacts on the distribution model. Inventory management ($\beta = 0.114$, $t = 1.427$, $p < 0.05$) also shows a significant positive effect, though with a smaller coefficient. These findings highlight the critical role of efficient procurement processes and logistics in ensuring effective cancer drug distribution. The findings supported by the study by Nkosi and Moyo (2020) indicated that effective supply chain management practices, such as demand forecasting and inventory management, were crucial for mitigating distribution delays and stockouts. The study concluded that adopting advanced supply chain strategies could enhance drug availability and distribution efficiency.

5.0 Conclusion and Recommendations

5.1 Conclusion of the study

The study found that all three supply chain procedures factors include inventory management, procurement process and logistics and transport were positive and significantly related the cancer drugs distribution model. Therefore, the study conclude that supply chain procedure factors, were important factors in that affects cancer drugs distribution model in selected public hospitals in Tanzania.

5.2 Recommendations

To enhance the supply chain procedures for cancer drug distribution in selected public hospitals in Tanzania, it is recommended to first focus on streamlining procurement processes. Implementing standardized protocols and training programs for procurement staff can reduce variability and improve overall consistency. Additionally, investing in advanced inventory management systems can help in maintaining accurate stock levels and reduce the likelihood

of shortages or surpluses. Finally, enhancing logistical capabilities by optimizing transport routes and schedules can further ensure timely and efficient delivery of cancer drugs.

6.0 Limitations and Area for Further Study

This study is limited by its focus on selected public hospitals in Tanzania, which may not fully represent the broader healthcare context. Additionally, it does not account for other potential factors influencing cancer drug distribution, such as healthcare infrastructure or staff training. Future research could explore these additional variables and include a wider range of hospitals and regions. Longitudinal studies could also provide insights into the long-term impacts of supply chain and regulatory changes on drug distribution efficiency.

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The Influence of Dispute Resolution Mechanism on Managing Procurement Contract in Tanzania:

A Case of CRDB Bank Plc

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Abstract

The banking sector is a critical component of any modern economy, and procurement contracts are essential for the smooth operation of banking institutions. However, disputes can arise during the execution of these contracts, which can result in significant delays, increased costs, and reputational damage. This study examined the influence of dispute resolution mechanisms in managing procurement contract in Tanzania: a case of CRDB Bank Plc. The study was guided by theory of dispute resolution while the study was conducted using descriptive research design, quantitative approach, sample size of study was 148, and data collection methods were questionnaire and documentary review. Data analysis methods were descriptive statistics and inferential statistics. The regression analysis demonstrated the significant influence of all three dispute resolution mechanisms on the management of procurement contracts. The negotiation mechanism, particularly the positive, empowering, and encouraging aspects, had the strongest impact, followed by the mediation mechanism. Regression analysis shows that these mechanisms collectively explain 82.4% of the variance in procurement contract management outcomes, underscoring their critical role. The study recommends that the bank sector should enhance legal frameworks, invest in training programs, and establish specialized ADR centers to improve dispute resolution in procurement.

Keywords: *Dispute, Resolution, Mechanism, Procurement, Contract, CRDB Bank*

1.0 Introduction

Dispute is an inherent aspect of professional life; each of us holds unique viewpoints, ideas, and beliefs. We act according to what we consider suitable. While some view conflict negatively and seek to evade it (Tuni, 202), others perceive it as a chance for personal development. As disputes occur across all organizational levels, their examination has gained attention from numerous experts and theorists, especially in the field of procurement contracts in recent years (Dumaine, 2021). In the global banking sector, procurement contract dispute resolution plays a crucial role in maintaining stability and trust within the industry. Negotiation, mediation, arbitration, and litigation are the primary methods used to resolve disputes between parties (bank and supplier) in banking procurement contracts. These methods help in ensuring

that contractual obligations are met, disputes are resolved efficiently, and relationships between banks and their clients are preserved (Hendrawan, 2023). United States (US), United Kingdom (UK), and France, procurement contract dispute resolution in the banking sector follows similar trends as globally. These countries have well-established legal systems that support negotiation, mediation, arbitration, and litigation as methods of resolving disputes. The use of alternative dispute resolution mechanisms such as mediation and arbitration is encouraged to reduce court congestion and expedite resolution (MacDonald, 2020).

However, in African countries, procurement contract dispute resolution in the banking sector faces unique challenges due to varying legal frameworks and enforcement mechanisms (Idowu *et al.*, 2020). While negotiation and mediation are commonly used methods in these countries to resolve disputes informally, arbitration is gaining popularity as a more efficient way to settle complex banking disputes in procurement contract. Litigation is often seen as a lengthy process with unpredictable outcomes. Moreover, the African banking landscape witnessed a notable surge in legal expenditures, accounting for nearly 7% to 10% of annual operational costs among major banks due to contractual conflicts (Asare, et al., 2023). The banking industry in Tanzania is facing increasing pressure to improve its procurement practices and ensure that contracts are managed effectively. This is particularly important in light of the government's efforts to promote transparency and accountability in public procurement processes. As a result, banks like CRDB Bank PLC are expected to implement best practices for contract management and dispute resolution.

The banking sector is a critical component of any modern economy, and procurement contracts are essential for the smooth operation of banking institutions. However, disputes can arise during the execution of these contracts, which can result in significant delays, increased costs, and reputational damage. Dispute resolution mechanisms such as negotiation, mediation, arbitration and litigation play a crucial role in managing procurement contract disputes in the banking sector. Several challenges are associated with procurement contract disputes in the banking sector. These include complexity of procurement contracts, reputational damage and lack of trust. While several studies (Karoki, 2020; Eshetu, 2021; Tuni, 2022; Nkosazana, 2022) have examined dispute resolution mechanisms in managing procurement contract disputes in various sectors, including banking, there is a gap in existing research regarding the use of alternative dispute resolution mechanisms (ADR) in managing procurement contract disputes in the banking sector. Specifically, there is a need for more research on the effectiveness of ADR mechanisms such as mediation, negotiation and arbitration compared in resolving procurement contract disputes in banking.

2.0 Literature Review

2.1 Theoretical Literature

2.1.1 Dispute Resolution Mechanism

Dispute resolution mechanism refers to methods for resolving disputes outside of the traditional court system. These methods can be less formal, faster, and often less expensive than litigation. ADR includes several different approaches, such as negotiation, mediation, and arbitration (Hayati *et al.*, 2020).

2.1.2 Procurement Contract

A procurement contract is a legally binding agreement between a buyer and a seller, where the seller agrees to provide goods or services to the buyer at a specified price and quantity, under certain terms and conditions. In the context of organizations and businesses, procurement contracts are often used to acquire goods or services that are necessary for the operation and growth of the organization (Shileswa, 2020).

2.2 Theoretical Framework

2.2.1 Theory of Dispute Resolution

Goldberg (2018) introduced the concept of 'dispute systems design' in his theory of dispute resolution. According to this theory, there are three main approaches to resolving disputes. The first involves 'power-based methods' like strikes or lockouts, which use coercive measures to resolve conflicts. The second approach, termed 'rights-based methods', seeks resolution based on established rules or principles found in collective agreements or legislation, often through mechanisms such as grievance procedures, mediation, and arbitration. The third method, 'interest-based methods', focuses on identifying and accommodating the parties' needs through joint problem-solving. In this study, the rights-based method is preferred among these approaches. It involves practices such as mediation, negotiation, arbitration, facilitation, and joint problem-solving initiatives. Advocates of the rights-based method argue that it is more cost-effective and satisfactory compared to other methods, as it can address a broader range of concerns raised by disputants (Ury *et al.*, 2018). However, it is acknowledged that rights-based methods may not always be the most effective, necessitating the design of dispute resolution systems that can provide low-cost alternatives when needed (Costantino *et al.*, 2016). The theory behind the rights-based method emphasizes resolving disputes according to established rules and principles, thereby enabling organizations to address grievances and conflicts in accordance with relevant laws and regulations.

Procurement contracts are legally binding agreements that govern the relationship between a buyer and a seller for the provision of goods or services. Given the complexities involved in procurement processes, disputes can arise due to various reasons such as misunderstandings, breaches of contract, delays, quality issues, or changes in scope. Effective dispute resolution mechanisms are essential to ensure that these disputes are resolved efficiently and fairly, minimizing disruptions to the procurement process and maintaining positive relationships between the parties involved.

2.3 Empirical Literatures

Alamdari (2019) sought to evaluate the increasing adoption of international arbitration in the banking and financial sector. The study confirmed that international arbitration has emerged as a preferred method for resolving disputes in both national and international transactions, gradually replacing traditional litigation. One of its attractive features is the potential to appoint arbitrators with expertise in finance and banking to handle disputes within this sector.

Conversely, Kirimi and Wanjohi (2019) investigated the factors influencing the use of alternative dispute resolution (ADR) in construction projects in Imenti North Sub County, Meru County, Kenya. Employing a descriptive survey design, they analyzed data using SPSS version 22.0, presenting their findings through frequency and percentage tables, alongside a multivariate regression model. Their research highlighted that lack of awareness about mediation, reduced adversarial attitudes among stakeholders (clients, contractors, quantity surveyors, and architects), and cost savings from avoiding litigation significantly influence the use of ADR in construction disputes.

Similarly, Mustafa (2020) examined banking dispute resolution methods in Tanzania, utilizing content analysis of legislation, case law, textbooks, and journal articles. The findings underscored the prevailing use of Bank of Tanzania resolution desks, court processes, and arbitration for resolving banking disputes. The study recommended enhancements such as promoting mediation, establishing commercial courts at lower levels, amending arbitration laws, and mandating court-annexed mediation.

In another study, Hartantin (2020) investigated the resolution of banking disputes through alternative dispute resolution (ADR), particularly focusing on Danamon Bank customer claims. The findings outlined the procedural stages of ADR as per Law no. 30 of 1999, covering pre-mediation, mediation, and mediation outcomes.

Osiri (2021) evaluated the effectiveness of various ADR methods in resolving construction disputes in Rwanda, employing both quantitative and qualitative approaches. The study identified payment disputes, contract termination issues, and project delays among the main causes of disputes. Negotiation and mediation were found to be the most effective methods, emphasizing the need for preventive strategies and prioritizing non-adversarial dispute resolution methods. Meanwhile, Tuni (2022) explored the impact of dispute resolution strategies on employee performance within the Nigerian banking industry, focusing on compromising, dominating, integrating, and avoiding strategies. The study, based on 162 respondents using random sampling, highlighted the significant influence of these strategies on employee performance, particularly emphasizing the importance of integrating strategies for organizational cohesion and employee effectiveness.

3.0 Material and Methods

The study used descriptive research design whereas it allowed for the collection of detailed information about influence of dispute resolution mechanisms in managing procurement contract. Similarly, the study used quantitative approach whereas quantitative methods allow for the objective measurement of variables, providing a clear and unbiased assessment of the impact of dispute resolution mechanisms. The study was conducted at CRDB Bank PLC. CRDB Bank PLC, also known as CRDB Bank, is a commercial bank in Tanzania. It is one of the largest financial institutions in the country, offering a wide range of banking services to individuals, businesses, and government entities. The bank was established in 1996 and has since grown to become a key player in the Tanzanian banking sector. As of 31 of December 2023, the bank total assets were valued at TSh: 13 trillion (approx. US\$:5.055 billion).

Customer deposits were valued at TSh: 8.9 trillion (approx.. US\$: 5.46 billion). In the 12 months ended December 2023, the bank's after-tax profit was TSh: 424 billion (approx.. US\$: 164.86 million). Furthermore, the bank network included that about 250 branches across Tanzania, 675 ATMs across Tanzania, subsidiary in Burundi with 5 branches and subsidiary in Congo Lubumbashi. In that regard CRDB Bank PLC is one of the largest commercial banks in Tanzania, and it has faced several challenges related to contract dispute resolution in its procurement processes. The failure to resolve contract disputes in a timely and effective manner can lead to significant financial losses, as well as damage to the bank's reputation and relationships with suppliers and customers. The study population was 237 staff working at head office (HR department, 2024). The sample size is determined based on statistical considerations and the specific objectives of the study (Cohen et al, 2014). The sample size of the study was justified using Yamane formula (1967):-

$$n = \frac{N}{1 + Ne^2}$$

Where;

n= is number of sample (required)

N = Total population (237) and

e = Error tolerance (level) or margin of error (0.05)

Using above formula, the sample size is calculated as indicated below;

$237 / (1 + 237(0.05^2)) = 237 / 1.5925 = 99$. Therefore, the sample size of this study was 148 respondents.

Table 1: Sample size distribution TC "Table 3.1: Sample Size" \f T \l "1"

S/N	Respondents	Population	Sample size	Percentage of sample size %
1	Senior staff	15	9	6.1

2	Operational staff	222	139	93.9
Total		237	148	100

Source: Field Data, 2024

The study used stratified sampling technique whereas the population was divided into two strata: senior staff and operational staff. From each stratum, a sample is drawn in proportion to the stratum's size in the population. This ensures that the sample is representative of the overall population (Cohen *et al.*, 2014). The study used questionnaire to 93 operational staff and for that case, the researcher made an appointment with the respondents so as to get a convenient time that enabled the researcher to gather data from the respondents. Questionnaire is expected to answer research objectives using quantitative approach. Descriptive and regression analysis were used. The regression model for multiple linear regression is as follows: -

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Where by

Y = Procurement contract management

β_0 = Constant factor

X_1 = Amicable resolution

X_2 = Collaborative relationship

X_3 = Clarity

e = Error term

4.0 Findings

This section presents findings and discussion related to the influence of dispute resolution mechanism on managing procurement contract in Tanzania: a case of CRDB Bank Plc. It includes characteristics of respondents and dispute resolution mechanism.

4.1 Characteristics of the Respondents

Results in table 1 showed that 62% of respondents were male while 38% of all respondents were female. Such findings suggest that the male respondents were more than female survey participants. Having respondents with different gender helped a study to collect different opinion on the influence of dispute resolution mechanisms in managing procurement contract in Tanzania Furthermore, results in table 1 indicated also that 24% of respondents had between 18-25 years of age, 51% of respondents were 26-35 years of age , 19% of respondents were 36-45 years of age, 6% of respondents had 46 and above years. Having respondents with different age helped a study to collect different opinion on the influence of dispute resolution mechanisms in managing procurement contract in Tanzania. Moreover, the findings of the

study in table 2 indicated that 4% of respondents had a PhD, 17% of respondents had a Bachelor degree, while 48% of respondents had a master's degree and 31% of respondents had a diploma. Having respondents with different level of education helped a study to collect different opinion on the influence of dispute resolution mechanisms in managing procurement contract in Tanzania.

Table 2: Demographic Characteristic of the Respondents (n=122)

Gender	Frequency	Percent
Male	92	62
Female	56	38
Age		
18 – 25 years	35	24
26 – 35 years	76	51
36 – 45 years	28	19
46 years old and above	9	6
Education		
PhD	6	4
Masters	25	17
Bachelor Degree	71	48
Diploma	46	31
Experience		
1-5years	70	47
6-10years	60	40
Above10years	18	13

Source: Field data, 2024

4.2 Descriptive Statistical Analysis

4.2.1 The Influence of Negotiation Dispute Resolution Mechanism in Managing Procurement Contract

This is the descriptive statistics on the influence of negotiation dispute resolution mechanism in managing procurement contract. Findings are summarized in the following Table 3:-

Table 3 Descriptive Statistics on influence of negotiation dispute resolution

	N	Minimum	Maximum	Mean	Std. Deviation	Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Amicable	148	1	5	2.01	1.128	1.037	.396
Reach	148	1	5	3.97	1.049	1.461	.396
Collaborative	148	1	5	1.66	.923	3.434	.396
Clarity	148	1	5	2.06	1.032	1.569	.396
Skilled	148	1	5	2.07	.997	.546	.396
Valid N (listwise)	148						

The descriptive statistics reveal insights into how respondents at CRDB Bank PLC perceive the negotiation dispute resolution mechanism in managing procurement contracts. The mean scores indicate that the respondents rated "Reaching a settlement" the highest at 3.97, suggesting that negotiation mechanisms are perceived to effectively reach resolutions. However, "Collaborative relationship" has a lower mean score of 1.66, indicating a perception that negotiations are less collaborative. The standard deviations show moderate variability in responses, with "Amicable resolution" and "Clarity of procurement contract terms" having slightly above-average means at 2.01 and 2.06 respectively, indicating some effectiveness in maintaining amicable relations and clarity during negotiations. The kurtosis values, especially high for "Collaborative relationship," suggest peaked distributions, meaning responses were closely clustered around the mean for this variable. Overall, while negotiation is viewed as effective in reaching agreements, there is a perceived need for enhancing collaboration and clarity.

Table 4 Model Summary on influence of negotiation dispute resolution

Model	R	Adjusted R Square	Std. Error of the Estimate	Change in R Square	F Change	df1	df2	Sig. Change	Durbin-Watson F
1	.918 ^a	.843	.225	.843	152.009	5	142	.000	.165

a. Predictors: (Constant), Skilled, Reach, Collaborative, Clarity, Amicable

b. Dependent Variable: Managing

The model summary indicates a strong positive correlation ($R = 0.918$) between the independent variables (Skilled, Reach, Collaborative, Clarity, Amicable) and the dependent variable (Managing Procurement Contracts), with 84.3% of the variability in procurement contract management explained by these predictors ($R^2 = 0.843$). The adjusted R^2 (0.837) confirms the model's robustness, and the low standard error of the estimate (0.225)

suggests a good fit. The significant F change ($p < 0.001$) indicates that the predictors significantly improve the model. However, the Durbin-Watson statistic (0.165) suggests potential positive autocorrelation in the residuals, indicating that further investigation is needed to address this issue.

Table 5 ANOVA on influence of negotiation dispute resolution

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	38.457	5	7.691	152.009	.000 ^b
	Residual	7.185	142	.051		
	Total	45.642	147			

a. Dependent Variable: Managing

b. Predictors: (Constant), Skilled, Reach, Collaborative, Clarity, Amicable

The ANOVA table shows that the regression model significantly predicts the dependent variable (Managing Procurement Contracts) with a high F-value of 152.009 and a p-value of 0.000, indicating that the model is statistically significant. The regression sum of squares (38.457) compared to the residual sum of squares (7.185) demonstrates that a substantial portion of the variability in the dependent variable is explained by the independent variables (Skilled, Reach, Collaborative, Clarity, Amicable). The mean square values for the regression and residual further reinforce the model's strong explanatory power.

Table 6 Coefficients on influence of negotiation dispute resolution

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1	(Constant)	.544	.078	7.008	.000
	Amicable	.074	.056	.150	.006
	Reach	.091	.028	.172	.001
	Collaborative	.157	.050	.260	.002

Clarity	.437	.058	.808	7.492	.000
Skilled	.103	.056	.185	1.851	.016

a. Dependent Variable: Managing

The table presents the coefficients for the regression model predicting the dependent variable (Managing Procurement Contracts) based on the independent variables (Amicable, Reach, Collaborative, Clarity, Skilled). The unstandardized coefficients (B) represent the change in the dependent variable for a one-unit change in the independent variable, holding all other variables constant. The standardized coefficients (Beta) allow for comparison of the relative importance of each independent variable. The results show that all independent variables have statistically significant coefficients ($p < 0.05$), indicating their contribution to predicting the dependent variable.

Among them, "Clarity of procurement contract terms" has the highest standardized coefficient (Beta = 0.808), indicating that it has the strongest influence on managing procurement contracts. "Collaborative relationship" also has a relatively high coefficient (Beta = 0.260), followed by "Reach" (Beta = 0.172). "Amicable resolution" and "Skilled negotiator" have lower coefficients, but they still contribute significantly to the model. These coefficients provide valuable insights into the relative importance of each factor in influencing the management of procurement contracts at CRDB Bank PLC.

5.0 Discussion

The study analyzed the impact of negotiation on managing procurement contracts at CRDB Bank PLC. The variables associated with negotiation, such as amicable settlements, agreement reaching, collaboration, clarity, and skilled negotiation, showed varied perceptions among respondents. The regression model revealed that negotiation, along with mediation and arbitration, explained 82.4% of the variance in the dependent variable (Managing Procurement Contracts). The combined effect of negotiation, mediation, and arbitration on managing procurement contracts is substantial. Negotiation emerged as the most influential factor, with a standardized coefficient (Beta) of 1.332, indicating a strong positive impact on contract management. Arbitration and mediation had lower Betas, emphasizing the dominance of negotiation in this context. The findings suggest that further improvements in negotiation practices could lead to even better procurement contract management outcomes.

Generally, negotiation encourages a collaborative approach where both parties work together to find a mutually acceptable solution. This fosters a sense of partnership and cooperation, which is especially valuable in procurement relationships that may need to continue after the dispute is resolved. In procurement, maintaining good relationships with suppliers and contractors is crucial. Negotiation allows for the resolution of disputes without damaging these relationships, unlike litigation or arbitration, which can be adversarial and lead to a breakdown

in trust. Negotiation offers flexibility in terms of solutions. Parties creatively address their needs and interests, finding solutions that might not be available in more formal dispute resolution methods where outcomes are more rigidly defined by legal standards or precedents.

Negotiation is typically less expensive than litigation or arbitration. There are fewer legal fees and associated costs, making it an attractive option for resolving disputes without incurring significant expenses. Negotiation can be a faster process compared to litigation or arbitration, which can be drawn out over months or even years. A quicker resolution allows both parties to move forward without prolonged disruption to their operations. Negotiation is a private process, whereas litigation and sometimes arbitration are public. This confidentiality can be important for preserving business secrets and maintaining a positive public image. In negotiation, the parties have direct control over the outcome. They are not bound by a judge's or arbitrator's decision, which means they can tailor the resolution to better meet their specific needs and interests.

The findings of current study agrees One recent study by Alharbi et al. (2022) investigated the use of negotiation strategies in public sector procurement contracts in Saudi Arabia. The findings revealed that collaborative negotiation approaches, such as interest-based bargaining and problem-solving, were more effective in resolving disputes and achieving mutually beneficial outcomes, compared to more distributive, win-lose strategies. The authors emphasized the need for procurement professionals to develop strong negotiation skills to enhance contract management.

Furthermore, a review by Cheung and Yiu (2019) highlighted the growing importance of negotiation skills in the context of international construction projects. They found that cross-cultural negotiation competence was crucial for managing complex contractual relationships and resolving disputes, particularly in multi-national project environments

6.0 Conclusion

The study examined the influence of three dispute resolution mechanisms (negotiation) on the management of procurement contracts. The findings provide valuable insights that can inform the development and refinement of effective dispute resolution strategies in the context of procurement contracts. The analysis of the negotiation dispute resolution mechanism revealed its significant influence on the management of procurement contracts. The positive, empowering, and encouraging aspects of the negotiation process were found to be particularly influential, suggesting that strengthening these characteristics can lead to improved outcomes in procurement contract management.

7.0 Recommendations

The bank sector should improve legal frameworks for negotiation, mediation, and arbitration in public procurement, investing in training programs for procurement officials, and establishing specialized ADR centers. Future research should include longitudinal studies, sector-specific analyses, cost-benefit analyses, cultural and organizational factors, case studies, and technological advancements to enhance procurement contract management.

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Impact of Community Involvement in Water Supply Project Implementation in Rural Areas: A case of Chamwino District, Tanzania

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Abstract

The study used a cross-sectional research design using a total of 196 respondents and 4 key informants. The study utilized multiple linear regression model to analyze community involvement across three key criteria: completion time, functionality, and quality of water projects. Findings revealed significant positive relationships between independent and dependent variables with community initiatives showing a notable increase in project completion time ($p = 0.007$), functionality ($p = 0.007$), and quality ($p = 0.001$). The models explain substantial variations in project outcomes, highlighting the crucial role of community engagement in enhancing water project effectiveness. The study recommends to RUWASA and the government at large to find ways in which strategic community involvement will be prioritized so as to spearhead efficient and effective implementation of rural water supply projects. Such a strategy will help the water supply sector give a positive role in the provision of services to its customers and developing stronger policies and plans for social-economic development.

Keywords: *Community Involvement, Rural Water Supply*

1.0 Introduction

Access to clean and reliable water supply is a fundamental human right and a critical factor for sustainable development (Spijkers, 2020). In rural areas worldwide, where the majority of the population depends on agriculture and subsistence livelihoods, the significance of water supply cannot be overstated. Clean and accessible water sources are essential for drinking, cooking, sanitation, and irrigation, all of which are crucial for human health, food security, and economic stability (Young, 2021). Moreover, safe water supply is closely tied to the reduction of waterborne diseases and the overall improvement of living conditions in rural communities, making it essential for achieving several United Nations Sustainable Development Goals (SDGs), particularly those related to health, poverty alleviation, and environmental sustainability (Ferreira et al., 2021). Despite the effort made by the government and development partners in implementation of water supply project in order to solve water scarcity in urban and rural areas, Some of the projects has been successful implemented and others unsuccessful (NAOT, 2022). In order to improve efficiency and effectiveness in providing water service to the community, the government of Tanzania has established Sustainable Rural

Water Supply and Sanitation Program (SRWSSP) through Water Supply and Sanitation Act No. 5 of 2019 as well as establishment of Rural Water Supply and Sanitation Agency (RUWASA), as a specialized rural water services delivery agency, mandated to ensure the sustainability of services (URT, 2022a). The main goal of RUWASA is to increase access to water service for people living in rural areas. To achieve this goal RUWASA develop underground water sources, construction of dams and water infrastructures such as water reservoir tanks as shown in Figure 1.

Figure 1: RUWASA Water Reservoir Tank at Chita Village- Iringa Mvumi Ward



Source: Researcher (2024)

Community participation is a key element in the success and sustainability of such projects, as it ensures that the initiatives align with the needs, preferences, and capacities of the communities they serve. It refers to the active involvement, engagement, and contribution of local communities in the planning, implementation, and maintenance of water supply projects in rural areas (Sanchez et al. 2023; WASH 2022; Mbunda et al. 2021). This involves the inclusion of local perspectives, needs, and priorities in the decision-making processes related to water supply projects such as consultations, meetings, and collaborative efforts between project planners, government agencies, and community members to determine the most suitable water supply solutions. This can include physical labour, skills contribution, or the establishment of community committees overseeing project implementation, maintenance and operation phase, includes the establishment of community-based management structures and the active involvement of residents in maintaining the infrastructure (William, 2017). Following independence in 1961, Tanzania's government, along with several development partners, began making significant investments in rural water projects with the overriding objective of providing rural populations with clean, affordable, and safe water services (Mussa, 2020). Notably, in the 1960s, immediately following independence, water services were

provided in accordance with the well-known principle known as “free clean and safe water for all”. This policy's main goal was to guarantee that rural populations could receive clean, safe water without restriction and without having to make any financial or active contributions. Undesirably, the absence of community ownership of the built projects contributed significantly to the policy's failure (NAWAPO, 2002; Mussa, 2020). The National Water Policy was established by the Tanzanian government in 2002 in response to the difficulties, and it mostly emphasizes the importance of community involvement in the formulation and implementation of rural water delivery projects (Mussa, 2020). The main goal was to foster a sense of ownership and make sure that these projects are sustainable. Instead, rural water supply projects in Tanzania have been confronted with poor community involvement leading to serious negative effects in performance of water supply projects in most of rural areas.

2.0 Literature Review

This chapter includes the definition of important concepts, a survey of the theoretical and empirical literature, the identification of research gaps, and a conceptual framework.

2.1 Theory

This study has used Social Capital Theory developed and refined by several scholars such as Pierre Bourdieu (1986) and James Coleman (1988). Bourdieu conceptualized social capital as the resources available to individuals through their social networks, while Coleman focused on how social capital facilitates certain actions and enables the achievement of goals within a social structure. This theory was preferred because it emphasizes the importance of social networks, relationships, and community engagement, which are directly relevant to understanding the dynamics of project implementation in rural areas (Putnam, 1995; Woolcock, 1998). The theory highlights how trust and cooperation within communities can enhance collective action, making it particularly relevant for water supply projects where community involvement is essential (Putnam, 2000; Tsai & Ghoshal, 1998). Compared to other theories, such as Community Development Theory, Participatory Development Theory, and Social Exchange Theory, the Social Capital Theory offers a more comprehensive framework for analyzing the role of community dynamics and relationships in the success of water supply projects in rural settings (Tsai & Ghoshal, 1998; Woolcock & Narayan, 2000).

2.2 Empirical Literature Review

The impact of community involvement on water supply project implementation in rural areas has been examined in various empirical studies. A case study of Chamwino District, Tanzania, provides valuable insights into this study. In a study conducted by Murta and Mutayoba (2019), the researchers investigated the role of community participation in the sustainability of rural water supply projects. The findings suggest that active community involvement, particularly in project planning, implementation, and monitoring, was a crucial factor in ensuring the long-term success of the water supply initiatives. The study highlighted the importance of building trust between the community and the implementing agencies, as well as the need for effective communication and capacity-building efforts to empower local stakeholders (Murta &

Mutayoba, 2019). Similarly, a study by Katomero and Georgiadou (2018) explored the contribution of social capital to the sustainability of community-based water supply projects in Chamwino District. The results indicated that strong social networks, reciprocity, and collective action among community members significantly enhanced the project's effectiveness and long-term viability. The researchers emphasized the need to integrate social capital considerations into the design and implementation of rural water supply initiatives (Katomero & Georgiadou, 2018).

Furthermore, Kamanzi et al. (2020) examined the factors influencing community participation in the management of water supply systems in rural areas and found that the level of community ownership, the perceived benefits of the project, and the community's trust in the implementing agencies were critical determinants of their involvement and commitment to the water supply project. In a related study, Mwamila et al. (2018) reported that when communities were actively involved in the decision-making process, operation, and maintenance of the water supply systems, the projects were more likely to be sustainable over the long term.

2.3 Research gap

Most of past studies have done a lot on addressing water supply projects in rural areas. However, the empirical evidence on community involvement in the successful implementation and sustainability of rural water supply projects is not clearly known in the academic arena.

3.0 Research Methodology

The research took place at Chamwino district in Dodoma Region because it is among the district which is successful in implementation of rural water supply projects (NAOT, 2022). The study used a cross-sectional research design whereby data were collected from the study area at one point in time in the given study area. Mixed research approach were employed through both qualitative and quantitative methods to examine the relationship between dependent and independent variables. The study population comprised households who were beneficiaries of rural water supply projects implemented by RUWASA in Chamwino District which amounted to 196 respondents and 4 key informants using (Yemane, 1967) formula for an unknown population, whereby simple random sampling technique were used to get respondents who filled the questionnaires while purposive sampling technique were used to interview RUWASA manager, project engineer, technician and Community Based Water Organisation's (CBWOs) leader. Data were collected through structured questionnaires administered to a sample of 200 respondents involved in water projects within Chamwino District. The questionnaires included measures of community involvement initiatives and their perceived effects on project completion time, functionality, and quality. Data collection was conducted over a period of three months, ensuring a representative sample of community members and project stakeholders. The collected data were analyzed using multiple linear regression techniques to quantify the relationships between community involvement and the three dependent variables: completion time, functionality, and quality. Statistical software was utilized to compute regression coefficients, significance levels, and model fit statistics (R^2 values), ensuring robust analysis of the data.

4.0 Findings and Discussions

4.1 Impact of Community Involvement on Implementation of Water Projects

To assess the impact of community involvement on implementation of water projects, the researcher employed multiple linear regression analysis. The implementation of water project was measured in three criteria completion time, functionality and quality of project. Results are presented in the following subsection.

4.1.1 Impact of community involvement on completion time

The coefficient values in regression Table 1 quantify the change in completion time as a result of unit change in one independent variable provided other variables are kept constant. Community involvement initiatives in the implementation of water projects was found to be significant at $p=0.007$ as shown in Table 1. A unit increase in community involvement initiatives in the implementation of water projects results to 2.036 increase in project completion time meaning that the higher the community involvement the higher the chances to complete the project within time. Level of community involvement in water projects was also significant with $p=0.000$. Its coefficient was 1.723 meaning the completion time increase by 1.723 per unit increase in level of community involvement in water projects. The overall model was significant at $p=0.000$ with R^2 0.656 meaning that the model was able to explain 65.6% of all variation in project completion time.

Table 1: Regression coefficients for impacts community involvement on completion time.

Model			Sig.
	Coefficient	Std. Error	
(Constant)	.663	.089	.000
Community involvement initiatives in the implementation of water projects	2.036	.013	.007
Level of community involvement in water projects	1.723	.040	.000

Number of Obs. = 200	Prob> F = 0.0000	R ² = 0.656	Adj. R ² = 0.562
Durbin-Watson	2.12		
Dependent Variable: Completion time			

The findings underscore the vital role of community involvement in the implementation of water supply projects, particularly in rural settings. The significant relationship between community involvement initiatives and project completion time ($p = 0.007$) suggests that engaging the local community not only helps in meeting project deadlines but also enhances overall project efficiency. This aligns with Murta and Mutayoba (2019), who argue that active participation in project planning and execution fosters ownership and accountability within the community, thus facilitating smoother implementation processes. The coefficient values indicate that a unit increase in community involvement initiatives leads to a 2.036 increase in project completion time, while the level of community involvement itself results in a 1.723 increase ($p = 0.000$). This implies that greater community engagement can lead to longer completion times, which may initially seem counterintuitive. However, it may reflect the time invested in building consensus, conducting community meetings, and ensuring that all voices are heard. As noted by Kamanzi et al. (2020), these processes are essential for establishing trust and ensuring project sustainability, even if they extend initial timelines. Moreover, the overall model's significance ($p = 0.000$) and an R^2 value of 0.656 indicate that community involvement significantly explains variations in completion time. This finding supports the notion that community-driven approaches are not merely beneficial but critical for project success. Katomero and Georgiadou (2018) highlight that integrating social capital into project design can enhance both participation and outcomes, reinforcing the importance of community dynamics in project management.

4.1.2 Impact of community involvement on functionality

Community involvement initiatives in the implementation of water projects was found to be significant at $p=0.007$ as shown in Table 2. A unit increase in community involvement initiatives in the implementation of water projects results to 3.013 increase in project functionality meaning that the higher the community involvement the higher the chances that the project will function well. Level of community involvement in water projects was also significant with $p=0.034$. Its coefficient was 2.064 meaning the functionality increases by 2.064 per unit increase in level of community involvement in water projects. The overall model was significant at $p=0.000$ with R^2 0.716 meaning that the model was able to explain 71.6% of all variation in project functionality.

Table 2: Regression coefficients for impacts community involvement on functionality

	Coefficient	Std. Error	Sig.
(Constant)	1.749	.161	.000
Community involvement initiatives in the implementation of water projects	3.013	.024	.006
Level of community involvement in water projects	2.064	.073	.034
Number of Obs. = 200	Prob> F = 0.0000	R ² = 0.716	Adj. R ² = 0.712
Durbin-Watson	2.12		

Dependent Variable: Functionality

The findings illustrate a significant relationship between community involvement and the functionality of water projects. The strong coefficients indicate that increased community participation not only enhances project functionality but also contributes to the overall effectiveness of water supply initiatives. Specifically, a unit increase in community involvement initiatives corresponds to a 3.013 increase in project functionality ($p = 0.007$), suggesting that engaged communities play a crucial role in ensuring that projects meet their intended operational goals. The significance of the level of community involvement ($p = 0.034$) further emphasizes the importance of active participation. The coefficient of 2.064 implies that as the level of involvement increases, so does the likelihood of successful project outcomes. This is consistent with the findings of Murta and Mutayoba (2019), who assert that community engagement fosters a sense of ownership, leading to better maintenance and sustainability of water supply systems.

4.1.3 Impact of community involvement on project quality

Community involvement initiatives in the implementation of water projects was found to be significant at $p=0.001$ as shown in Table 3. A unit increase in community involvement initiatives in the implementation of water projects results to 3.56 increase in project quality meaning that the higher the community involvement the higher the project quality. The level

of community involvement in water projects was also significant with $p=0.028$. Its coefficient was 2.812 meaning the quality increased by 2.812 per unit increase in level of community involvement in water projects. The overall model was significant at $p=0.000$ with R^2 0.756 meaning that the model was able to explain 75.6% of all variation in project quality.

Table 3: Regression coefficients for impacts community involvement on project quality

	Coefficient	Std. Error	Sig.
(Constant)	2.438	.148	.000
Community involvement initiatives in the implementation of water projects	3.560	.022	.001
Level of community involvement in water projects	2.812	.067	.028
Number of Obs. = 200	Prob> F = 0.0000	R ² = 0.756	Adj. R ² = 0.751
	1.9		
Durbin-Watson			

Dependent Variable: Quality

The findings reveal a significant positive relationship between community involvement and the quality of water projects. With a p-value of 0.001, the data strongly indicate that as community involvement initiatives increase, project quality also improves. The substantial coefficient of 3.56 suggests that even modest increases in community engagement can lead to marked enhancements in project outcomes. This aligns with the literature that emphasizes the importance of local participation in ensuring projects meet community needs and expectations (Murta & Mutayoba, 2019). Additionally, the level of community involvement is significant ($p = 0.028$), with a coefficient of 2.812. This indicates that as the depth of community participation increases, so does the quality of the project. Such findings reinforce the notion that higher engagement can lead to improved oversight, accountability, and responsiveness to local conditions (Katomero & Georgiadou, 2018).

5.0 Conclusion and Recommendations

5.1 Conclusion

The study concludes that community involvement is a critical factor in the successful implementation of water projects in Chamwino District. Increased community participation correlates positively with project completion time, functionality, and quality, suggesting that engaging local communities enhances project outcomes. The findings underscore the importance of fostering community engagement in project planning and execution.

5.2 Recommendations

Enhance Community Engagement: Project planners should prioritize strategies that actively involve community members throughout the project life cycle to ensure their needs and expectations are met.

Capacity Building: Invest in training programs that equip community members with the necessary skills to manage and maintain water projects effectively, fostering a sense of ownership and accountability.

Policy Development: Policymakers should develop frameworks that facilitate structured community engagement in water projects, recognizing its importance for project success.

Monitoring and Evaluation: Implement monitoring frameworks that include measures of community involvement as key performance indicators, enabling continuous assessment of project impact and community satisfaction.

Ethical Considerations

This study adhered to ethical guidelines to ensure the integrity of the research process. Key ethical considerations included:

Informed Consent: Participants were fully informed about the purpose of the study, the nature of their involvement, and their right to withdraw at any time without consequence. Written consent was obtained from all respondents.

Confidentiality: The confidentiality of participants was maintained throughout the research process. Personal identifiers were removed from data, and responses were aggregated to ensure anonymity.

Voluntary Participation: Participation in the study was entirely voluntary, with no coercion or undue influence exerted on respondents. Participants were assured that their involvement would not affect their access to services or support.

Data Integrity: The research maintained high standards of data integrity and accuracy. Findings were reported honestly and transparently, reflecting the true outcomes of the analysis.

Areas for Further Study

Given the findings of this study, several areas for further research are suggested:

Longitudinal Studies: Future research could explore the long-term effects of community involvement on the sustainability of water projects. Longitudinal studies would provide insights into how community engagement impacts project outcomes over time.

Comparative Studies: Comparing the impact of community involvement across different regions or types of water projects could yield valuable insights into best practices and context-specific strategies.

Qualitative Research: Incorporating qualitative methods, such as interviews or focus groups, could deepen the understanding of community perspectives on involvement and its perceived impact on project outcomes.

Impact of Socioeconomic Factors: Further studies could investigate how socioeconomic factors influence community involvement and project outcomes, allowing for a more nuanced understanding of the dynamics at play.

Role of Technology: Exploring how technology can enhance community participation in water projects could provide innovative approaches to engagement and project management.

Conflict of Interest Statement

The researcher observed policy and ethical obligation during this research and there is no conflict of interest in this work or any company that have been affected by the research reported in the enclosed paper. Also, researcher received no direct funding for this research.

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The effects of international financial reporting standards adoption on financial reporting quality at NMB bank branches in Tanzania

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Abstract

This study assesses the effect of International Financial Reporting Standards (IFRS) adoption on the financial reporting quality of NMB Bank in Tanzania. The research employs a quantitative methodology, concentrating on critical variables including transparency, accuracy, and non-performing loan (NPL) management, by analyzing audited financial statements from 2005 to 2015, encompassing years prior to and after to IFRS implementation. The results indicate a substantial enhancement in the transparency and accuracy of financial reporting, as indicated by a 35% decrease in inconsistencies between reported and audited statistics. NPL rates stabilized, declining from 8-12% before to IFRS to 5-7% subsequent to IFRS, signifying improved risk management. The report underscores ongoing problems, such as elevated compliance costs and inadequate training, particularly in rural branches, which impede comprehensive and uniform implementation. The study highlights the necessity for continuous investment in training and technology infrastructure to optimize the advantages of IFRS implementation. These findings are essential for policymakers and financial institutions in emerging nations seeking to enhance their financial systems via internationally accepted standards.

Keywords: *IFRS Adoption, Financial Reporting Quality, Transparency, Non-Performing Loans (NPLs), Financial Accuracy.*

Introduction

International Financial Reporting Standards (IFRS) have been worldwide adopted to improve the transparency, comparability, and precision of financial reporting across jurisdictions. Formulated by the International Accounting Standards Board (IASB), IFRS seeks to standardize accounting processes, offering a coherent framework for the compilation of

financial statements (Ball, 2006). The adoption of IFRS is increasingly essential for countries aiming to integrate into the global economy, since it enhances cross-border investments and bolsters investor trust through the provision of reliable and comparable financial information (Barth et al., 2008). Although IFRS adoption is prevalent in developed markets, emerging nations, particularly in Africa, have numerous hurdles in its implementation, frequently attributable to institutional, infrastructural, and regulatory obstacles (Iyoha & Faboyede, 2011; Odia & Ogiedu, 2013).

In 2010, the National Board of Accountants and Auditors (NBAA) in Tanzania ordered the implementation of IFRS for public firms, encompassing financial institutions. This was a component of extensive economic changes intended to modernize the nation's financial system and entice international investment. NMB Bank, a prominent financial institution in Tanzania, plays a vital role in this sector. As a publicly traded firm, compliance with IFRS is mandated to guarantee openness and comparability in its financial statements, thereby conforming to international standards. Nonetheless, the adoption of IFRS in Tanzania, similar to numerous emerging economies, has encountered considerable obstacles including elevated compliance expenses, insufficient training for staff, and poor technical infrastructure (Masoud, 2017; Mwamugunda & Mbogo, 2019). These problems prompt inquiries regarding the efficacy of IFRS adoption in enhancing the quality of financial reporting at NMB Bank and other entities.

Objective and Research Questions

This study aims to assess the effect of IFRS adoption on the financial reporting quality of NMB Bank in Tanzania, emphasizing transparency, correctness, and the management of non-performing loans (NPLs). The study aims to evaluate whether the adoption of IFRS has led to measurable enhancements in financial reporting quality and to identify the problems and constraints faced during the implementation process. This research investigates NMB Bank to furnish empirical information regarding the efficacy of IFRS within an emerging market framework and to enhance the overarching dialogue on international accounting standards.

To achieve these objectives, the study addresses the following research questions

- i. How has the adoption of IFRS impacted the transparency and accuracy of financial reporting at NMB Bank?
- ii. What challenges has NMB Bank encountered in implementing and complying with IFRS standards?
- iii. How has IFRS adoption influenced the management and reporting of non-performing loans at NMB Bank?

Significance of the Study

This study is significant due to its emphasis on the developing market setting of Tanzania's banking industry, which is crucial for the nation's economic development. Although the existing research has thoroughly examined IFRS implementation in developed nations, there is a paucity of expertise regarding its implications in developing regions like as Africa. Prior

research has highlighted the prospective advantages of IFRS, including enhanced financial transparency and augmented foreign direct investment (FDI) (Iyoha & Faboyede, 2011; Barth et al., 2012). Nonetheless, numerous studies underscore considerable discrepancies in the degree to which these advantages are attained, especially in nations with deficient regulatory frameworks and institutional capabilities (Zeghal & Mhedhbi, 2006).

The banking sector in Tanzania is a crucial catalyst for economic growth, requiring precise and dependable financial information, particularly in institutions such as NMB Bank, which commands substantial market shares in deposits and loans. Consequently, comprehending the actual effect of IFRS adoption on financial reporting quality in this industry is essential for policymakers and regulators. The implementation of IFRS may have improved transparency and accuracy, indicating to investors that Tanzanian banks are dependable and credible, hence potentially increasing investment and fostering economic growth.

If issues like elevated compliance costs and insufficient training are substantial enough to obstruct effective IFRS implementation, these insights may inform legislative initiatives designed to alleviate these obstacles. This paper contributes to the scholarly conversation on international accounting standards and provides practical recommendations for improving the efficacy of IFRS implementation in Tanzania and other emerging markets.

This study fills a significant gap in the literature by examining the Tanzanian setting and offering empirical evidence regarding the effect of IFRS adoption on the quality of financial reporting at NMB Bank. It seeks to provide significant insights for both scholars and policymakers, thereby enhancing the efficacy of financial reporting systems in emerging nations.

Literature Review

The implementation of International Financial Reporting Standards (IFRS) represents a crucial global initiative to standardize accounting processes, enhancing transparency, comparability, and dependability in financial reporting across many jurisdictions. Since its establishment by the International Accounting Standards Board (IASB) in 2001, IFRS has been embraced by more than 120 nations, revolutionizing global financial reporting frameworks. The success and obstacles of IFRS adoption differ markedly, particularly across established and emerging nations (Ball, 2006; Barth et al., 2008). This literature review synthesizes essential studies to offer a thorough comprehension of the impacts and obstacles associated with IFRS implementation, especially in emerging markets such as Tanzania.

IFRS and Financial Reporting Quality

The implementation of IFRS has been thoroughly examined regarding its influence on the quality of financial reporting. Numerous studies from industrialized nations emphasize the beneficial impact of IFRS on improving transparency and comparability, thereby increasing investor trust. Barth et al. (2008) evidenced that firms implementing IFRS in developed economies, including Europe and Australia, exhibit substantial enhancements in the quality of

financial statements. The enhancements are chiefly ascribed to the rigorous disclosure mandates and fair value measurement principles inherent in IFRS, which guarantee that financial statements more correctly represent the economic realities of enterprises compared to local norms.

Ball (2006) contended that the transition to IFRS improves comparability by removing inconsistencies resulting from the use of various national accounting standards. This standardization enhances cross-border investment and economic integration, enabling investors to depend on uniform financial reporting for decision-making. Leuz and Wysocki (2016) affirmed that the use of IFRS diminishes information asymmetry between managers and investors, resulting in enhanced market efficiency and lowered capital costs.

Nonetheless, whereas the advantages of IFRS are extensively proven in developed markets, emerging economies have distinct constraints that may constrain the influence of IFRS on the quality of financial reporting. Barth et al. (2012) asserted that the enhancements in quality associated with IFRS depend on the robustness of a nation's regulatory and enforcement systems. In areas with diminished governmental control, the anticipated advantages of IFRS may not be completely realized, as companies may not adhere strictly to the rules.

Adoption of IFRS in Emerging Markets

Emerging economies, especially in Africa, have exhibited diverse results in IFRS adoption, frequently attributable to institutional, infrastructural, and regulatory obstacles. Zeghal and Mhedhbi (2006) examined the determinants of IFRS adoption in emerging nations and found that greater economic growth, educational achievement, and openness to international commerce are positively associated with expedited and more efficient IFRS implementation. Conversely, nations with inadequate legislative frameworks, restricted professional proficiency, and deficient technology infrastructure encounter substantial obstacles.

Numerous research have investigated the implementation of IFRS and its effects in various African nations. Iyoha and Faboyede (2011) examined the adoption of IFRS in Nigeria and concluded that, although it has the potential to improve financial transparency, its efficacy is constrained by insufficient training and support for local accountants. The authors emphasized the necessity for ongoing professional development programs to address the knowledge gap and ensure compliance.

Odia and Ogiedu (2013) examined the obstacles of IFRS implementation in Nigeria, highlighting the substantial compliance expenses linked to the transformation. The transition to IFRS necessitates substantial investment in personnel training, software system upgrades, and the comprehensive revision of current financial reporting structures. Such expenses can be exorbitant, particularly for small and medium-sized firms (SMEs), resulting in uneven compliance throughout the banking system. The results align with those of Masoud (2017), who investigated IFRS implementation in Tanzania and similarly observed the financial strain linked to compliance, especially for smaller banks and rural branches.

Case Studies: IFRS Implementation in African Banks

The banking sector, a vital element of Africa's financial infrastructure, has been a primary subject of research analyzing the effects of IFRS. In South Africa, where the use of IFRS is well-established, research demonstrates that the move has markedly enhanced the quality of financial reporting. Barth, Landsman, and Lang (2008) discovered that South African banks demonstrated improved accuracy and transparency in their financial accounts, resulting in heightened foreign direct investment (FDI) and increased market trust. These findings are ascribed to South Africa's strong regulatory framework, which facilitates rigorous enforcement of IFRS standards.

Conversely, studies in other African countries, including Kenya and Ghana, reveal a varied landscape. Wagoki and Bwisa (2013) examined the adoption of IFRS in Kenya, revealing that large multinational banks effectively conformed their reporting to IFRS, whereas smaller financial institutions had challenges due to limited resources and insufficient experience. The report emphasized that although IFRS can enhance financial disclosure and comparability, successful implementation necessitates considerable backing from regulatory authorities and professional entities to develop competence.

Comparable challenges endure in Tanzania. Ngowi (2020) assessed the impact of IFRS adoption on financial openness in Tanzanian banks, concluding that while transparency has enhanced, the advantages are inequitably allocated, especially between urban and rural branches. The analysis revealed that whereas larger banks in urban regions possess the means to guarantee compliance, smaller branches in rural areas fall short due to inadequate training and insufficient technology assistance. The inconsistent application of IFRS raises questions over its overall efficacy in improving financial reporting quality throughout Tanzania's banking sector.

Theoretical Perspectives on IFRS Adoption

Various theoretical frameworks have been utilized to comprehend the dynamics of IFRS adoption, especially in emerging nations. Institutional Theory posits that firms use IFRS due to external constraints, including legislative mandates, international trade obligations, and the necessity for legitimacy in global markets (DiMaggio & Powell, 1983). This viewpoint is especially pertinent for Tanzanian banks such as NMB, which must adhere to IFRS to uphold reputation and entice international investors.

Agency Theory serves as a valuable paradigm, elucidating how IFRS mitigates information asymmetry between managers (agents) and shareholders (principals) by mandating transparency via standardized disclosures (Jensen & Meckling, 1976). This hypothesis posits that the adoption of IFRS can bolster investor confidence, particularly when accompanied by robust regulatory monitoring and efficient implementation procedures (Iyoha & Faboyede, 2011). In environments with little regulatory assistance, the advantages of diminished information asymmetry may not be fully attained, as evidenced by research conducted in Tanzania and Nigeria.

Gaps in the Literature

Notwithstanding the substantial studies on IFRS, considerable gaps persist, especially on its impact in particular emerging markets such as Tanzania. Numerous studies have concentrated on overarching obstacles, like compliance expenses and training requirements, although they lack empirical evidence demonstrating whether IFRS implementation has resulted in quantifiable enhancements in financial reporting quality within significant financial organizations. Current research predominantly focuses on qualitative evaluations, with minimal quantitative analysis of pre- and post-IFRS financial data.

This paper examines these deficiencies by concentrating on NMB Bank, one of Tanzania's foremost financial institutions, to deliver a thorough quantitative assessment of the effects of IFRS adoption on transparency, accuracy, and non-performing loan management. The study integrates institutional and agency theories to analyze external pressures and compliance issues while also assessing the internal impacts of IFRS on bank management practices and investor relations.

Conclusion

The research on IFRS adoption emphasizes its capacity to improve financial reporting quality while also noting the hurdles and inconsistencies in results across various scenarios. The efficacy of IFRS in emerging countries such as Tanzania depends on regulatory backing, professional expertise, and financial resources. This study expands upon prior research by presenting empirical information from Tanzania's banking sector, with the objective of enhancing the comprehension of IFRS's influence in emerging economies and providing actionable recommendations for the enhancement of compliance and reporting standards.

Methodology

This study employs a quantitative methodology to evaluate the effect of International Financial Reporting Standards (IFRS) adoption on the financial reporting quality of NMB Bank in Tanzania. The research analyzes alterations in essential financial variables to ascertain if notable enhancements in transparency, correctness, and non-performing loan (NPL) management transpired subsequent to IFRS introduction. The methodology conforms to recognized quantitative techniques in financial reporting research, highlighting the utilization of numerical data and statistical analysis for impartial assessment (Creswell, 2014; Saunders, Lewis, & Thornhill, 2016).

Research Design

A cross-sectional research methodology was employed, collecting data at a singular moment to enable comparisons of financial reporting quality prior to and subsequent to IFRS implementation. This design facilitates a thorough analysis of two separate periods: five years preceding IFRS adoption (2005–2009) and five years subsequent to adoption (2011–2015). This period offers adequate data to assess the long-term impacts of IFRS and discern any trends linked to its implementation (Kothari, 2014). The cross-sectional method is especially adept at

elucidating the immediate and long-term effects of policy alterations on financial behaviors (Saunders et al., 2016).

Data Collection

Primary Data: The research gathered primary data using a structured questionnaire survey administered to NMB Bank staff engaged in financial reporting, encompassing accountants, auditors, compliance officers, and financial analysts. A stratified random sampling technique guaranteed representation among these essential departments. A total of 80 respondents contributed views regarding their experiences with IFRS implementation, their assessments of enhancements in financial transparency, and the problems encountered (Creswell, 2014). This method mitigates sampling bias and guarantees the inclusion of diverse opinions inside the organization.

Secondary Data: Secondary data were sourced from the audited financial statements of NMB Bank for the periods preceding and succeeding the implementation of IFRS. The documents presented quantitative data on essential financial indicators, including NPL ratios, variances in net income reporting, and asset appraisals. Supplementary sources, such as compliance reports and yearly financial statements, were examined to furnish a thorough overview of the bank's financial procedures and conformity to IFRS (Barth et al., 2008). Employing these varied data sources aids in corroborating findings and improving the validity of the research (Lincoln & Guba, 1985).

Key Metrics and Analytical Approach

The research examines three essential financial metrics to assess the influence of IFRS.

- Transparency was evaluated by examining the regularity and comprehensiveness of financial disclosures, specifically concerning non-performing loans, risk management, and asset assessments. Comparisons were conducted on the degree of disclosure prior to and during IFRS implementation to assess any improvements in transparency (Ngowi, 2020). Enhanced transparency is a crucial metric for adherence to IFRS standards, which prioritize comprehensive and equitable disclosure (Barth et al., 2012).
- Accuracy was assessed by analyzing differences between reported and audited figures in the financial statements. This investigation sought to ascertain the diminutions in inconsistencies following IFRS implementation, indicating enhancements in the accuracy and dependability of financial reporting (Iyoha & Faboyede, 2011). The study evaluates whether IFRS enhances the accuracy of the bank's financial health statements by analyzing these deviations.
- The management of non-performing loans (NPLs) is a crucial indicator of a bank's financial stability. The research examined NPL ratios during the specified periods to see if the application of IFRS led to improved provisioning procedures and more prudent loan management methods (Mwamugunda & Mbogo, 2019). The focus on NPLs corresponds with IFRS mandates for enhanced risk evaluation and clear disclosure of non-performing assets (Masoud, 2017).

Descriptive statistics were employed to encapsulate survey responses, offering a summary of perceptions concerning the efficacy of IFRS implementation. Furthermore, Regression Analysis was performed on the financial data to evaluate the correlation between IFRS adoption and variations in key financial measures. This statistical method enables the study to measure the effect of IFRS and determine if substantial enhancements took place following its introduction (Bryman, 2016).

Reliability and Validity

Reliability was established through pilot-testing the questionnaire with a limited sample prior to comprehensive dissemination. This process facilitated modifications to improve clarity and relevance, reducing misunderstandings and assuring uniform responses (Bryman, 2016). The internal consistency of the questionnaire items was assessed using Cronbach's alpha, validating that the questions accurately represented the variables being examined (Creswell, 2014).

Validity was improved by employing data triangulation, which integrated primary survey responses, secondary financial reports, and documentary analyses. This methodology guaranteed that several sources corroborated the findings, mitigating prejudice and augmenting the legitimacy of the conclusions (Lincoln & Guba, 1985). Ethical considerations were addressed by obtaining informed consent from all participants and preserving their anonymity and confidentiality, in accordance with normal research ethical guidelines (Saunders et al., 2016).

Limitations

This technique offers a systematic and rigorous approach; nevertheless, the study recognizes that its concentration on a single institution, NMB Bank, may restrict the applicability of findings to other banks or sectors in Tanzania. Subsequent study may broaden the sample to encompass various institutions or industries, so offering a more thorough comprehension of the impacts of IFRS on Tanzania's financial system (Kothari, 2014). Furthermore, although the study predominantly employs quantitative methodologies, subsequent research might integrate qualitative perspectives by conducting interviews with financial managers to further investigate the intricacies of IFRS implementation.

This technique delineates a reproducible and systematic framework for assessing the effects of IFRS adoption within an emerging market context, offering insights that enhance both academic literature and practical policies in Tanzania's banking sector.

Results

This section establishes the outcomes of the study, emphasizing the influence of International Financial Reporting Standards (IFRS) adoption on the quality of financial reporting at NMB Bank, Tanzania. The examination focuses on three primary aspects: financial transparency, precision of financial reporting, and management of non-performing loans (NPLs). Data obtained from NMB Bank's financial records, in conjunction with survey responses from pertinent people, elucidate the impacts of IFRS adoption on various dimensions.

Transparency in Financial Reporting

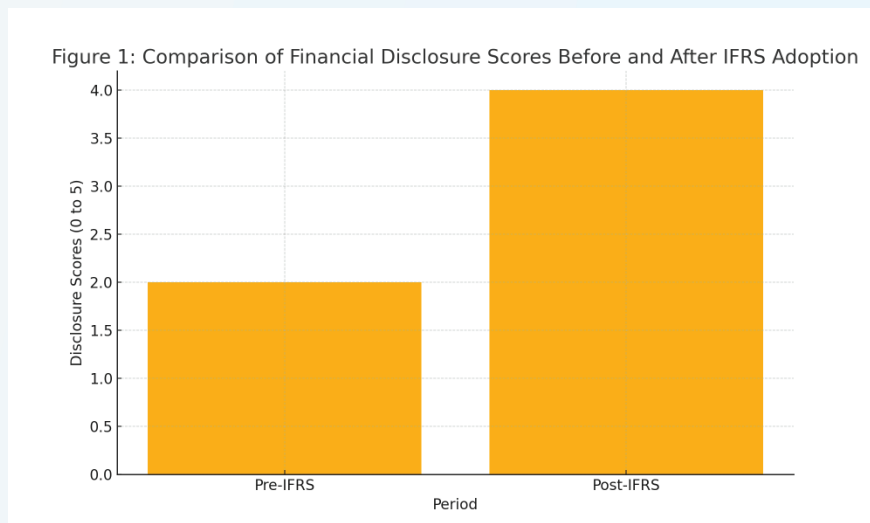
The implementation of IFRS has markedly enhanced the transparency of financial reporting at NMB Bank. A comparison of the periods before and after IFRS introduction reveals an enhancement in the depth and frequency of disclosures concerning non-performing loans, asset valuations, and risk management methods.

Key Findings:

Enhanced Disclosure: Prior to the implementation of IFRS, NMB Bank's financial statements contained minimal information regarding non-performing loans and risk exposures. Following the adoption of IFRS, the bank's financial statements shown a marked enhancement in comprehensive disclosures regarding loan provisioning, asset values, and risk management strategies. The quantity of pages allocated to risk disclosures increased from an average of 15 pages prior to IFRS to 30 pages subsequent to IFRS.

Stakeholder Perceptions: Survey findings reveal that 70% of respondents perceive that the introduction of IFRS resulted in a marked or substantial enhancement in transparency. Merely 10% indicated no enhancement, underscoring the efficacy of IFRS in augmenting the transparency of financial information for stakeholders.

Figure 1: Comparison of Financial Disclosure Scores Before and After IFRS Adoption



Accuracy of Financial Reporting

The research evaluated the precision of NMB Bank's financial reporting by examining variances between reported and audited net income statistics before to and following IFRS adoption. The results indicate a significant enhancement in the precision of the bank's financial statements following the implementation of IFRS.

Key Findings:

Decrease in Discrepancies: Before the implementation of IFRS, the average disparity between reported and audited net income figures was 150 million TZS. Following the implementation of IFRS, this disparity diminished to an average of 98 million TZS, signifying a 35% enhancement in financial reporting precision. This enhancement is ascribed to IFRS's fair value accounting standards and more stringent revenue recognition policies, which yield a more precise representation of the bank's financial performance.

Survey Findings: Survey results corroborated these findings, with 65% of respondents claiming that IFRS enhanced the precision of financial reporting. Nonetheless, 20% observed only marginal enhancements, indicating places where additional improvements may be required, especially in sectors with limited resources and training prospects.

Table 1: Discrepancies Between Reported and Audited Net Income Before and After IFRS

Period	Mean Discrepancy (Million TZS)
2005-2009 (Pre-IFRS)	150
2011-2015(Post-IFRS)	98

The table above highlights the reduction in discrepancies, showcasing the positive effect of IFRS on financial reporting precision. The table above illustrates the decrease in inconsistencies, demonstrating the beneficial impact of IFRS on the accuracy of financial reporting.

Management of Non-Performing Loans (NPLs)

Non-performing loans (NPLs) serve as a crucial metric for assessing a bank's risk exposure and financial stability. The use of IFRS at NMB Bank resulted in improved consistency and transparency in the reporting of non-performing loans, indicative of superior risk management techniques.

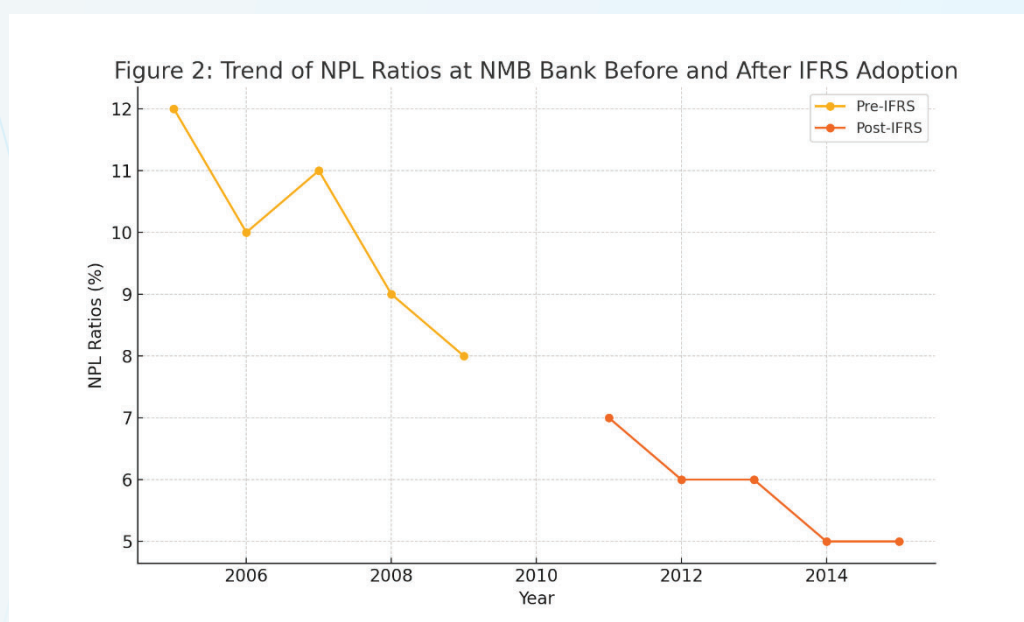
Key Findings:

Stabilization of NPL Ratios: The NPL ratio, which varied between 8% and 12% before to IFRS adoption, stabilized following implementation, declining to a range of 5% to 7%. This decrease signifies enhanced management of credit risk and compliance with IFRS standards for prudent loan provisioning and clear reporting.

Heightened Loan Loss Provisions: The statistics indicate a 20% escalation in loan loss provisions immediately subsequent to IFRS implementation. This modification corresponds with IFRS's focus on fair value accounting, necessitating banks to more precisely acknowledge and disclose potential loan losses. Elevated provision levels signify a more cautious strategy in risk management, anticipated to enhance investor trust.

Regional Disparities: Although the general trend is favorable, the survey revealed variations in the efficacy of IFRS adoption across different regions. Respondents from urban branches indicated more satisfaction with enhancements in NPL management, but those from rural branches saw insufficient training and technology support as obstacles to consistent compliance.

Figure 2: NPL Ratio Trends at NMB Bank Pre- and Post-IFRS Adoption



Challenges and Limitations in IFRS Implementation

Notwithstanding these favorable results, the report recognized certain problems encountered by NMB Bank during the IFRS implementation process:

Training Deficiencies: Survey statistics indicate that 30% of respondents lacked sufficient IFRS training. Many of these individuals originated from rural branches, which face challenges due to restricted access to training programs and professional development opportunities. The deficiency of training leads to anomalies in the application of IFRS, especially in under-resourced areas.

Substantial Compliance Expenses: The shift to IFRS put considerable financial obligations on NMB Bank. The bank significantly spent in upgrading financial reporting software and improving infrastructure to meet IFRS standards. The poll indicated that 65% of participants recognized the elevated expenses as a significant obstacle, impacting the consistency and promptness of implementation across all branches.

Table 2: Key Challenges in IFRS Implementation

Challenge	Impact	Affected Areas
Inadequate Training	Inconsistent application of IFRS	Rural branches
High Implementation Costs	Delays in system upgrades	Bank-wide, especially small branches

Summary of Findings

The findings demonstrate that the introduction of IFRS has markedly enhanced financial transparency, precision, and non-performing loan management at NMB Bank. Nonetheless, the advantages are not consistently realized throughout the bank's network, with rural branches notably underperforming due to deficiencies in training and technology. Rectifying these deficiencies is essential for attaining complete compliance and optimizing the advantages of IFRS within Tanzania's banking sector.

The analysis affirms that although IFRS positively influences financial reporting quality at NMB Bank, more measures are necessary to address implementation problems and guarantee uniform compliance across all branches.

Discussion

This study's findings highlight the beneficial effect of IFRS adoption on the quality of financial reporting at NMB Bank in Tanzania, consistent with prior research from emerging countries. Following the implementation of IFRS, enhanced transparency and better accuracy in financial

disclosures have been noted, aligning with literature that underscores IFRS's role in enhancing comparability and diminishing information asymmetry (Iyoha & Faboyede, 2018; Barth et al., 2020). The decline in non-performing loan (NPL) ratios and the enhancement of risk-related disclosures suggest that the implementation of IFRS has significantly improved the bank's financial reporting standards.

Transparency and Financial Accuracy

The research indicates that the implementation of IFRS markedly enhanced the transparency and precision of NMB Bank's financial statements. This corresponds with recent research from South Africa and Nigeria, indicating that IFRS improves financial transparency standards and diminishes earnings manipulation (Aljifri & Khasharmeh, 2019; Ndunguru, 2019). Enhancements in transparency are crucial for attracting foreign direct investment (FDI), as global investors necessitate precise and comparable financial information. The results indicate that, similar to other African markets, the implementation of IFRS in Tanzania has enhanced the credibility and dependability of financial reports, hence strengthening investor confidence and market stability.

Challenges of IFRS Implementation

Notwithstanding the overall advancements, the study underscores numerous enduring issues, notably the elevated compliance costs and the scarcity of qualified professionals, which reflect conclusions from other regional studies (Masoud, 2020; Samson, 2021). The costs related to enhancing financial systems and delivering comprehensive training have placed significant strains on smaller branches, particularly in rural regions. Recent research by Alawattage et al. (2022) corroborates these findings, illustrating that similar issues are prevalent in emerging economies characterized by resource constraints and nascent regulatory frameworks.

The deficiency of sufficient training and technology assistance is a persistent issue in IFRS implementation throughout Africa. In Kenya, smaller banks encounter comparable difficulties stemming from the complex demands of fair value accounting and impairment testing under IFRS, which require specialized expertise and technology that several institutions do not possess (Wagoki & Bwisa, 2020). This indicates that for IFRS adoption to be more effective in Tanzania, focused expenditures in training initiatives and technical enhancements are crucial.

Implications for Policy and Practice

The ramifications of these findings are crucial for policymakers and financial institutions in Tanzania. Continuous support through capacity-building initiatives and financial aid for smaller institutions is essential for the full realization of IFRS adoption benefits. Samson (2021) asserts that professional development aligned with the dynamic character of IFRS is essential for maintaining uniform compliance and reducing inconsistencies in reporting standards.

Furthermore, the government and regulatory entities, including the National Board of Accountants and Auditors (NBAA), must assume a proactive role in delivering training and resources to address the skills gap. The successful implementation of IFRS in Tanzania relies not alone on the enforcement of standards but also on empowering institutions to fulfill them efficiently through strong support systems. This strategy can augment the effectiveness of IFRS, especially in rural and under-resourced regions where adherence is presently irregular.

Limitations and Future Research

This study offers significant insights into the impact of IFRS implementation at NMB Bank, however its findings pertain solely to a single institution. To generalize these findings, subsequent study should broaden the sample to encompass various banks and additional financial institutions in Tanzania. Moreover, longitudinal studies would yield a more profound comprehension of the effects of IFRS on the quality of financial reporting over an extended period, as compliance and regulatory frameworks develop.

This analysis confirms that IFRS adoption enhances financial reporting quality while also identifying substantial hurdles that must be overcome to fully attain these benefits. Strategic investments in training, technology, and regulatory assistance are essential for addressing these problems and ensuring the proper implementation of IFRS throughout all regions and sectors of Tanzania's banking system.

Conclusion

This study assesses the influence of IFRS implementation on the quality of financial reporting at NMB Bank in Tanzania, emphasizing transparency, precision, and non-performing loan management. The findings indicate that the deployment of IFRS has resulted in substantial enhancements in these domains, particularly in the transparency and accuracy of financial statements. The decrease in variances between reported and audited statistics, along with the stabilization of NPL ratios, illustrates that IFRS enhances the reliability and comparability of financial information, aligning NMB Bank's reporting processes with international standards. These enhancements are crucial for strengthening investor trust and enticing foreign investment, hence helping Tanzania's overarching economic growth objectives.

Nevertheless, the report highlights significant problems, including insufficient training and technology assistance, especially in rural locations, which hinder the consistency and efficacy of IFRS implementation. These issues underscore the necessity for focused interventions and policy assistance to close the implementation gap. Resolving these difficulties is essential for fully achieving the advantages of IFRS inside Tanzania's banking sector.

The report emphasizes the necessity of ongoing investment in capacity development and technology infrastructure to guarantee sustained compliance and optimize the benefits of IFRS adoption. These insights provide essential information for policymakers and financial institutions seeking to enhance financial transparency and stability in emerging nations.

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The Influence of Procurement Planning Assessment on Public Procurement Performance in Tanzania: A Case of Parastatal Organizations in Dodoma.

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Abstract

This study investigated the influence of procurement planning assessment on procurement performance in Parastatal organizations in Dodoma, Tanzania. The study was conducted in Dodoma, chosen due to persistent suboptimal procurement performance trends indicated in the 2021 CAG Report. The theories guiding the study were the resource-based view and compliance performance reform cycle model. A mixed-methods approach was employed in the

study. The research design adopted was a cross-sectional survey. Simple random and purposive sampling were utilized, the study involved a sample size of 134 respondents in the study area. Quantitative data were collected through questionnaires and qualitative data was collected through interviews. Data analysis of the proposed study used is descriptive analysis and inferential statistics using regression analysis to analyze the quantitative data. While qualitative data analyzed using thematic analysis technique. The findings revealed significant positive relationships between procurement planning assessment and procurement performance. This implied that the study underscored the importance of procurement planning assessment in enhancing procurement performance within Parastatal organizations. The findings suggested the need for policymakers and organizational leaders to prioritize strategic procurement planning assessment to optimize procurement processes. The study recommended the establishment of structured processes for planning, implementation, and evaluation of strategic procurement planning practices.

Key words: *Procurement Planning Assessment, Public Procurement Performance, Parastatal organizations*

1. Introduction

Interest in the performance of public procurement has surged globally among development partners, governments, professionals, politicians, bodies, and researchers due to its intricate nature and significant impact. It aims to encompass a broad spectrum of public services such as healthcare, social services, education, transportation, and environmental initiatives (Mrope, 2017; Chagalima, Mchopa & Ismail, 2022). In the contemporary landscape, both developed and developing nations are transforming their legal, organizational, and institutional frameworks to enhance the efficiency of public procurement.

This is particularly pertinent in the case of Finland, where government expenditure constitutes a larger proportion of Gross Domestic Product (GDP) compared to most Organization for Economic Co-operation and Development (OECD) countries. According to Lau (2017), government expenditure in Finland escalated by 9.3%, from 46.8% to 56.1% of GDP, positioning developed nations, notably Finland, with the second-highest public expenditure levels among OECD countries.

Studies by Myers (2018) conducted in Sub-Saharan Africa provide evidence that procurement of goods, works, and services accounts for approximately 70% of total public expenditure. Lau, Lonti, and Schultz (2017) argue that developing countries lose between 20% to 40% of their Gross Domestic Product (GDP) annually due to poor performance in public procurement. In Tanzania, for instance, over 70% of the national annual development budget is allocated to procurement activities (Senzu & Ndebugri, 2017). Consequently, even minor enhancements to the procurement system can result in substantial budget savings (Krause & Tutunji, 2014; Senzu & Ndebugri, 2017).

Presently, public procurement has earned significant attention worldwide as a critical function for various sectors, including the acquisition of healthcare equipment and medicines (Israel et al., 2019), the construction of classrooms, and other educational infrastructure (Ismail, 2022). Consequently, when governments play a central role in service provision, fundamental measures for successful public procurement processes must be implemented, encompassing quality service delivery and procurement reforms in terms of legislation and regulations. Conversely, public procurement in Tanzania has not served the best interests of the country, characterized by outdated laws governing procurement processes (Matto, 2017). Despite numerous studies conducted in Tanzania to address these issues, procurement activities often suffer from neglect, lack of direction, interference, poor coordination, absence of competition and transparency, varying levels of corruption, and inefficiencies (Chang'a, 2019; Kawina, 2019).

The success observed in enterprise performance globally is not merely fortuitous but is attributed to effective procurement planning assessment (Stewart, 2015). Presently, organizations from both the private and public sectors view procurement planning assessment seriously as a means to expedite their performance (Gioko & Njuguna, 2019). This underscores the importance of procurement planning assessment as a vital tool for organizations seeking to thrive amidst competition in the ever-evolving global business environment (Jayawarna & Dissanayake, 2019).

A procurement plan assessment is an essential component within a structured and effective way to acquire products, services, and works in public procurement (Changalima, Mchopa & Ismail, 2022). Even though the Procurement Planning Act of 2011 which was amended in 2016, has given legal prescriptions, most of the parastatal organizations in Tanzania are still facing challenges in their compliance (PPRA, 2021). This non-compliance causes several problems which inhibit efficiency, raise costs, and result in poor procurement performance. For example, in the financial year 2020/2021, among the 718 organizations that are registered in the Tanzania National e-Procurement System (TANePS), only 574 organizations had the Annual Procurement Plans (APPs) approved and published, this can be described as compliance rate of only 80% (PPRA, 2020/21). Also, 20% of the registered entities had no APPs to submit, suggesting significant non-compliance challenges were presented (PPRA, 2021).

Several factors contributing to procurement planning non-compliance is well-documented (Paul 2020; Elfes, 2020; Munyawera, 2018) that many procurement plans are not well-aligned with financial budgeting, poor participation of user departments in the procurement planning process, and limited and untimely release of budgeted funds results in delays and the inability to execute procurement practice. This is justified by the PPRA report for 2020/21 which indicates that out of the total planned procurement value of TZS 25.82 trillion, parastatal organizations accounted for TZS 9.64 trillion (37.3%), this shows that more than 60% of parastatal organizations are not having proper procurement planning strategies or still facing faced execution issues of their plans (PPRA, 2021).

Although the presence of the challenges and the impact of their outcomes is known (Changalima & Mdee, 2023), the exact nature of the effects of strategic procurement planning assessment on the general performance of public procurement in parastatal organizations is not very well researched (Adjepong & Anane, 2022; Mushi, Changalima, & Mwaiseje, 2020). Particularly, there is a lack of research information concerning aspects of procurement planning assessment. Therefore, this study was undertaken to fill the research gap concerning the influence of procurement planning assessment on the performance of public procurement in selected parastatal organizations in the Dodoma region of Tanzania.

2. Literature Review

2.1 Theoretical Review

The Resource-Based View (RVB)

One of the best theories in strategic management practices is the resource-based view theory (RBV). This theory was first advanced by Edith Penrose's in the late 1950s in 'The Theory of the Growth of the Firm'. The concept was largely made known to the field of strategic management practices in the late 1980s and became a dominant framework in the 1990s. The idea behind Penrose (1959) concept is that firm performance is the outcome of the productive services available from the resources which give a peculiar character to each organization.

Resource-Based View (RVB) is a bundle of heterogeneous resources distributed across firms that exist over time. This idea is supported by Barney (1991), who asserts that the firm's resources are the fundamental determinants of competitive advantage and performance of the firms. Barney (1991), emphasized that a firm's resources include all assets, capabilities, organizational processes, firm attributes, information, and knowledge, among others controlled by a firm that enable the firm to conceive and implement strategies that improve its efficiency and effectiveness.

The strategic procurement planning practices on the other hand can be seen as the strategic resources which can be the cornerstone for procurement performance. This is because; strategic procurement planning resources can help parastatal organizations to perform better in the procurement process. This has also attracted attention in the parastatal organization performance and strategic procurement planning practices.

This theory holds that, to have a sustained competitive advantage, these resources must be valuable, inimitable, non-substitutable, and non-transferable (Eisenhardt and Martin, 2000), with this idea in mind, strategic procurement planning practices as resources in the organization can act as valuable and unique resources that can differentiate one parastatal organization from another. Although this theory has tried to show the connections between firm resources and performance it does not comprehensively identify a direct link with the public procurement performance of parastatal organizations.

Compliance Performance Reform Cycle Model

This model is useful in measuring the performance of procurement function (Mrope, 2018). It was first developed by Thai (2009) is used to describe the performance and process measurement of public procurement function. In this aspect, performance can rely on outcomes on the other hand compliance can measure the public procurement process. Therefore, outcomes which are cost reduction in the procurement activities; and timely delivery of needed products have to be considered apart from compliance with rules and regulations when there is a need to assess the performance of procurement management unit.

Therefore, the model was useful in ensuring that the main indicators of measuring the performance of procurement management unit are considered whereby a dependent variable is measured in terms of cost reduction, timely delivery and compliance with procurement rules and regulations. To study the relationship between strategic procurement planning practices and the performance of procurement, it is necessary to review another so-called Compliance Performance Reform Cycle Model.

The reason for combining these theories in this study is that a single theory of RBV does not adequately cover all relevant variables and relationships; therefore, the parameters from these theories have been adopted to come up with the conceptual framework for this study.

2.2 Empirical Review

Christopher (2021), in his study, revealed there are close relationship between the effective implementation of procurement plans and service delivery in the public sector in such a way that when a procurement plan is effectively implemented there is a direct relationship with better service deliveries in public organizations. This is because a procurement plan enables the availability of requirements on time and from the right suppliers and hence leads to better service delivery. He further argues that despite the benefits that are achieved by having an effective implementation of procurement planning still there are factors that hinder the achievement of effective implementation of procurement plans and these are corruption, limited skilled procurement personnel, and Lack of enough funds to undertake and implement procurement plans.

Aimiabile (2019) in their study on procurement planning on value for money among selected districts in the southern province, of Rwanda, found that preparation and implementation of a procurement plan in the public sector is a collaborative task that needs support from another department within the organization. In their study the key challenges highlighted as the cause for poor implementation of procurement plans are, poor procurement scheduling, inappropriate procurement packages, and poor selection of methods of procurement, these were identified as key challenges in the preparation and implementation of procurement plans in the public sector.

Elfas (2020) assessed the Factors affecting the Effective Implementation of procurement plans in the public sector in Tanzania; the case of the Tanzania Revenue Authority. This study specifically focused on four specific objectives namely identifying how the involvement of the user department, resources allocation, management support, and staff competence influence the effective implementation of the procurement plan. The study findings revealed that in Tanzania Revenue Authority procurement plan is affected by user departments who are not properly involved in both budgeting processes and implementation of the procurement plan. It has further revealed that staff from user departments have little knowledge of PPA No.7 of 2011 and amendment 2016 and its Regulation due to lack of exposure to training and hence fail to understand their role as required by law in implementing procurement plan. The findings also revealed that the implementation of the procurement plan in TRA was affected by resource allocation through budgeting, management support, and competence of PMU staff.

Based on the findings, the researcher concluded that the factors affecting the implementation of the procurement plan in the Tanzania Revenue Authority are poor involvement of the user department, staff competence in the preparation and implementation of the procurement plan, resources allocation, and management support. The researcher recommended that management should ensure staff from the user department are trained on PPA No.7 of 2011 amendment 2016 and its regulation to impart knowledge on their roles and responsibilities in procurement processes. The management should allocate required resources effectively to ensure timely implementation of the planned activities.

3. Material and Research Methodology

This study adopts an explanatory research design using the survey strategy. The chosen design facilitates the establishment and explanation of causal relationships between variables, specifically the effect of procurement planning compliance on the performance of public procurement in selected parastatal organizations in Dodoma, Tanzania. In this particular study, it will allow the fulfilment of the following objective for the researcher: It also enables cause-and-effect relationships to be identified and made clear, which is important for understanding the relationship between procurement planning practices and procurement results.

The approach selected is corresponding to the nature of the research problem and goals, the purpose of this study is to examine the influence of procurement planning compliance on the performance of public procurement within the selected parastatal organizations in Dodoma, Tanzania, and to achieve this, a concurrent mixed-method triangulation approach is employed that aims to gather both quantitative and qualitative data at the same time.

The study employed an informant interview guide to conduct interviews with key informants, specifically Heads of Department (HODs) of Procurement, aiming to gather qualitative primary data. While, a structured questionnaire containing both close-ended and open-ended questions, which were administered to respondents. This method was chosen because it enabled the collection of data from a broad target population simultaneously, aligning with the principles of being economical, practical, and efficient, as recommended by (Vinod & Anand, 2017).

Probability sampling techniques specifically stratified random sampling were employed to select 134 staff from the procurement departments in the parastatal organizations. And non-probability sampling was also used to select key informants to triangulate questionnaire quantitative findings.

This proposed study used descriptive analysis and inferential statistics using regression analysis to analyze the quantitative data. The study also used Statistical Packages for Social Science (SPSS) version 20 to analyze the captured data. Thematic analysis was used to analyze the captured data from the field through semi-structured interviews. The analysis involved a critical literature review, generation of codes, searching, reviewing, defining, and naming the themes to create the matrix which showed the main themes and sub-themes on staff competency and public procurement performance.

4. Results and Discussion

4.1 Description of the Respondents' Demographic Characteristics

In this study, Table 1 indicates an overview of the demographic characteristics of the respondents who participated in the research. Understanding the demographic profile of the respondents was crucial for gaining insights into the composition of the sample population and interpreting the findings of the research accurately. Demographic variables such as age, gender, educational background, professional experience, and organizational affiliation illuminated the diversity and representativeness of the sample, enabling a comprehensive analysis of the collected data. By examining these demographic characteristics, this study aimed to offer a clear picture of the profile of the respondents involved, thereby enhancing the understanding of their perspectives and experiences regarding the subject matter under investigation.

This section presents the findings and discussions of Procurement performance. The results are obtained from descriptive statistics and inferential statistics. The demographic characteristics of employees, associations between procurement strategic practices on public procuring entities' performance in Tanzania Parastatal organizations, and the effect of the awareness and attitudes of public sector management towards private-public partnership implementation in Dodoma.

Table 1: Demographic characteristics of respondents

Demographic Characteristics	Frequency (f)	Percent (%)
Gender		
Male	79	59.0
Female	55	41.0
Age		
18- 30 years	25	18.7
	758	

31-45 years	80	59.7
46-55 years	24	17.9
56+ years and above	5	3.7
Education Level		
No formal Education	0	0.0
Certificate	0	0.0
Diploma	34	25.4
Bachelor Degree	61	45.5
Master's Degree	39	29.1
PhD	0	0.0
Experience of Work		
0-2 years	30	22.4
3-5 years	97	72.4
6-9 years	7	5.2
10 years and above	0	0.0

Source: Field Data, 2024

Results from Table 1 reveal the demographic characteristics of the respondents. Firstly, it was observed that the majority of respondents were male, constituting 59.0% of the total sample, while females accounted for 41.0%. This gender distribution reflects a slight imbalance in the participation of males compared to females which imply that in parastatal organizations male are more involved in the procurement process than female. Secondly, in terms of age, the largest proportion of respondents fell within the age group of 31 to 45 years, representing 59.7% of the total sample. This suggests that the study attracted a significant number of mid-career professionals. Additionally, respondents aged 18 to 30 years, 46 to 55 years, and 56 years and above constituted 18.7%, 17.9%, and 3.7% respectively, indicating a diverse age distribution among the participants.

Concerning educational background, the findings indicated that a considerable portion of the respondents held a Bachelor's degree, comprising 45.5% of the total sample. This was followed by respondents with a Master's degree at 29.1%. The high representation of individuals with Bachelor's and Master's degrees suggests that the study attracted a well-educated sample population. Furthermore, respondents with a Diploma accounted for 25.4% of the sample, indicating a significant presence of individuals with intermediate-level qualifications. Notably, it was found that out of 134 sampled population there was no individual that lack formal education, also, bachelor degree was highest education level as there were not individual that responded to questionnaire that had PhD education level. This show that respondents were literacy with varieties level of education which guarantee the study to gather relevant information from them.

Regarding work experience, the majority of respondents reported having 3 to 5 years of experience, constituting 72.4% of the total sample. This indicates that the study primarily engaged individuals with moderate levels of professional experience. Additionally,

respondents with 0 to 2 years of experience accounted for 22.4%, reflecting a substantial proportion of early-career professionals. Conversely, only a small percentage of respondents, 5.2%, reported having 6 to 9 years of experience, while none had 10 years and above. Overall, the demographic characteristics of the respondents provide valuable insights into the profile of the sample population and shed light on the diversity and representativeness of the participants in this study.

The demographic characteristics of the respondents in this study provide valuable insights into the profile of individuals engaged in procurement activities within the Tanzanian context. The predominance of male respondents aligns with the findings of previous studies such as Beschel et al. (2018), which also reported a higher representation of males in survey samples within the procurement field. This gender disparity underscores the need for targeted interventions to promote gender diversity and inclusion in the procurement profession. Additionally, the concentration of respondents within the 31 to 45 years age group is consistent with findings from research by Adwok (2015) and Kheifets & Chernova (2020), which identified mid-career professionals as the largest demographic group within procurement-related surveys. However, the relatively lower representation of younger and older age groups suggests a potential gap in engaging early-career professionals and experienced practitioners in procurement research, warranting further investigation and targeted outreach efforts (Matto, 2017; Bitesigirwe, 2019).

Furthermore, the educational profile of the respondents, characterized by a significant proportion holding Bachelor's and Master's degrees, resonates with findings from studies by Addae-Korankye & Aryee (2021) and Gioko & Njuguna (2019), which also reported high levels of educational attainment among procurement professionals. This underscores the importance of formal education in the field of procurement and highlights the need for continuous learning and professional development to navigate the complexities of modern procurement practices effectively. However, the limited representation of individuals with extensive work experience raises questions about the involvement of seasoned practitioners in research endeavors (Elfes, 2020; Jayawarna & Dissanayake, 2019). This suggests a potential gap in engaging experienced professionals in procurement research, which could be addressed through targeted recruitment strategies and collaboration between academia and industry (Cheseto et al., 2019; Nasra, 2014).

Overall, the findings from this study contribute to the existing body of knowledge on procurement demographics and provide valuable insights into the profile of practitioners within the field. By contextualizing the findings within the broader literature, this study enhances our understanding of the demographic characteristics of procurement professionals and informs strategies for promoting diversity, inclusion, and professional development within the profession.

Summary of performance statistics for public procuring

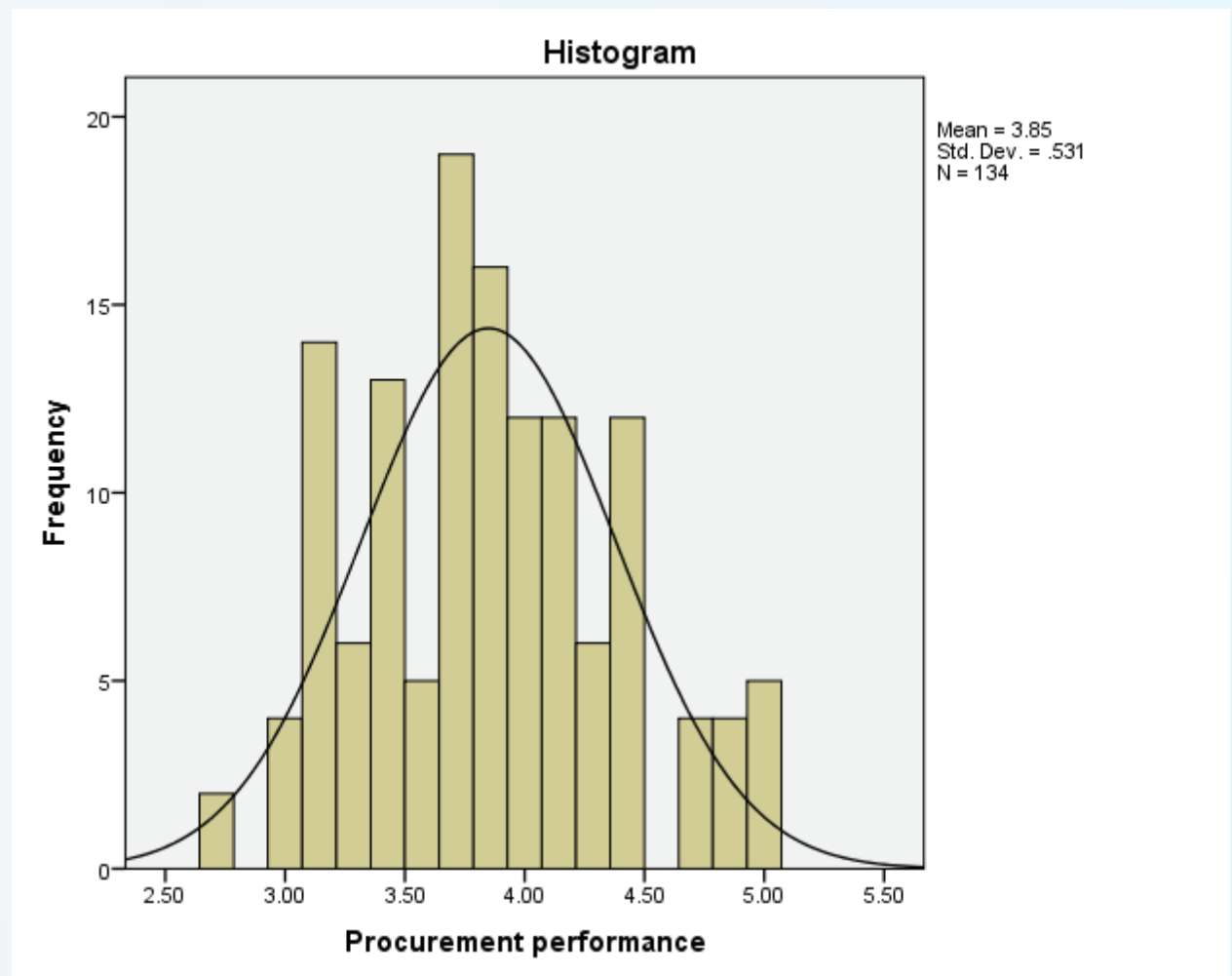
The table provides a summary of performance statistics for public procuring entities, focusing on key metrics related to procurement performance, specifically time and cost, along with an

overall performance score. For time-related performance, the mean time score is 2.9114, with a standard deviation of 0.402. This suggests that, on average, public procuring entities take approximately 2.91 units of time to complete procurement processes, with some variability around this mean. Regarding cost performance, the mean cost score is 1.7243, with a standard deviation of 0.497. This indicates that, on average, public procuring entities incur a cost score of approximately 1.72 units for their procurement activities, with some variance observed across different entities. The minimum and maximum values for both time and cost metrics provide additional context. The minimum time score recorded is 2 units, while the maximum is 5 units, indicating a range of performance levels among public procuring entities. Similarly, the minimum cost score is 1 unit, while the maximum is 5 units, reflecting varying levels of cost efficiency across entities. The table also presents an overall performance score, which combines both time and cost metrics to provide a holistic assessment of procurement performance. The mean overall performance score is 3.857, with a standard deviation of 0.433. The minimum overall performance score recorded is 2.7143, while the maximum is 4.6. This indicates that, on average, public procuring entities achieve an overall performance score of approximately 3.86 units, with some variability in performance observed across entities. In summary, the table offers valuable insights into the performance of public procuring entities, highlighting their efficiency in terms of time and cost, as well as providing an overall assessment of their procurement performance.

Table 2: Public procuring entities' performance summary statistics

Procurement performance	Mean	Std. Dev.	Min	Max
Time	2.9114	.402	2	5
Cost	1.7243	.497	1	5
Overall	3.857	.433	2.7143	4.6

Measurement of procurement performance in Tanzanian Parastatal organizations is done with the help of measurable parameters of time, costs, and overall performance. The average time score of 2.9114 units with a standard deviation of 0.402 indicates varying durations across entities, from a minimum of 2 units to a maximum of 5 units, illustrating procedural consistency. Cost which had a mean score value of 1.7243 ranges from 1 to 5 units, indicating varied cost controls. On the other hand, procurement performance that utilizes the value of time and cost metrics was found to have a mean score of 3.857 units that range from a minimum of 2.7143 to a maximum of 4.6, reflecting varying levels of operational effectiveness. Those performance indicators provide a structure that help assess the efficiency of procurement planning in Tanzanian Parastatal organizations and their significance for strategic decision-making and performance improvement.



Source: Field data (2024)

The results of a multiple regression analysis examining the effects of procurement planning assessment on public procurement performance within Tanzanian Parastatal organizations. In this regression model, two independent variables are considered: "Resources capability assessment" and "Stakeholders' expectations assessment," along with a constant term. The coefficients for these variables represent the estimated change in the dependent variable (procurement performance) for a one-unit change in each independent variable, holding other variables constant. The coefficient for "Resources capability assessment" is 0.3347, with a standard error of 0.0232. This indicates that for each unit increase in resources capability assessment, there is an estimated increase of 0.3347 units in procurement performance. The t-value of 18.34 indicates that this coefficient is statistically significant at the 0.05 level, with a p-value of 0.00. Similarly, the coefficient for "Stakeholders' expectations assessment" is 0.4572, with a standard error of 0.0342. This suggests that for each unit increase in stakeholders' expectations assessment, there is an estimated increase of 0.4572 units in procurement performance. Like the previous variable, this coefficient is also statistically significant at the 0.05 level, with a t-value of 14.34 and a p-value of 0.00. The constant term in the model is 2.143, indicating the estimated procurement performance when both independent variables are zero. The overall fit of the model is assessed by the R-squared value, which is

0.786 in this case. This suggests that approximately 78.6% of the variation in procurement performance is explained by the independent variables included in the model. The F-test statistic is 74.643 with a p-value of 0.000, indicating that the overall regression model is statistically significant at the 0.05 level, implying that at least one of the independent variables significantly predicts procurement performance. In terms of model evaluation criteria, both the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC) are provided. Lower values of these criteria indicate a better fit of the model. The results found from inferential statistical was aligned with the results form interview with Key Informants during in-dept interview one of the KII was noted saying that;

"Our procurement planning assessment starts with a comprehensive needs assessment involving all departments. We then prioritize based on urgency and budget availability, followed by a detailed market assessment to identify potential suppliers." (HOD of Procurement, Interviewer No.1, 2024).

Also, HOD further contributed saying that;

"Resource availability, compliance with regulatory frameworks, and the need to achieve cost efficiency are key factors influencing our strategic procurement practices."

Another Head of procurement from Interviewer No.2 contributed by adding to the discussion by saying that;

"We follow a structured approach that includes stakeholder consultations, budget alignment, and a thorough review of previous procurement outcomes to refine our strategies." (HOD of Procurement, Interviewer No.2, 2024).

"Stakeholder expectations, market conditions, and past performance data play significant roles in shaping our strategic procurement choices." (HOD of Procurement, Interviewer No.2, 2024).

Moreover, a participant from Interviewer No.3 contributed during an interview saying;

"Strategic planning and implementation are pivotal in achieving our organizational goals, as they streamline processes, foster innovation, and ensure we get the best value for money." (HOD of Procurement, Interviewer No.3, 2024).

In summary, the results of this multiple regression analysis suggest that both resources capability assessment and stakeholders' expectations assessment have significant positive effects on public procurement performance within Tanzanian Parastatal organizations. The model provides a good fit to the data, explaining a substantial portion of the variance in procurement performance.

Table 3. Multiple regression showing effects of procurement Planning assessment on public procurement performance in Tanzania Parastatal organizations.

Procurement performance	Coef.	St .Err.	t-value	p-value	[95% Conf. Interval]
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Resources capability assessment	.3347	.0232	18.34	0.00	.681	.906
Stakeholders' expectations assessment	.4572	.0342	14.34	0.00	-.383	-.2
Constant	2.143	0.0214				
Mean dependent var	2.11		SD dependent var		0.436	
R-squared	0.786		Number of observations		134	
F-test	74.643		Prob > F		0.000	
Akaike crit. (AIC)	154.384		Bayesian crit. (BIC)		133.301	

5. Summary of the Findings

This study investigated the factors influencing procurement performance in Tanzania's Parastatal organizations, focusing on the Strategic Procurement Planning Analysis, the Choice of Strategic Practices, and Strategic Procurement Planning Implementation. Specifically, the study examined the influence of these factors on procurement performance within three key Parastatal organizations. By delving into these areas, the study aimed to provide insights into enhancing procurement practices and performance in these vital public sector entities.

5.1 Conclusion

The results of this multiple regression analysis suggested that both resources capability assessment and stakeholders' expectations assessment have significant positive effects on public procurement performance within Parastatal organizations.

These findings align with previous research emphasizing the importance of thorough assessment in procurement planning (Chesseto et al., 2019). However, despite the proactive engagement in assessment, challenges such as resource constraints and stakeholder conflicts were prevalent, therefore suggesting areas are required for improvement. In an effort to improve on resources capability assessment as well as stakeholders' expectations assessment for organizations, the following activities can be undertaken. This may involve procuring better data collection equipment and methods and means of analyzing the resources in a better way. The weakness on the side of stakeholders can be addressed by direct consultations and feedback from stakeholders to improve the strategies applied to procurement. Strategic planning and assessment training aimed at the procurement teams will increase the likelihood of adequate assessment processes. Incorporating these analyses into organizational planning initiatives fosters conformity with general objectives, while constant checks and appraisals provide feedback to develop corresponding monitoring and evaluation frameworks.

Therefore, procurement planning plays a pivotal role in driving procurement performance. Organizations that conduct thorough analyses of resource capabilities and stakeholders' expectations tend to achieve better procurement outcomes. This underscores the importance of strategic decision-making in shaping procurement trajectories and aligning procurement activities with organizational goals and stakeholder needs.

5.2 Implication of the Study

Overall, this study underscores the importance of strategic management in driving procurement performance within Parastatal organizations. By prioritizing strategic planning, meticulous implementation, and fostering adaptability, organizations can optimize their procurement processes and achieve superior performance outcomes. These findings have significant implications for policymakers, practitioners, and scholars in the field of public procurement, providing valuable insights into strategies for enhancing organizational effectiveness and efficiency.

5.3 Recommendation

Based on the findings of this study, the following are the recommendations for government, policymakers, Prime Minister's Office Labor, Youth, Employment and Persons with Disability (PMO-LYED), and specifically at the three parastatal organizations selected in this study. Enhance Strategic Procurement Planning Practices: Parastatal organizations should prioritize the enhancement of strategic procurement planning assessment by investing in resource capability assessment and stakeholder engagement. This involves regularly assessing the organization's resources, including finances, personnel, and technology, to ensure alignment with procurement activities. Additionally, formalizing processes for gathering input from stakeholders such as suppliers, end-users, and regulatory bodies can provide valuable insights to inform procurement strategies and plans.

5.4 Areas for Further Study

The potential areas for future studies is exploring the impact of digitalization of technologies on Procurement Performance: With the increasing adoption of digital technologies in procurement processes, further studies could investigate the impact of digitalization on procurement performance within Parastatal organizations. This could involve examining how technologies such as e-procurement platforms, blockchain, and artificial intelligence influence efficiency, transparency, and compliance in procurement practices.

5.5 Study Contribution

The study conclusion will contribute to the existing body of knowledge and aid for the future research on the similar subject. Also, the study adds to the shortage of literature that explored the procurement planning compliance on performance of public procurement in context of Tanzania. Moreover, the outcome provides a benchmark for further studies where authors will have empirical evidence to assess for their studies

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Challenges Facing Recruitment Process on Employees' Performance: A Case of National Microfinance Bank in Dodoma

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Abstract

The study explored challenges facing recruitment process on employees' performance; a case of National Microfinance Bank in Dodoma. The study used mixed research approach in which the survey research design was employed. The population of the study was employees of NMB bank, Dodoma, in which the sample size of the study was 43 respondents. The study used both random and purposive sampling techniques. Primary data was collected using questionnaires and interviews. The study found challenges facing recruitment process include technical know-how, the budget insufficiency, and time biasness. Owing to the findings researcher recommends that the institution should not be biased. It is also recommended that rules and regulations should be effective. Policies and plans should be planned in such a way that effective recruitment process is enhanced. Furthermore, it is recommended that other institutions in the country should make sure that competence-based recruitment is in place.

Keywords: *Challenges; Recruitment Process; Employees' Performance*

Introduction

The recruitment process plays a pivotal role in shaping the performance and productivity of employees in any organization. A well-executed recruitment strategy ensures the selection of qualified candidates who fit the organizational culture and contribute effectively to the company's goals. However, many organizations, including financial institutions like National Microfinance Bank (NMB) in Dodoma, face numerous challenges during the recruitment process, which can adversely affect employee performance.

One significant challenge in the recruitment process is the attraction of qualified candidates. As noted by Ahmed (2019), organizations often struggle to draw in candidates with the requisite skills and qualifications due to the competitive nature of the job market. This issue is exacerbated in specialized sectors such as microfinance, where the demand for skilled professionals frequently surpasses the supply. Another challenge is the retention of talent during the recruitment process. Higher turnover rates among potential candidates can be

attributed to various factors, including lengthy recruitment procedures and better offers from competing organizations (Smith, 2020).

The efficiency of the recruitment process is crucial, as prolonged hiring times can lead to the loss of top talent to competitors. Furthermore, the integration of technology in recruitment processes has introduced both opportunities and challenges. While tools such as Applicant Tracking Systems (ATS) have streamlined the recruitment process, their improper implementation can lead to biases and the overlooking of potentially excellent candidates (Johnson, 2021). Ensuring that technology is used effectively and ethically is essential for fair and efficient recruitment.

The alignment of recruitment strategies with organizational goals is another area of concern. According to Brown (2018), a misalignment can result in the hiring of individuals who do not resonate with the company's vision and objectives, thus affecting overall performance. Recruitment should not only focus on filling vacancies but also on finding candidates who can contribute to the long-term success of the organization.

In the context of NMB in Dodoma, these challenges are particularly pronounced due to the bank's strategic importance in fostering financial inclusion and economic development. As Mushi (2017) points out, microfinance institutions are pivotal in providing financial services to underserved populations, and their success heavily relies on the competency and performance of their employees. Addressing these challenges requires a multifaceted approach that includes improving the employer brand, streamlining the recruitment process, leveraging technology effectively, and aligning recruitment practices with strategic goals. By tackling these issues, NMB can enhance its recruitment process, thereby improving employee performance and contributing to its mission of financial inclusion.

Methods

Research Approach

This study adopted a mixed-methods approach, integrating both qualitative and quantitative methodologies. A mixed approach refers to a research survey that blends qualitative and quantitative methods, ideas, approaches, and characteristics within a single study (Johnson & Christensen, 2019). Qualitative data were gathered through interviews and documentary reviews, while quantitative data were obtained via a survey questionnaire.

Research Design

The study used survey research design. Whereby Creswell (2019) defines survey research design as a one stop design in which researcher collects data only once from the field. Survey research design was chosen because it allows researchers to collect data from a large number of respondents efficiently; furthermore, survey research design is relatively cost-effective compared to other research methods.

Population of the study

A target population denotes a cohort of individuals or organizations sharing identifiable common characteristics (Creswell, 2019). In the context of this study, the target population will be the employees of four NMB branches which are Mazengo, Bahi, UDOM and Chamwino with a total of 48 employees.

Sample Size

This research involved a sample size comprising 43 participants selected from four (4) NMB branches as follows; Chamwino 12 respondents, Mazengo 14 respondents, Bahi 09 respondents and UDOM 08 respondents. According to the central limit theorem, it is evidenced that a sample size of 30 or more is often considered sufficient to make reasonable statistical inferences about a population (Kumar, 2021). Additionally, interviews were carried out with 10 key informants, specifically the leaders of five distinct units within National Microfinance Bank branches in Dodoma.

Sampling Technique

Sampling refers to the method of selecting a subset from a larger population (Johnson & Christensen, 2019). In this research, both simple random and purposive sampling methods were utilized to gather both quantitative and qualitative data.

Methods of Data Collection

According to Johnson & Christensen (2019), in a research study, data acquisition methods involve physical analysis. They can be classified into two main types: primary and secondary data. Hence, this study utilized interviews and questionnaires as techniques for gathering data.

Data Analysis

This study utilized content analysis for qualitative data and conducted quantitative data analysis using Statistical Package for Social Sciences (SPSS) version 20. The following econometric equation of multiple regressions was used to perform the analysis in each specific objective.

Results and Discussion

Findings on regard to challenges facing recruitment process on employees' performance were as follows. Findings were as follows; 55.8 percent of the respondents strongly disagreed, 11.6 percent of the respondents disagreed, 11.6 percent of the respondents were neutral, 9.3 percent of the respondents agreed and 11.6 percent of the respondents strongly agreed (see Table 1). These findings show that to the majority the process of recruitment is not affected by technical know-how. These findings are similar to those by Anggesti et al (2023) who found that technical know-how does not affect the process of recruitment.

Table 1: The process of recruitment is affected by technical know how

	Frequency	Percent	Valid Percent	Cumulative Percent

Strongly disagree	24	55.8	55.8	55.8
Disagree	5	11.6	11.6	67.4
Neutral	5	11.6	11.6	79.1
Agree	4	9.3	9.3	88.4
Strongly agree	5	11.6	11.6	100.0
Total	43	100.0	100.0	

Source: Field data, 2024

Secondly researcher wanted to know whether the budget towards recruitment process is sufficient. Findings were as follows; 67.4 percent of the respondents strongly disagreed, 7.0 percent of the respondents disagreed, 11.6 percent of the respondents were neutral, 9.3 percent of the respondents agreed and 4.7 percent of the respondents strongly agreed (see Table 2). These findings according to the majority of respondents the budget towards recruitment process is not sufficient. These findings are similar to those by Anyango et al (2019) who also found that in most organizations budget towards recruitment process is not sufficient.

Table 2: The budget towards recruitment process is sufficient

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	29	67.4	67.4	67.4
Disagree	3	7.0	7.0	74.4
Neutral	5	11.6	11.6	86.0
Agree	4	9.3	9.3	95.3
Strongly agree	2	4.7	4.7	100.0
Total	43	100.0	100.0	

Source: Field data, 2024

Thirdly, researcher wanted to know whether there is enough time to recruit an employee in the organization. Findings were as follows; 9.3 percent of the respondents strongly disagreed, 58.1 percent of the respondents disagreed, 11.6 percent of the respondents were neutral, 11.6 percent of the respondents agreed and 9.3 percent of the respondents strongly agreed (see Table 3). To the majority of the respondents (58.1%) there is no enough time to recruit and employee in an organization. These findings are similar to those by Arifin et al (2020) who also found that time to recruit and employee a worker is not enough in most organizations.

Table 3: There is enough time to recruit an employee in your organization

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	4	9.3	9.3	9.3
Disagree	25	58.1	58.1	67.4
Neutral	5	11.6	11.6	79.1
Agree	5	11.6	11.6	90.7
Strongly agree	4	9.3	9.3	100.0

Total	43	100.0	100.0
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Source: Field data, 2024

Fourthly, researcher wanted to know whether the recruitment process is not biased. Findings were as follows; 65.1 percent of the respondents strongly disagreed, 7.0 percent of the respondents disagreed, 11.6 percent of the respondents were neutral, 9.3 percent of the respondents agreed and 7.0 percent of the respondents strongly agreed (see Table 4). To the majority of the respondents (65.1%) recruitment process is biased. These findings are similar to those by Bakhshwain and Javed (2021) who found that recruitment process is biased in most organizations.

Table 4: The recruitment process is not biased

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	28	65.1	65.1	65.1
Disagree	3	7.0	7.0	72.1
Neutral	5	11.6	11.6	83.7
Agree	4	9.3	9.3	93.0
Strongly agree	3	7.0	7.0	100.0
Total	43	100.0	100.0	

Source: Field data, 2024

Findings in relation to challenges facing recruitment process showed that the process of recruitment is not affected by technical know-how. For that matter technical know-how is not a challenge facing recruitment process. The study found that the budget towards recruitment process is not sufficient. For that matter budget is one of the challenges facing recruitment process. The study also found that there is no enough time to recruit an employee in the organization. For that matter insufficient time is a challenge facing recruitment process. It was also found that the recruitment process is biased. For that matter biasness is a challenge facing recruitment. In a nutshell challenge facing recruitment process include budget, lack of sufficient time and biasness. The interview with one respondent from the human resource unit pointed out that budget, time limit and biasness are some of the challenges facing recruitment process. This was as quoted below;

“...budget is a very big challenge in the recruitment process. But also time limit and biasness also give challenges in the recruitment process...”

Furthermore, researcher also carried out multiple linear regression between employee performance which was the dependent variable and technical know-how, budget, time factor and biasness which were the independent variables.

The mean VIF was found to be 2.22 (see Table 5). If mean VIF is greater than 10 there is a problem of multicollinearity. By getting mean VIF less than 10 it implies that these variables had no problem of multicollinearity.

Table 5 Multicollinearity assumption on Challenges facing recruitment process

Variable	VIF	Tolerance
Technical know-how	2.96	0.341296
Budget	2.73	0.366300
Time factor	1.63	0.613496
Biasness	1.54	0.649350
Mean VIF	2.22	

Figure 1 show P-P plots for employee performance. Values of residuals fall around 45° indicating that there was a linear relationship between independent variables and dependent variable.

Figure 1: Normal P-P plot for linear relationship assumption on Challenges facing recruitment process

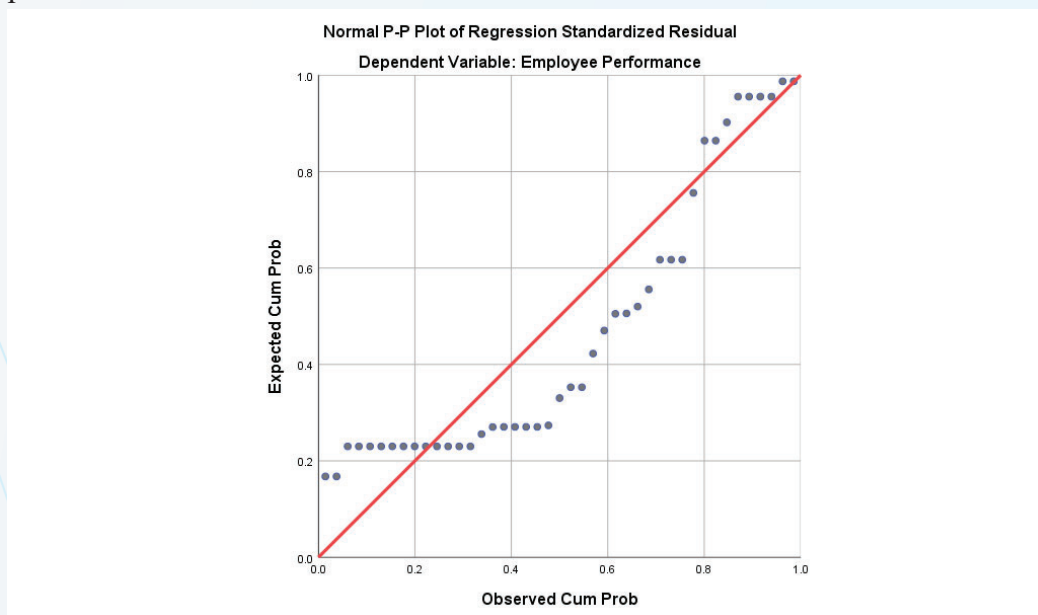
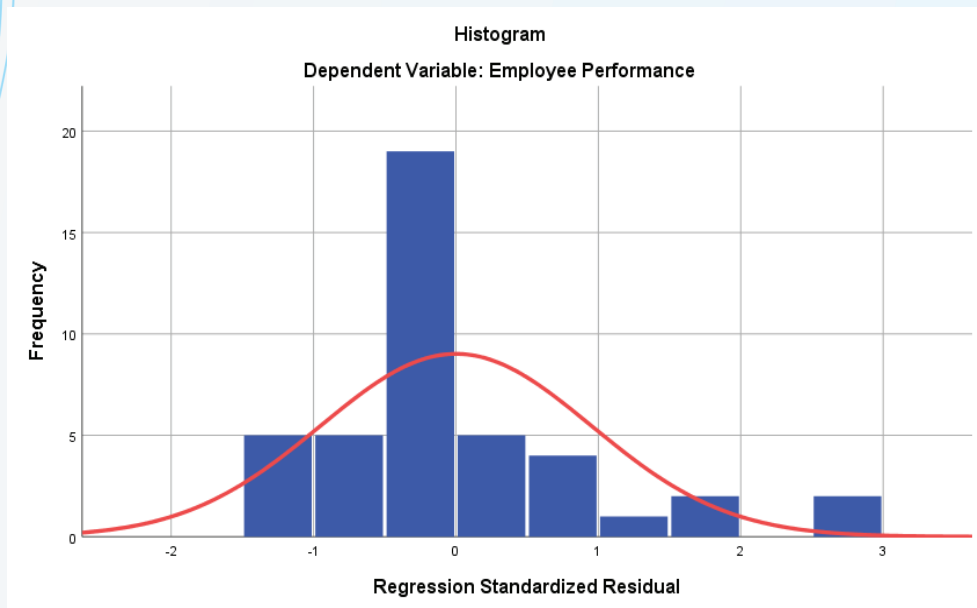


Figure 2 shows histogram of employee performance. The distribution of residuals has a roughly bell shape as shown by red lines indicating that residuals are normally distributed.

Figure 2: Histogram of residuals for Employee performance on Challenges facing recruitment process



The autocorrelation assumption was checked using Durbin-Watson statistic. Results in Table 6 show that the DW statistic was 2.01 indicating that there was no autocorrelation. Findings were as follows; the coefficient for technical know-how was found to be -0.2119. This variable was statistically significant at five percent level of significance. This implies that for a unit increase technical know-how implementation there was 0.2119 units decrease in employee performance (see Table 6). This implies that the process of recruitment is not affected by technical know-how. The coefficient for budget was found to be -0.0428. This variable was statistically significant at one percent level of significance. This implies that for a unit increase budget there was 0.0428 units decrease in employee performance (see Table 7). This implies that the budget towards recruitment process is not sufficient.

The coefficient for time factor was found to be -0.3752. This variable was statistically significant at one percent level of significance. This implies that for a unit increase in time factor there was 0.3752 units decrease in employee performance (see Table 7). This implies that there is not enough time to recruit an employee in the organization. The coefficient for biasness was found to be -0.1367. This variable was statistically significant at ten percent level of significance. This implies that for a unit increase biasness there was 0.1367 units decrease in employee performance (see Table 7). This implies that the recruitment process is biased.

Table 7: Linear Regression Results on Challenges facing recruitment process
Dependent variable: Employee performance

Variable	Coeff	Std. error	Sig
Technical know-how	-0.2119**	0.0778	0.010
Budget	-0.0428***	0.0964	0.000
Time factor	-0.3752***	0.1051	0.001
Biasness	-0.1367*	0.0833	0.098
Constant	0.7057	0.4163	0.008

Number of Obs. = 43	Prob>	F	=	R ²	=	Adj. R ²	=
	0.0000			0.5288		0.4792	
Durbin-Watson	2.01						

Legend:

* = $P < 0.1$, ** = $P < 0.05$, *** = $P < 0.01$

Conclusion

It is concluded that the process of recruitment is not affected by technical know-how, the budget for recruitment process is not sufficient, time for recruitment is not enough but also the recruitment process is biased.

Recommendations

It is therefore recommended that the institution should focus more on knowledge and abilities during recruitment process. The institution should increase the budget and time for recruitment process. It is also recommended that the institution should not be biased. It is also recommended that rules and regulations should be effective. Policies and plans should be planned in such a way that effective recruitment process is enhanced. Furthermore, it is recommended that other institutions in the country should make sure that competence-based recruitment is in place.

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Assessment of Financial Literacy Level Among Small Medical Entrepreneurs and its Impact on Business Performance. A Case Study of Katavi Region

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Abstract

The study assessment of financial literacy levels among small medical entrepreneurs and its impacts on business performance” aimed to evaluate the financial literacy levels of small medical entrepreneurs and analyze its subsequent effects on their business outcomes. That is to examine the influence of financial literacy on the business performance. The study employed a mixed-methods approach, combining quantitative surveys with qualitative interviews to gather a comprehensive understanding of financial literacy among small medical entrepreneurs. A sample of 340 entrepreneurs was selected, ensuring diversity in terms of gender, age and educational background to represent the broader population accurately. Multiple regression analysis was applied to test the influence of financial literacy on business performance by controlling manager’s/owner’s profile and small medical entrepreneur’s specific characteristics. Multiple regression results prove that financial literacy has a positive and significant impact on business performance. Managers/Business owners with financial literacy skills understand business-related financial concepts including debts, savings, insurance and investment which ensure the good performance of their business. The findings of this study have shown that financial literacy among entrepreneurs can improve performance on their businesses. These findings can add value to previous studies while further highlighting the existence of a significant influence of financial literacy on performance. Government agencies and corporations recognize the importance of financial literacy among medical entrepreneurs.

Therefore, proactive efforts need to be accelerated to provide an adequate level of financial literacy among entrepreneurs. Furthermore, entrepreneurial finance can be introduced in formal and non-formal education to ensure that every layer of society enjoys the benefits regardless of their economic status.

Keywords: *Financial literacy, business performance, medical entrepreneurs*

1.0 Introduction

1.1 Background of the Study

Entrepreneurs play a pivotal role in driving economic development and innovation. Their ability to navigate the intricate financial aspects of business is fundamental to the success and sustainability of their ventures. Financial literacy defined as the comprehension and application of financial knowledge is increasingly organized as a key determinant of entrepreneurial success (Mitchell and Lusardi, 2015). As the landscape of entrepreneurship evolves, understanding the financial literacy levels among entrepreneurs becomes essential for fostering a resilient and thriving entrepreneurial ecosystem.

Financial literacy is more than just understanding basic financial concepts, it encompasses the skills necessary to make informed financial decisions in the dynamic and often unpredictable world of entrepreneurship. The link between financial literacy and business success has been established in various studies (Kaplan and Stromberg, 2009). Entrepreneurs with a solid grasp of financial principles are better equipped to manage cash-flow, allocate resources efficiently and navigate the complexities of financial markets.

Numerous studies have emphasized the importance of financial literacy among entrepreneurs. For instance, Lusardi and Tufano (2009) highlighted the impact of financial literacy on entrepreneurial success, emphasizing the need for business owners to possess a strong understanding of financial concepts, Debt literacy, financial experiences and over-in-debtiness (NBER Working Paper No. 14808).

Additionally, studies by Cole and Shastry (2009) delivered into the relationship between financial literacy and entrepreneurial behavior suggesting that entrepreneurs with higher financial literacy levels are better equipped to make informed financial decisions. The effects of education, financial literacy and cognitive ability on the financial market participation (Harvard Business School Finance Working Paper No. 09-71).

Entrepreneurs encounter a myriad of financial of financial challenges including securing, funding, managing debts and optimizing investment decisions. These challenges are compounded by uncertainties inherent in entrepreneurial ventures making financial literacy a crucial tool for mitigating risks and maximizing opportunities (Shane and Venkataraman, 2000).

This research aimed to access the financial literacy levels among small medical entrepreneurs and its impact on business performance, specifically focusing on financial knowledge, attitudes

and behaviors, by pinpointing the strength and weaknesses in entrepreneurs, educators and business support organizations. The main goal was to inform targeted interventions and educational initiatives that can enhance the financial capabilities of entrepreneurs fostering a more resilient and sustainable entrepreneurial ecosystem.

2.0 Literature Review

A literature review is the systematic and comprehensive review of the published and unpublished work in the area of interest of the researcher. The literature reviewed in the context of financial literacy of entrepreneurs recognized the potential consequences of their financial decision on their business. This part consists of two sections, theoretical literature review and empirical literature review.

2.1 Theoretical Literature Review

The earliest known use of the term financial literacy can be traced back to 1992, when a report for the National Foundation for Educational research (NFER) commissioned by NatWest Bank defined financial literacy as the ability to make informed judgements and take effective decisions regarding the use and management of money (Noctor et al, 1992).

Financial literacy as a theoretical was championed by the Jumpstart survey of financial literacy in its inaugural 1997 study survey of financial literacy among high school students. In this study of jumpstart defined financial literacy as the ability to use knowledge and skills to manage one's financial resources effectively for lifetime financial security.

One of the first institutions to introduce the concept of financial literacy on a large scale was OECD. The international Network on financial Education has defined financial literacy as a combination of awareness, knowledge, skills, attitude and behavior necessary to make sound financial decisions and ultimately achieve individual wellbeing (Atkinson and Messy, 2012). This definition is now globally acknowledged and was also endorsed by the G20 leaders in 2012 (G20, 2012).

The definition makes it clear that financial literacy is something more than knowledge; it also includes attitudes, behaviors and skills. It stresses the importance of the decision-making applying knowledge and skills to a real-life process and it indicates that the impact should improve one's financial wellbeing (Atkinson and Messy, 2012).

According to PISA (2017) "Financial literacy is knowledge and understanding of financial concepts and risk, motivation and confidence to apply such knowledge and understanding to make effective financial well-being of individuals and society and enable participation in economic life.

According to Brown et al. (2006), financial literacy for small business owners must contemplate the ability to read and understand fundamental financial statements as well as the

ability to read numbers in order to make informed judgments and to make effective decisions regarding the use and management of money.

A recent work from two authors describes financial literacy as the ability to understand and use business financial statements to generate key financial ratios to evaluate and manage a business (Pearl and Eileen 2014). Despite the definition of financial literacy regarding personal financial issues be more developed and widely accepted, the definition of financial literacy is much more demanding not only for financial knowledge which must contemplate the capability to read and understand financial statement information but also in financial behavior with the habits concerned with the analysis of financial information and financial preferences or attitude which must be positively correlated with financial knowledge and behavior in the moment of taking daily management decisions.

Motivation theory of financial literacy suggests that measures of financial literacy should be related to financial behavior that is in the consumer's best interests Hilgert et al. (2003). In the context of financial literacy, this theory is related to how individuals manage their ability to understand financial products and services. To be well literate to a variety of financial products has a positive impact on business performance and success.

Strong performance and business sustainability are the key objectives in any business, including small medical enterprises (Madrid-Guijarro et al., 2007). Accordingly, firms and communities can reap benefits through the withdrawal of resources, creating employment opportunities and creating wealth (Ahmad and Abdul Ghani, 2013). However, small medical enterprises are often associated with sluggish growth, unsatisfactory sales, lack of competitiveness, and fragility.

Yusuf and Dansu (2013) stated that small medical enterprises are firms that cannot last long. Zakaria (2013) claimed that although the percentage of small medical enterprises is larger than that of large firms, the small medical enterprises sector shows no internal or external strengths. Therefore, measuring performance over time is very important, especially in a volatile business environment (Najmi et al., 2005). Given that small medical enterprise's firms constitute the majority of enterprises in a country, studying the performance of small medical enterprises is important.

Moreover, small medical firms are also the backbone of the economic development of a country through their contributions of taxes to Tanzania Revenue Authority, to reducing unemployment, and to export value. Furthermore, small medical firms form a sector where in the basics of entrepreneurship are practiced in producing entrepreneurs who can catalyze the economy to become, allowing the country to face a competitive world (Misoska et al., 2016). Therefore, it is very relevant to examine factors that affect the performance of small medical entrepreneurs. Among the factors that capture the attention of researchers is the aspect of financial literacy among small medical entrepreneurs.

Financial literacy skills represent an important organizational resource providing benefits to the organization. Gavigan (2010) highlighted that financial literacy skills link business

financial resources with financial products and services. Furthermore, financial literacy allows for sensible financial decision-making to attain financial wellbeing (OECD INFE, 2011). Adomako et al. (2016) suggested that the financial literacy possessed by entrepreneurs constitutes the firm's internal ability to access finance aimed at achieving superior growth. Sucuahi (2013) highlighted that entrepreneurs with a good financial foundation can be an important barometer of business success and growth in a competitive business environment.

When entrepreneurs lack financial literacy can lead to the failure of a business (Niederauer, 2010). As knowledge of financial management is an important aspect in ensuring the firm's financial stability (Talib et al., 2017), it is an essential instrument for small medical enterprise's success (Fernandes, 2015; Kimunduu et al., 2016). Ahmad Rafli et al. (2007) stated that financial literacy is a key support function that plays an important role in determining the life of an entity apart from its core functions (e.g., the offering of products or services). A lack of financial literacy usually has no significant impact at an early stage but turns out to have a decisive impact on the enterprise's growth and sustainability in the long run.

Past studies have shown empirical evidence that a relationship exists between financial literacy and business performance. Dahmen and Rodriguez (2014) found a link between financial literacy and SME performance in Florida, USA. They explained that firms with good financial literacy can identify and respond to climate change in business, economy, and finance. Thus, the decisions made will create innovative and effective solutions for business performance improvement and sustainability.

A study conducted on a soapstone business in Kenya found that the training related to financial literacy has a positive impact on businesses' financial performance (Salome and Memba, 2014). Additionally, other studies in Kenya (e.g., Chamwada, 2015; Cherugong, 2015; Kimunduu et al., 2016; Muraga and John, 2015; Njoroge, 2013; Sabana, 2014) have also shown that financial literacy has a relationship with SME performance.

A study in Portugal shows that a high level of financial literacy possessed by business owners will contribute to better small medical enterprises' performance. This study also identifies the need to strengthen financial education for SME entrepreneurs (Fernandes, 2015). As stated by Aribawa (2016), entrepreneurs with good financial literacy will be able to achieve business objectives, have a business development orientation, and survive in difficult economic conditions. Draxler et al. (2014) assumed that a small medical enterprises owner will be involved in complex and strategic financial decision-making to achieve business objectives and sustainability. In addition, the findings of studies conducted in Central Java, Indonesia are consistent with findings that show a significant relationship between financial literacy and business performance (Aribawa, 2016).

However, findings from previous studies remain inconsistent and vague. In fact, some studies show no association between financial literacy and business performance (Bruhn and Zia, 2011; Eresia-Eke and Raath, 2013; Menike, 2018). Thus, reassessing the impact of financial literacy on small medical enterprises performance is worthwhile in emerging countries like Tanzania. Therefore, this study will include these variables in the small medical firms's

performance model as control variables to estimate the causal effect of financial literacy on business performance.

Regarding the manager profile, age, gender, and education of entrepreneurs were found to influence small medical enterprises business performance (Essel, 2019). Essel (2019) explains that most entrepreneurs have low formal education and face constraints in terms of technical training; thus, the success of small medical enterprises is highly dependent on the age and education of the entrepreneur.

Accordingly, older managers achieve better business performance (Faye, 2017). Moreover, Shava and Rungani (2016) confirmed that male-led small medical enterprises outperform female-led small medical enterprises, while Ndlovu et al. (2018) showed that the influence of owner-manager experience and level of education has a strong relationship with business performance. As such, small medical firm owners can employ human capital, which gives them a competitive advantage. Stelate et al. (2018) found that manager experience plays an important role in a successful small medical firm. Experience helps managers to make the right decisions in business.

Furthermore, the experience gained is in line with the age range and educational background achieved. Although Cowling et al. (2017) suggested that the entrepreneurial experience does not have any impact on sales growth among small medical enterprises in the UK, little impact on employment growth was observed. They also found that level of education is insignificant in influencing business performance. Firm characteristics such as firm size, firm age, business sector, and type of ownership have also been examined as driving factors for firm performance in the past literature. Generally, larger firms perform better than smaller firms, due to the economy of scale (Sellers and Alampì-Sottini, 2018). Empirical evidence can be seen from Cowling et al. (2018) in their study of 3167 SMEs in the UK after the global financial crisis of 2008-2009. Consistently, the analysis of 723 wineries firms in Italy showed a positive effect of firm size on firm performance (Sellers and Alampì-Sottini, 2018). On the other hand, Zhang (2007) suggested that small firms surpassed larger firms among Chinese listed companies.

However, Radipere and Dhliwayo (2014) found no significant effect of firm size on business performance among SMEs in the retail industry. Regarding firm age, Mallingu et al. (2020) found that older firms outperformed younger firms in Kenya. Consistently, firm age has a positive relationship with employment growth but is insignificant regarding the growth of sales among 200 small-scale firms in Ghana (Essel et al., 2019).

Furthermore, Radipere and Dhliwayo (2014) suggested a positive link between firm age and business performance; however, further analysis revealed that the effect of firm age disappears after 20 years of operation. On the other hand, Cowling et al. (2018) found a negative association between firm age and business performance, as measured by sales growth in the UK. In other words, younger small medical enterprises performed better than older small medical enterprises especially those aged above 10 years.

The business sector in which small medical enterprises operate is another firm characteristic that has been examined in past studies on the effect on firm performance. For instance, Mallinguh et al (2020) found that the business sector has a substantial effect on financial performance among 146 medium-size firms in Kenya. Similar findings were reported by Essel et al. (2019) in their study of small-scale firm performance in Ghana.

Consistently, the business sector has strong predictive power for small medical enterprise performance in Pretoria, South Africa (Mothibi, 2015). Several studies have also assessed the type of ownership to anticipate firm performance. For instance, Obasan et al. (2016) found a strong positive association between insider ownership and firm performance in Nigeria. Consistently, Chu (2009) discovered that family ownership had a positive correlation with business performance. However, Mallinguh et al. (2020) and Essel et al. (2019) found no evidence of the effect of ownership on firm performance.

Summary and Conceptual Framework

The review of past studies has shown the influence of financial literacy on business performance, although the empirical evidence remains vague. Therefore, this study proposes a conceptual framework as shown in the figure below. Furthermore, the Resource Based View (RBV) is employed to support the conceptual framework. The internal organizational resources refer to the strengths and weaknesses that exist in a particular firm (Wernerfeldt, 1984). These include the assets, capabilities, information, and knowledge that are controlled (owned) by the firm in question (Barney, 1991; Wernerfeldt, 1984).

Therefore, the competitive advantage of a business comes from internal resources. In other words, any useful resources that can be obtained by a business would determine the competitive advantage of that firm over others. The RBV holds that firms competitive using the resources and capabilities available within them (Peteraf and Bergen, 2003).

Furthermore, Khotimah (2014) highlighted that the RBV sees firms as groups of resources and capabilities. In a broader view, the RBV focuses on the firm's ability to maintain a combination of resources that cannot be owned by or built in the same way by competitors. According to Adoma ko et al. (2016), financial literacy possessed by an entrepreneur would enhance the firm's internal ability to access financing for future growth. Therefore, financial literacy can be seen as an internal capacity of the firm to achieve a competitive advantage.

Based on the review of the past literature and the proposed conceptual framework, this study hypothesizes that: Financial literacy positively influence SME performance.

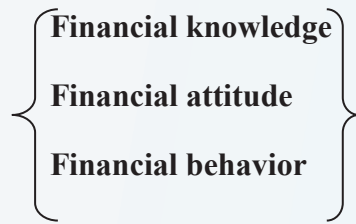
Conceptual framework

INDEPENDENT VARIABLE → DEPENDENT VARIABLE

Financial literacy → **Business Performance**

Financial literacy variables

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2.2 Empirical Literature Review

An empirical literature review on the assessment of financial literacy levels among entrepreneurs reveals key insight from existing research. Numerous studies underscore the critical role of financial literacy in entrepreneurial success, emphasizing its impact on decision making, risk management and overall business performance.

Some studies explore how demographic factors such as age, education and prior business experience can influence the financial literacy levels of entrepreneurs, providing insights into potential disparities. Empirical evidence suggests a positive correlation between higher levels of financial literacy among entrepreneurs and improved business performance including increased profitability and sustainability.

3.0 Research Methodology

The research employed quantitative techniques. Quantitative data was gathered through surveys assessing entrepreneur's financial knowledge, practices and decision-making abilities. This methodology aimed to provide a comprehensive assessment of financial literacy levels among entrepreneurs and offer nuanced insights for effective interventions.

3.1 Research design

A cross-sectional research designs was used in this research. It involved collecting data from participants at a single point in time. In this case the study aimed to assess the financial literacy levels of medical entrepreneurs at a specific moment.

The cross-sectional design allowed for the examination of relationship patterns or trends within a diverse sample of entrepreneurs. Surveys and interviews conducted during this period provided a snapshot of the financial literacy landscape among the target population. Additionally, a cross-sectional design is often more practical and feasible for studies aiming to understand the current state of a phenomenon such as financial literacy among a specific group.

Geographical coverage of Katavi region

Katavi region lies between latitudes 5° 15" to 7° 03" South of the equator and longitude 30° to 33° of East of Greenwich. It is boarded by Urambo district (Tabora) to the North, Sikonge district (Tabora) to the East, Chunya district (Mbeya) to the East, Nkansi district (Rukwa) to the South, Sumbawanga district to the South-East, Democratic republic of Congo to the West

(Separated by Lake Tanganyika) and Kigoma to the Northwest. It has a total area of 45,843 km².

Population size and growth

Based on population census reports of 2022, Katavi region has a population size of 1,152,957 people, population density of 25.15/km² and an average annual population change of 7.4% in a period of 10 years from (2012 -2022). 50% of the population (569,902) are male and 49.4% of the population (583,056) are females. 76.7% (883,999) of the population lives in the rural areas while 23.3% (268,959) of the population lives in urban areas. 50% of the population (576,514) have age group between 0-14 years, 47.7% (549,719) have age group of 15-64 years and 2.3% (26,725) have age group of 65 years and above (Tanzania National Bureau of Statistics).

Research sample, sample size and sampling techniques

3.2 Research sample

The research sample was obtained from the populations of medical entrepreneurs in Katavi Region. According to Statistical Business Report of 2014/2015, the population of entrepreneurs in Katavi is 1918. Tare Yamane formula was used to calculate the sample size.

3.2.1 Sample size

The sample size, $n = N / 1 + N (e^2)$

Where,

n - Is the required sample size

N - Is the population of entrepreneurs in Katavi region which is 1918.1.0

e -is margin error which is 0.05

So, the sample size that was used in this research is 200 medical entrepreneurs.

3.3 Sampling techniques

A random sampling technique was used to select the participants of the study.

Description randomly selected entrepreneurs from the entire population were selected. Rationale provides an unbiased representation of the population assuming truly random selection process

3.4 Data collection methods and tools

3.4.1 Data collection methods

Data collections methods refer to ways used to gather information from the participants. The following data collection method was used in this study.

3.4.2 Survey method was used to collect data

3.5 Data collection tools

Structured questionnaires covering key financial concepts and practices were used to assess the financial literacy levels in three financial variables which are financial knowledge, financial attitudes and financial behaviors.

Survey methods are widely used in the study of business, because business is a social phenomenon involving many performed transactions, and the data needed to make decisions come from humans. Accordingly, a questionnaire was developed containing four sections, labeled A, B, C, and D. The sections in the questionnaire are designed to obtain information on the constructs shown in Table 2.

Table 2: shows Parts of the questionnaire

Part	Details
A	Respondent's profile
B	Firm Profile
C	Financial literacy
D	Business performance

Parts A and B contain the respondents' and firm's profiles, respectively. The questions in this section are closed-ended questions with a predefined response format. Meanwhile, the development of questions in Parts C and D, regarding financial literacy and small medical enterprises business performance, respectively uses uni-dimensional methods. According to this method, the measured variables have been hypothesized by relating them to a single construct (Azizi, 2009). For Part C, this study opted to adopt and adjust the instruments developed by Sabana (2014) to represent financial literacy, as shown in Table 3.

The items and dimensions used by Sabana (2014) are more comprehensive than the measurements used in other studies, as they include the dimensions of insurance literacy and mathematical knowledge, which have rarely been considered in measuring financial literacy in other past studies. Performance measurement (Part D) is based on respondents' perceptions of the financial position of the small medical enterprises. The selection of this subjective measurement was made for the following reasons.

Firstly, obtaining financial data from small medical firms is difficult. For small medical enterprise owners/managers, financial data are a sensitive matter, and they tend to provide inaccurate financial data (Khan et al., 2014). Thus, the financial data provided by small medical entrepreneurs are likely inaccurate (Tippins and Sohi, 2003) and

unreliable (Kraus et al., 2006, in excerpts from Khan et al., 2014). Therefore, obtaining objective financial data from small medical entrepreneurs is impractical.

Secondly, based on Sapienza et al. (1988), objective financial data provided by small medical entrepreneurs often do not reflect the actual situation of small medical firms, as managers/owners tend to manipulate financial data to avoid individual or corporate taxes (Zulkifli and Perera, 2011).

Lastly, objective data may be misinterpreted. This condition can occur due to variations in total profits (Covin and Slevin, 1989) and can also lead to inconsistent objective measurement among small medical entrepreneurs in different industries (Dawe, 1999).

Thus, this study used the performance measurement used by Azizi (2009), as shown in Table 4. Measurement of financial performance from this subjective perspective has also been used by researchers such as Man Wing (2001) and Nakhata (2007) in their respective studies.

Table 3: shows Dimensions and item description of financial literacy

Dimension	Item description
Financial management	Our organization has cash books used to record business revenue and expenses
	Our organization separates any personal income/expenses from business income/expenses.
	The organization makes plans for the business and regularly monitors it.
	Our organization implements cash flow projections for businesses.
	Our organization provides financial statements for businesses (e.g., balance sheets and income statements).
	This organization uses the financial information in the financial statements to manage the business
	Our organization has a business plan.

Savings literacy	<p>Our organization knows the importance of saving for business expenses.</p> <p>Our organization has savings plans for business expenses.</p> <p>Our organization regularly saves for business expenses.</p> <p>Our organization will not easily issue organizational savings to finance unrelated business expenses.</p>
Debt literacy	<p>Debt is inevitable in a business.</p> <p>Loans in businesses are a risk.</p> <p>Members of the organization know the differences among a base rate, a nominal rate, and an interest rate.</p> <p>Members of the organization know what is meant by real benefits.</p> <p>Members of the organization know the difference between interest rates and compounded interest rates.</p> <p>Organization prefers business loans to be repaid on a flat basis rather than reducing loan balances.</p> <p>The organization obtained business credit reports over the past 12 months.</p> <p>The organization has too much debt and has problems or will probably have problems in repayment.</p> <p>This organization has the right amount of debt at present and does not have any problems paying it off.</p> <p>This organization has lower debt, and organizations are eligible for other loans.</p> <p>This organization does not know the status of the debts incurred</p>

Investment literacy	<p>This organization has an investment plan.</p> <p>The organization regularly monitors returns from investments.</p> <p>This organization diversifies their investments and change them depending on the return or revenue to be obtained.</p> <p>Investments with high returns may also have high risks.</p>
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Insurance literacy	<p>Business-related insurance is important.</p> <p>The business insurance policies in the market differ from each other.</p> <p>Terms related to business insurance policies must be understood by all members of the organization.</p> <p>This organization cannot afford to have a business insurance policy because it is too expensive.</p> <p>All members of the organization lack information on insurance products suitable for the business.</p>
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Source: Sabana, (2014)

Construct	Item
Business performance of a small medical enterprises	Cash flow
	Gross profit margin
	Net profit from the operation
	Sales growth
	Return on sales
	Return on investments
	Net profit margin ratio
	Return on shareholder equity

Ability to finance business from profit

Table 4: shows Description of small medical entrepreneur's business performance items

Source: Azizi (2009)

Sections C and D use a response format based on an itemized rating scale. This scale is an interval measurement scales that allows respondents to use a wide range of point numbers (Cavana et al., 2001). This study uses a 6-point Likert scale; thus, it does not provide a midpoint or neutral point. The use of 6-point Likert scale is supported by Tang et al. (1999), who argued that a 6- to 7-point scale allows respondents to express optimal levels of confidence in their extreme assessments. For financial literacy, the 6-point scale ranges from strongly disagree to strongly agree, while for performance it ranges from very low to very high. In total, this questionnaire contains 53 questions as summarized in table 5.

Table 5: Summarizes the number of items for each part

Part	Details	Number of items
A	Respondents' profile	8
B	Firm's profile	5
C	Financial literacy	31
D	Business performance	9
Total		53

Reliability Test

A research instrument is deemed reliable if it is capable of consistently providing the same result when the elements of the same entity are measured many times under the same conditions (Van Dalen, 1993). Similarly, Lim (2007) defines reliability as a degree of consistency of a research instrument measuring a variable studied. He also stated that the more consistent the measurement is, the higher is the reliability of the instrument. The instrument is considered to have 100% reliability if every time the instrument is managed, the same result is obtained.

According to Sekaran (2000), the alpha coefficient can provide the best indication to determine reliability. Hair et al. (2006) detailed the degree of alpha coefficient reliability as follows: 0.6 or above is average, over 0.7 is better than normal, more than 0.8 is good and 0.9 is very good. For studies related to social sciences, Sekaran (2003) stated that a value of 0.6 or above is often

applied for Cronbach's Alpha. If the items in the variable show a value less than 0.6, then those items should be removed from the questionnaire (Sekaran and Bougie, 2010).

Multiple regressions

Generally, correlation analysis tests the strength of a relationship between two continuous variables (Franzese and Luliano, 2019) using a coefficient correlation ranging from -1 to +1. The higher the value of the coefficient correlation (close to +1 or -1), the stronger the relationship between these two continuous variables, and vice versa. However, correlation analysis cannot assess whether one variable can explain the other variables. Therefore, linear regression can be employed to examine the influence of independent variables on dependent variables.

The following is the basic econometric equation to model the relationship between the independent variable (X) and dependent variable (Y). Indeed, linear regression aims to estimate the model parameters α and β that fit with the joint distribution of X and Y (Franzese and Luliano, 2019). $Y = \alpha + \beta X + \varepsilon$ (1) In this study, small medical enterprises business performance and financial literacy were treated as the dependent variable and independent variable, respectively, while manager profile and small medical entrepreneur specific characteristics were treated as control variables. Control variables were added to the model to anticipate the causal effect of financial literacy on small medical enterprises performance.

Accordingly, multiple linear regression is employed, and the above equation can be rewritten as follows:

$$\text{SMEPer} = \alpha + \beta_1 \text{FinLit} + \beta_t \text{Control} + \varepsilon \quad (2)$$

Where, SMEPer and FinLit represent Small medical enterprise performance and financial literacy, respectively. CONTROL is the control variables, which consist of manager profiles (i.e., gender (GEN), age (AGE), experience (EXP), an education level (EDU)) and SME-specific characteristics (i.e., sector in which SMEs operate (SEC), type of ownership (OWN), business age (BIZAGE), and firm size (SIZE)). Meanwhile, α is the intercept, β measures the regression coefficient and ε represents the error term. The summary of measurement for each variable is presented in table 6.

4.0 Findings and Discussion

4.1 Respondent's profile

The majority of respondents were male (57.5%), and the rest were female (42.5%). The age distribution shows that the fewest respondents were in the age group under 25 (6.5%), and the majority of respondents were in the age range of 41–45 years (28%). Respondents aged between 46–50 represented 19% of the sample, the age range of 31–35 years represented 15.5%, and the age range of 36–40 years represented 15%. For the rest, 7.5% of respondents were aged between 26–30 and only 8.5% were more than 50 years old.

Meanwhile, in terms of educational level, secondary school education showed the highest percentage (45%), followed by bachelor's degree (23.5%) and a diploma (18.5%). The respondents with primary school education represented 8% of the sample, 2.5% at the master's degree level, and 1.5% at the doctoral level. Finally, 1% indicated other educational level. Most of the respondents (67.5%) in this study were married. The other marital statuses, namely single and widowed/divorced, represented 18.5% and 14%, respectively.

Furthermore, in terms of business experience and the period of managing the existing business, the majority (58%) of the respondents had business-related experience before opening their current business, while the rest (42%) did not. Meanwhile, a small number of respondents (2%) had been in business for more than 25 years. Respondents who had managed the business for 5–10 years were the majority at 41.5%, while 26% had managed the business for 11–15 years, and 20% for less than 5 years. The remaining 8% of respondents have managed the business for 16–20 years, and 2.5% of respondents have managed the business for 21–25 years.

4.2 Firm's profile

Table shows the distribution of SME demographic profiles. The majority of SME firms consisted of SME firms from Mpanda (43.5%), followed by Mlele (32.5%) and Mpimbwe (24%). Based on the legal status, 46% of SMEs were not officially registered (unofficial ownership), sole proprietorship (41.5%), partnership (11.5%) and the limited liability partnership represented approximately 1%. The feedback obtained in terms of the sector showed that the majority were from the dispensaries and pharmacy sectors, at 49% and 39.5%, respectively, while the rest were from the laboratory and ophthalmology sector (5%), the polyclinic (3.5%) and the dental sector (3%). In terms of the duration of doing business, most SME firms (35%) had been in business for 5-10 years, while 31% were aged 11-15 years and 15.5% were less than 5 years old. The remaining SMEs had been in business for 16-20 years (8.5%), 21-25 years (5.5%), or more than 25 years (4.5%). The distribution of the number of employees owned by SMEs shows most SMEs (59%) had less than 10 employees, while the fewest (3%) had 41-50 employees

Table 6: showing Summary of measurement of variables

Variable	Description	Measurement
GEN	Gender	1=male, 0=female
AGE	Managers' age	Ordinal: (1) < 25 years old; (2) 26-30 years old; (3) 31-35 years old; (4) 36-40 years old; (5) 41- 45 years old; (6) 46-50 years old; (7) > 50 years old
EXP	Managers' experience – measures whether managers possessed any experience before starting their business	1=experience, 0=no experience
EDU	Education level	Ordinal: (1) primary school; (2) secondary school; (3) diploma; (4) bachelor's degree; (5) master's degree, (6) doctorate
SEC	Sector in which SMEs operate	1=service, 0=non-service
OWN	Type of ownership	1= sole proprietor, 0 = others
BIZAGE	Business age – number of years since SMEs were incorporated	Ordinal: (1) < 5 years; (2) 5-10 years; (3) 11-15 years; (4) 16-20 years; (5) 21-25 years; (6) > 25 years
SIZE	Firm size	Numbers of employees
FINLIT	Financial literacy	6-point Likert scale
SMEPer	SME performance	6-point Likert scale

Table 7: Summarizes the demographics of respondents

	Frequency	Percentage
Gender		
Male	115	57.5
Female	85	42.5
Age		
< 25 Years	13	6.5
26 – 30 years	15	7.5
31 – 35 years	31	15.5
36 – 40 years	30	15
41 – 45 years	56	28
46 – 50 years	38	19
>50 years	17	8.5
Education		
Primary school	16	8
Secondary school	90	45
Diploma	37	18.5
Bachelor's degree	47	23.5
Master's degree	5	2.5
Doctorate	3	1.5
Others	2	1
Marital status		
Single	37	18.5
Married	135	67.5
Widowed/Divorced	28.1	14

Business experience		
Yes	116	58
No	84	42
Period of managing/owning business		
< 5 years		
5–10 years	40	20
11–15 years	83	41.5
16–20 years	52	26
21–25 years	16	8
5 > 25 years	5	2.5
	4	2

Table 8: summarizing Firm's profile

	Frequency	Percentage
Area		
Mpanda	87	43.5
Mlele	65	32.5
Mpimbwe	48	24
Legal status		
Sole proprietorship	83	41.5
Partnership	23	11.5
Limited liability partnership	2	1
Un-official ownership	92	46

Sector		
Dispensaries	98	49
Pharmacies	79	39.5
Laboratory	6	3
Ophthalmology	10	5
Dental	7	3.5
Duration of business		
< 5 years	31	15.5
5 – 10 years	70	35
11 – 15 years	62	31
16 - 20	17	8.5
21 - 25	11	5.5
>25 years	9	4.5
Number of employees		
<10	118	59
10 - 20	30	15
21 – 30	10	5
31 – 40	7	3.5
41 – 50	6	3
>50	29	14.5

4.3 Reliability test results

Table 9 shows that the Cronbach's Alpha coefficients for financial literacy and SME performance are above 0.6, being 0.885 and 0.930, respectively. Therefore, items on financial literacy and SME performance are reliable (Sekaran and Bougie, 2010). Thus, all items in both variables are retained. Table 11 shows the mean value for each element of financial literacy, overall mean value for financial literacy and mean value for SME performance. All elements of financial literacy have scored a mean value above 3.67, except for debt literacy as shown in table 10. Overall, the mean value for financial literacy was relatively high at 4.26. This implies

high financial knowledge among SME owners/managers. Accordingly, SMEs' performance was also found to be at a high level with a mean value of 4.25. The interpretation of the mean value is based on Mukminin and Hidayat (2013), as shown in table 11.

Table 9: Showing Results of reliability test

Variable	Number of items	Cronbach's Alpha
Financial literacy	31	0.885
Performance	9	0.930

Table 10: Results of descriptive analysis for financial literacy and SME performance

	Mean
Financial Management	4.68
Saving literacy	4.68
Debt literacy	3.93
Investment literacy	4.33
Insurance literacy	3.99
Financial literacy	4.26
SME performance	4.25

Table 11: showing Mean score interpretation

Mean Score	Interpretation
1.00 - 2.33	Low
2.34 – 3.66	Medium
3.67 – 5.00	High

Source: Mukminin & Hidayat (2013)

4.4 Multiple regression analysis results

The Breusch Pagan and Koenker tests were conducted to detect heteroscedasticity issues, as shown in Table 12. The statistical values of the Breusch Pagan and Koenker tests (LM = 13.143, $p = 0.156$; LM = 15.226, $p = 0.085$) indicate that the null hypotheses cannot be rejected,

thus indicating the absence of heteroscedasticity issues. Table 12 also shows the results from the multiple regression analysis. The value of $R^2 = 0.177$ suggests that 17.7% of SME performance can be explained by financial literacy, manager profile (gender, experience, age, and education), and SME-specific characteristics (sector, ownership, business age, and size).

The remaining 82.3% is explained by other factors, which were not examined in this study. The low R^2 value also implies the low strength of the linear relationship between the independent variable and the dependent variable. However, a low but significant R^2 value could still draw important conclusions related to the influence of independent variable on the dependent variable (Morrison, 1973; Bonnie et al., 2013). Furthermore, Bonnie et al. (2013) also argued that the value of R^2 could be low in certain areas, such as in studies related to predicting human behavior. The output also indicates F values=4.536 and $p=0.000<0.05$, which suggests that the regression model can be applied to SME performance estimates.

As expected, the regression results showed that financial literacy has a positive and significant influence on the performance of SMEs at $\alpha = 1\%$ with $p = 0.000$. This finding supports the proposed hypothesis that financial literacy positively influences the performance of SMEs. In other words, the higher an SME entrepreneur's level of financial literacy is, the better the SME's performance will be. These results are consistent with the findings of Aribawa (2016); Chamwada (2015); Cherugong (2015); Dahmen and Rodriguez (2014); Fernandes (2015), Kimunduu et al. (2016); Muraga and John (2015); Njoroge (2013); Sabana (2015); and Salome and Memba (2014).

A higher level of financial literacy means SME entrepreneurs possess the capability to manage their finances, including debt management, savings and investment, as well as risk management through the utilization of insurance. Indeed, the lack of financial literacy among SME borrowers has been highlighted as one of the key challenges among SMEs in African countries (AEM-METI Economic Cooperation Committee, 2021). Financial literacy allows SME entrepreneurs to be informed regarding the available sources of financing and to subsequently utilize diverse strategies in seeking business financing.

In addition, this study also shows that experienced SMEs managers perform better than less experienced managers, as shown by the positive sign of the parameter for EXP at $\alpha = 0.10$ with $p = 0.085$. This finding is consistent with those of Ndlovu et al. (2018) and Stelate et al. (2018). This result is unsurprising, as it is intuitive to assume that a more experienced manager may possess greater skills in managing a business, from financial matters to human resources management.

Furthermore, the business sectors in which SMEs are involved also significantly affect the performance of SMEs at $\alpha = 0.10$ with $p = 0.093$. On top of this, the educational background of managers has a significant and negative impact on the performance of SMEs at $\alpha = 0.10$ with $p = 0.055$. Specifically, managers with non-tertiary education show better performance than Financial Literacy and Financial Performance 87 SEAM 15, 1 88 those with tertiary education. In fact, previous studies such as those of Ndlovu et al. (2018) and Essel (2019) also found evidence on the influence of education level on SME performance. Other factors such

as gender, age, ownership, business age, and firm size had no significant influence on SME performance

4.5 Managerial Implications in Katavi Region

The results of this study are consistent with the call from the Strategic Action Plan for SME Development 2016-2025 under Strategic Goal (B) to strengthen the financial literacy of SMEs. It is crucial to ensure SMEs possess high awareness of information regarding financial resources and the availability of supporting programs. Under the same strategic goal, SMEs are encouraged to use various sources of financing to minimize financial risk.

Furthermore, the lack of financial literacy and/or resources to manage financial matters were among the top 10 challenges faced by financial institutions in providing financing to SMEs in Katavi region, Tanzania.

Therefore, it is timely for The Association of medical entrepreneurs to energize the formulation of strategies and implementations to improve the level of financial literacy of SMEs. Strategic collaboration can be established among SME bodies and SME financial institutions among member regions to foster integrated financial literacy programs among SMEs.

4.6 Theoretical Implications

This study contributes to the growing body of studies on financial literacy, particularly in the SME context. In particular, this study has shown the importance of financial literacy in driving SME performance in Tanzania. In other words, entrepreneurs with a good level of financial literacy contribute to a better SME performance.

According to Gavigan (2010), financial literacy is the ability to adequately oversee business financial resources and link them effectively to financial products and services. Furthermore, financial literacy promotes the understanding and decision-making towards better financial management. Therefore, financial literacy is needed by entrepreneurs to conduct day-to-day business operations to gain a competitive advantage and subsequently generate positive and profitable business performance.

5.1 Conclusion

This study was conducted to obtain empirical evidence regarding the influence of financial literacy on the performance of SMEs. The analysis was conducted based on 200 responses from respondents covering SMEs from the districts of Mpanda, Mlele and Mpimbwe. The regression results found that financial literacy has a positive and significant influence on the performance of SMEs after controlling for managers' profiles and SME-specific characteristics.

Furthermore, control variables such as managers' experience and education level, as well as the business sector in which SMEs operate, significantly influenced the performance of

SMEs. As these variables were used to control the causal-effect of financial literacy on SME performance, their influence is not discussed further. The findings of this study have shown

Outcome: SMEPer

Constant	2.592	0.344		8.036	0.000
FinLit	0.370	0.085	0.310	4.329	0.000*
GEN	-0.107	0.083	-0.090	-1.285	0.200
AGE	-0.003	0.026	0.007	0.101	-0.919
EXP	0.137	0.079	0.115	1.734	0.085**
SEC	-0.154	0.091	-0.131	-1.686	0.093**
OWN	-0.069	0.091	-0.058	-0.760	0.448
BIZAGE	-0.047	0.036	-0.101	-1.321	0.188
SIZE	0.002	0.002	0.085	1.089	0.277
EDU	-0.071	0.037	-0.139	-1.928	0.055**
R ²	0.177				
Adjusted R ²	0.134				
F	4.536	p = 0.000			
Breusch Pagan	LM=13.143	p = 0.156			
Koenker	LM=15.226	p = 0.085			

that in the environment of Katavi region, financial literacy among entrepreneurs can improve the performance of SMEs.

In addition, the findings of this study can add value to previous studies whilst further highlighting the existence of a significant influence of financial literacy on SME performance. SME managers, owners, and entrepreneurs must make various decisions in running their businesses, and some of the most challenging decisions are related to business finances.

Managers, owners, and entrepreneurs with better financial literacy skills will better understand business-related financial concepts such as matters related to debt, investment, savings, and financial management, among others. Accurate financial decisions can help SMEs reduce administrative costs, conduct cost-benefit analysis, minimize staff turnover, engage in profitable investment schemes, and reduce internal conflicts, among other advantages. Decision-making in such situations will be rational based on the financial information obtained. Thus, SMEs can optimize sales and maximize profits, resulting in better performance.

Table 12: Showing Regression analysis results

*Significance at $\alpha = 0.01$; **significance at $\alpha = 0.10$

Undeniably, financial literacy is important for managers and owners of SMEs. In light of the importance of financial literacy among entrepreneurs, government agencies such as SME Corp need to further accelerate their efforts to educate entrepreneurs, especially young entrepreneurs, to ensure that they possess an adequate level of financial literacy before starting their business. Although various awareness and training programs exist, their approaches might need to be improved so as to better foster financial literacy.

This study found that literacy on debt management had the lowest mean value. Therefore, entrepreneurs need to learn effective debt management strategies in order to generate profit. To this end, guidance and monitoring in terms of financial management in the first five years of business would greatly support entrepreneurs in learning the complexities of finance in business.

One feasible strategy is that of collaboration between SME Corp or similar institutions and a higher learning institution to providing formal education related to financial literacy. Collaboration with other agencies can also be undertaken to implement non-formal entrepreneurial financial education for young people who lack the opportunity to obtain a formal education.

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The Impact of Logistics Operational Costs on Information System Performance: A Case Study of the Medical Store Department in Moshi, Tanzania

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Abstract

In an increasingly interconnected world, effective logistics management is vital for the performance of information systems, especially in the healthcare sector. This study investigates the impact of logistics operational costs on the performance of health information systems within Tanzania's Medical Store Department (MSD). Employing a mixed-methods approach, data were collected from 90 respondents through structured questionnaires and interviews. The findings indicate a significant negative relationship between high logistics costs particularly transportation and storage expenses and the performance of information systems. Statistical analysis revealed a strong correlation, with logistics operational costs serving as critical determinants of system efficiency ($\beta = 0.65$, $p < 0.000$). Qualitative insights highlighted challenges related to transportation delays and inadequate warehousing technologies, reinforcing the quantitative results. The study underscores the urgent need for effective logistics management practices to enhance system performance, ultimately improving healthcare delivery. Recommendations include investing in technology-driven logistics solutions and implementing cost-saving measures to optimize resource allocation. Addressing

these logistics challenges is essential for ensuring timely access to medical supplies, thereby enhancing patient care and health outcomes in Tanzania.

Keywords: *Logistics Management, Operational Costs, Health Information Systems.*

1.0 Introduction

In an increasingly interconnected world, effective logistics management is essential for the performance of information systems across various sectors, including healthcare. Logistics operational costs, which encompass expenses related to transportation, warehousing, and inventory management, directly influence the efficiency of information systems that support supply chain operations. Globally, organizations are recognizing the importance of streamlining logistics to enhance system performance and ensure timely access to critical supplies. A study by Jüttner et al. (2021) found that optimized logistics processes lead to reduced operational costs and improved responsiveness, highlighting the necessity of integrating logistics strategies with information systems for enhanced performance.

In the African context, the challenges of logistics operational costs are particularly pronounced due to infrastructural deficits and varying regulatory frameworks. Research indicates that high logistics costs can hinder the performance of health information systems, impacting the delivery of essential medical supplies and services (Asong & Kumi, 2022). For instance, a study in Ghana revealed that inefficiencies in logistics contribute to significant delays in supply chain operations, affecting healthcare service delivery (Kumi et al., 2023). This underscores the critical need for effective logistics management to support the performance of health information systems across the continent, especially in the context of public health.

Tanzania, specifically, faces similar challenges in logistics operational costs affecting its healthcare information systems. The Medical Store Department (MSD) plays a crucial role in managing the supply of medical products, and inefficiencies within this department can lead to disruptions in healthcare delivery. Recent research highlights that high logistics costs, exacerbated by poor infrastructure and inadequate technology, adversely affect the performance of health information systems in Tanzania (Mhando et al., 2022). Addressing these issues is vital for enhancing the efficiency of the MSD, ensuring that healthcare providers can access necessary medical supplies in a timely manner, ultimately improving patient care and health outcomes in the region.

2.0 Literature Review

2.2 Theoretical Framework

2.2.1 Transaction Cost Economics (TCE)

Transaction Cost Economics (TCE), founded by Ronald Coase in 1937 and later developed by Oliver Williamson in the 1970s, provides a valuable framework for understanding the influence of logistics operational costs on the performance of information systems. TCE posits that firms

seek to minimize the costs associated with transactions—such as searching for suppliers, negotiating contracts, and enforcing agreements—by optimizing their supply chain operations. This theory is particularly relevant in the context of logistics, where operational costs can significantly impact the efficiency and effectiveness of information systems used for inventory and order management.

In the medical supply sector, understanding and managing logistics operational costs is crucial for maintaining efficient information systems. High transaction costs can lead to delays and inefficiencies in the procurement and distribution processes, ultimately affecting the performance of information systems that rely on accurate and timely data. Recent studies, such as those by Li et al. (2021) and Zhao et al. (2022), highlight the importance of minimizing transaction costs in supply chain management to enhance the performance of information systems, particularly in healthcare settings. By applying TCE, organizations can identify areas where logistics costs can be reduced, thereby improving the overall functionality and responsiveness of their information systems.

2.3 Empirical Literatures

Omachonu et al. (2019) assessed the impact of logistics costs on the effectiveness of information systems in the pharmaceutical supply chain. Utilizing a mixed-methods approach, the researchers employed a descriptive research design with a population of 200 employees from various pharmaceutical companies in Uganda. A sample of 100 respondents was selected using stratified sampling. Data were collected through structured questionnaires and interviews. Statistical analysis was conducted using SPSS. The findings indicated that high logistics costs significantly hinder the performance of information systems, leading to delays and inaccuracies in inventory management. The study concluded that reducing logistics operational costs could enhance system performance, and recommended implementing cost-saving measures in logistics to improve supply chain efficiency (Omachonu et al., 2019).

Muthoni and Wainaina (2020) explored the relationship between logistics operational costs and the performance of information systems in the healthcare sector in Kenya. The study adopted a quantitative research approach, using a cross-sectional design with a population of 150 healthcare providers. A sample of 120 respondents was selected via simple random sampling. Data were collected through structured questionnaires and analyzed using regression analysis. The findings revealed that high logistics operational costs negatively impacted the performance of information systems, resulting in suboptimal service delivery. The researchers concluded that managing logistics costs is crucial for enhancing system performance and recommended that healthcare facilities invest in efficient logistics practices (Muthoni & Wainaina, 2020).

Abubakar et al. (2021) investigated the influence of logistics costs on information systems performance within the Nigerian healthcare supply chain. Using a qualitative research approach, the researchers conducted in-depth interviews with 30 logistics managers from various healthcare organizations. The data were analyzed thematically. The findings

highlighted that logistics operational costs, particularly transportation and warehousing expenses, significantly affected the accuracy and timeliness of information systems. The study concluded that effective cost management strategies could lead to improved system performance and recommended that organizations adopt technology-driven logistics solutions to enhance efficiency (Abubakar et al., 2021).

Ndung'u and Gikonyo (2022) examined the impact of logistics operational costs on information systems performance in the context of medical supply chains in Tanzania. Employing a quantitative research design, the researchers targeted a population of 250 medical professionals, selecting a sample of 150 respondents through stratified sampling. Data were collected via structured questionnaires and analyzed using descriptive and inferential statistics. The results indicated a significant negative relationship between high logistics costs and the performance of information systems, emphasizing the need for better logistics management practices. The study concluded that reducing logistics costs could enhance the overall effectiveness of information systems in the medical sector and recommended that stakeholders prioritize logistics efficiency (Ndung'u & Gikonyo, 2022).

3.0 Material and Methods

This study employed a cross-sectional research design, characterized by the collection of data at a single point in time, which is particularly efficient for social sciences (Bryman, 2004; Malhotra, 2010). A mixed-methods approach was utilized, integrating both quantitative and qualitative research methods. The quantitative aspect involved numerical data collection for statistical analysis, while the qualitative component allowed for in-depth insights through respondent narratives (Bouma-Prediger, 2010). This combination enabled the researcher to achieve a comprehensive understanding of the research objectives by correlating data from various sources.

The target population for this study comprised 124 staff members from the Moshi Medical Stores Department (MSD). A sample size of 90 respondents was determined using Yamane's formula, ensuring a representative selection (Yamane, 1967). The distribution of the sample across different departments, including internal audit, accounting, and logistics, is detailed in Table 1, reflecting a strategic allocation to gather diverse perspectives (Churchill & Peter, 1995). Probability sampling through simple random methods minimized bias, while purposive sampling allowed for targeted insights from specific departments relevant to the study objectives (Kothari et al., 2014).

Data were collected using both primary and secondary methods. Primary data were gathered through structured questionnaires and face-to-face interviews, ensuring diverse data points and participant engagement (John, 2016). The questionnaire utilized a Likert scale for quantitative assessment, while interviews provided qualitative depth. Pre-testing of instruments was conducted to enhance clarity and relevance (Neunert et al., 2011; Baxter & Jack, 2008). Data analysis was performed using SPSS version 25, applying descriptive statistics and regression

analysis to evaluate the influence of logistics information systems on organizational performance. The regression model facilitated a deeper understanding of relationships between variables, further enhancing the study's validity and reliability (Anderson et al., 2016).

4.0 Findings

Table 1: Demographic Features of Respondents

Demographic Feature	Category	Frequency	Percentage (%)
Gender	Male	50	58.8
	Female	35	41.2
Age Group	18-25	10	11.8
	26-35	30	35.3
	36-45	25	29.4
	46 and above	20	23.5
Education Level	High School	15	17.6
	Diploma	30	35.3
	Bachelor's Degree	25	29.4
	Postgraduate	15	17.6
Department	Internal Audit	5	5.9
	Accounting	6	7.1
	Procurement	5	5.9
	Medical Store	20	23.5
	Logistics	10	11.8
	Human Resources	5	5.9
	ICT	13	15.3
	Users	50	58.8
Total Respondents		85	100

4.1 The impact of logistics operational costs on information system performance

Table 2: the impact of logistics operational costs on information system performance

Statement No.	Agree (%)	Neutral (%)	Disagree (%)
Logistics operational costs significantly impact the performance of the information system.	65 (76.5%)	12 (14.1%)	8 (9.4%)
Higher transport costs negatively affect the efficiency of the information system.	60 (70.6%)	10 (11.8%)	15 (17.6%)
Storage and warehousing costs contribute to the overall performance of the information system.	70 (82.4%)	8 (9.4%)	7 (8.2%)
Proper inventory management costs lead to improved information system performance.	75 (88.2%)	6 (7.1%)	4 (4.7%)
Employee training in logistics has a direct effect on the effectiveness of the information system.	68 (80%)	10 (11.8%)	7 (8.2%)
The current logistics system is efficient in managing operational costs to support the information system.	50 (58.8%)	20 (23.5%)	15 (17.6%)
Regular monitoring and evaluation of logistics costs can improve the performance of the information system.	55 (64.7%)	15 (17.6%)	15 (17.6%)

Table 3: Regression Analysis Results

Dependent Variable: Information System Performance

Predictor Variable	Coefficient (β)	Standard Error	t-Value	p-Value
Constant	1.98	0.47	4.21	0.000
Logistics Operational Costs	0.65	0.11	5.91	0.000
Transport Costs	0.52	0.09	5.78	0.000
Storage Costs	0.38	0.10	3.80	0.001
Inventory Management Costs	0.28	0.08	3.50	0.002
Employee Training Costs	0.32	0.09	3.56	0.001
R-squared	0.72			
Adjusted R-squared	0.70			
F-statistic	50.13			0.000

To complement the quantitative data from the questionnaire, qualitative insights from interviews were also gathered to provide a deeper understanding of the impact of logistics operational costs on information system performance. Respondents emphasized the challenges associated with high logistics costs and their direct effect on system efficiency. One logistics officer remarked, *“Our transportation costs have skyrocketed due to fuel prices, and this affects how quickly we can update inventory in the system. Delays in transporting goods cause data entry bottlenecks, which ultimately slows down the performance of the information system.”* This observation highlights the connection between transportation costs and system delays, as logistics bottlenecks impede real-time data processing.

Another respondent, a senior manager, mentioned that *“The storage costs for medical supplies are a constant concern. Without proper funding, we can't afford the advanced warehousing technology needed to sync with our information system efficiently. The manual processes we use because of cost constraints lead to frequent system downtimes and errors.”* This comment underscores the financial strain on warehousing operations and its negative impact on the accuracy and speed of the information system. Both respondents pointed out that logistics costs, particularly in transportation and storage, are key barriers to optimizing information system performance, reinforcing the need for better resource allocation to improve system efficiency.

5.0 Discussion

The findings from both the quantitative and qualitative data indicate that logistics operational costs have a significant impact on the performance of the information system at the Medical Store Department in Moshi. From the survey data, the majority of respondents (76.5%) agreed that logistics costs affect the performance of the information system. High transportation costs

were particularly identified as a major barrier, with 70.6% of respondents indicating that higher transport expenses negatively affect system efficiency. The regression analysis further supports this, showing a strong positive relationship between logistics operational costs and information system performance ($\beta = 0.65$, $p < 0.000$). Transportation costs, in particular, emerged as a critical factor, with a significant coefficient ($\beta = 0.52$, $p < 0.000$). These results highlight that logistics costs, especially transportation, play a pivotal role in determining the functionality of the information system.

In addition to transport costs, the qualitative data provided further insights into the effects of storage and warehousing expenses. Respondents noted that financial constraints in warehousing operations directly impact the system's ability to function efficiently. One manager highlighted the reliance on manual processes due to cost constraints, leading to frequent system downtimes and errors. This is corroborated by the quantitative results, where 82.4% of respondents agreed that storage costs contribute to the overall performance of the system, and the regression analysis showed a significant relationship between storage costs and system performance ($\beta = 0.38$, $p < 0.001$). Proper inventory management costs were also identified as a crucial determinant of system efficiency, with 88.2% of respondents agreeing that better inventory management leads to improved system performance.

Empirical studies align with these findings. For example, a study by Tijan et al. (2020) emphasized that logistics costs, including transport and warehousing, are crucial for the operational efficiency of supply chain information systems. Their research found that inadequate logistics funding can lead to delays, inefficiencies, and errors in information system updates. Similarly, Gunasekaran et al. (2017) highlighted the direct relationship between logistics costs and information system performance in health sectors, where insufficient logistical resources can impede real-time data processing, ultimately affecting decision-making. These studies reinforce the assertion that managing logistics costs effectively is essential for the optimization of information system performance, particularly in resource-constrained environments like the Medical Store Department.

6.0 Conclusion

The study has demonstrated that logistics operational costs significantly affect the performance of the information system at the Medical Store Department in Moshi, Tanzania. Key logistics components such as transportation, storage, and inventory management directly influence system efficiency. The regression analysis confirmed that higher logistics costs, particularly in transport and storage, contribute to system inefficiencies. Additionally, the qualitative interviews revealed that cost constraints in logistics lead to frequent delays, manual processes, and system downtimes, which further undermine the performance of the information system.

Furthermore, the findings emphasized the importance of proper inventory management and employee training in logistics, as both positively influence system effectiveness. Inadequate investment in logistics, particularly in transportation and warehousing technologies, was found

to hinder real-time data processing, which is essential for optimal system performance. These insights underscore the critical role logistics costs play in ensuring the smooth operation of information systems, especially in health-related sectors where timely and accurate information is vital for decision-making and resource management.

7.0 Recommendations

To improve the performance of the information system, it is recommended that the Medical Store Department allocates additional resources to cover logistics operational costs, particularly in transportation and warehousing. Investing in modern warehousing technologies, such as automated inventory management systems, could significantly reduce manual processes and errors, leading to better system performance. Additionally, revising transport strategies to optimize routes and reduce fuel consumption could help lower transportation costs and improve system efficiency.

Moreover, regular training programs for employees involved in logistics and system management should be implemented to enhance their skills and understanding of how logistics costs impact system performance. This will not only improve the operational efficiency of the logistics team but also ensure that the information system is utilized effectively. Finally, periodic monitoring and evaluation of logistics costs should be conducted to identify potential areas for cost reduction and system improvement, ensuring the sustainability of the information system's performance.

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Integrating Big Data Analytics into Monitoring, Evaluation, and Learning in Tanzania: A Decision-Making Framework

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Abstract

The Monitoring, Evaluation, and Learning (MEL) processes have a critical role in development programs to determine the improvements brought by the interventions in terms of quantity and quality. Most MEL practices in Tanzania experience some challenges due to scarcity of data, scattered databases and lack of proper statistical analysis. This paper outlines a decision-

making framework that incorporates BDA into MEL processes in order to augment decision-making, programme impact, and learning. Using the provided mobile data, satellite imagery, and social media data, the framework develops an integrated MEL system. This paper examines the general benefits, possible difficulties, and consequences of applying BDA in relation to MEL in Tanzania.

Keywords: *Big Data Analytics, Decision Making Framework*

1. Introduction

Monitoring, Evaluation and Learning (MEL) is crucial in evaluating the successful delivery of development interventions, the accomplishment of the intended goals and objectives and using them as a basis for improvement and innovation. It entails planning activities, implementing them and continuously monitoring and reviewing the activities as well as the outcomes. Therefore, with an increased level of complexity and reliance on data for the development programs, the adoption and integration of Big Data Analytics (BDA) provide the right avenue for the improvement of MEL. By using BDA, organizations are able to examine large and disparate sets of data thus improving the understanding and direction of programs. When applied, BDA can therefore assist organizations in tracking progress, assessing outcomes, and modifying strategy based on performance data, making it easier to improve decisions and better results (Mleke et al., 2020).

1.1 Background

Global organizations have experienced unprecedented changes in the last decade brought about by new technologies characteristic of the Fourth Industrial Revolution. This period is characterized by the huge generation and processing of data by smart gadgets and complex analytical tools known as Big Data. This flood of data poses great opportunities for organizations to improve their operational effectiveness, decision-making, and competitive position when such data are properly utilized (Chatterjee et al., 2022). For instance, the worldwide data creation hit 79 zettabytes in 2021, with forecasts predicting that it may grow as high as 181 zettabytes in 2025, the impressive figures prove the immense method by which data is being created and the scope of opportunities the organizations from different industries may have (IDC, 2022).

Big Data Analytics (BDA) is now required for the higher efficiency of using this data stream for MEL purposes in organizations. Because of the ability to integrate, analyze, and interpret data flows in real time, leaders can see performance indicators and use them to make improvements. Research has indicated that companies incorporating BDA to obtain real-time data supposedly achieve a 15% enhancement in process effectiveness and cut down the rendering of decisions by 20%, all of which signifies its role in improving MEL practices (Guo et al., 2023). Notably, MEL has benefited from BDA more than ever, especially in the following ways: prediction and outcome modelling enable organizations to anticipate future developments and evaluate the probability of different outcomes, given historical data – enabling more efficient intervention (Akter et al., 2021).

Some challenges affecting traditional MEL in Tanzania include; inadequate data, limited analytical capacity, and delays in using evaluation findings for programme improvement. For instance, a study conducted by the Tanzania National Bureau of Statistics among civil servants recently revealed that 68% of the public institutions in Tanzania lacked sufficient data more specifically in sectors of health, education and agriculture among others (NBS 2022). This scarcity limits the effectiveness of tracking multifaceted social and economic results; this reduces the efficiency of program evaluation as well as the optimal use of resources. Lastly, the low capacity to perform higher-level statistical analysis in MEL practices means that

organizations are unable to make robust assessments of the overall effects of the projects and thus they cannot make the right decisions as required (UN, 2022).

The pre-implementation challenges are as follows: To overcome these challenges, the integration of BDA in MEL brings revolutionary opportunities. BDA builds on MEL by making data more accessible, enabling current analysis and helping organizations become more proficient at forecasting trends. For instance, in the course of a disease outbreak, decision support systems may predict the pattern and advise on its likely spread and any other resource that may help in managing it. Likewise, BDA in agriculture can check the crop yields on the farmland and the weather conditions to help reduce food security threats in Tanzania. The analysis done by Guo et al. (2023) found that organizations that adopt BDA for predictive modelling in management, evaluation, and control processes highlighted a 25% enhancement of the predictive accuracy, displaying their suitability for BDA to enhance data-driven MEL.

Nevertheless, this study recognizes certain advantages of using BDA in the development of MEL frameworks; however, there is a shortage of empirical research that focuses on the precise application of BDA into MEL frameworks, especially in developing economies. Although current literature suggests that BDA is useful in business intelligence, limited empirical work investigates the role of BDA directly in MEL practices in sectors such as health, education and agriculture in Tanzania. This gap suggests that a rich framework must encompass the technical features of BDA and drive the overall strategic vision and mission of MEL to cast the greatest degree of impact (Akter et al., 2021; Chatterjee et al., 2022). It is identified in this paper that the lack of BDA and other analytical tools in a developing economy exposes organizations to up to 30% in response time to emergent risks. This understanding necessitates the development of a robust BDA-MEL framework (Guo et al., 2023).

This research presents such a framework to reflect the capability developments that confront present-day deficiencies in data access, operational analysis, and integration of timely insights. Thus, by advancing the proposed BDA-integrated MEL framework within this study, the visibility of MEL in Tanzanian organizations is raised, and the MEL process is changed into a more dynamic data-driven process that enhances organizational decision-making and programme performance.

1.2 Problem Statement

The Monitoring, Evaluation and Learning (MEL) in Tanzania has some major challenges such as lack of data, isolated data sources as well as inadequate abilities in statistical analysis which in turn reduce the efficacy of programmes and data-dependent activities. Many companies have problems with receiving the correct and consistent information in time and this information is processed with the help of the tools and methods that cannot predict. This leads to the late generation of information, failure to address new challenges as they unfold, and reduced capacity to evaluate the effectiveness of development programmes and the return on investment (UNDP Tanzania, 2022; NBS, 2022). Big Data Analytics (BDA) seems to be a suitable solution to improve MEL processes through real-time integration of data sources, efficient statistical analysis, and predictive insights to help organizations manage emerging challenges (Akter et

al., 2021; Guo et al., 2023). However, the incorporation of BDA into the MEL in Tanzania is limited in the literature despite gaps that call for structured frameworks that fit Tanzania's context. This paper intends to fill this gap by presenting a detailed BDA-MEL framework in an attempt to enhance organizational responsiveness and strategic learning as well as enhance the already existing MEL practices in the sectors of Tanzania.

1.3 Research Objective

1.3.1 General Objective

The purpose of this study is to propose a decision-making framework that combines Monitoring, Evaluation, and Learning (MEL) with Big Data Analytics

1.3.2 Specific Objectives

For the study to accomplish its general objective, the study has put into considerations the following specific objectives:

- i. To analyze the potential of Big Data Analytics in enhancing MEL.
- ii. To identify potential barriers to implementing BDA in MEL, and how can they be addressed.
- iii. To develop a decision-making framework that integrates BDA into MEL processes.

1.4 Research Questions

- i. How can Big Data Analytics be utilized to enhance MEL processes?
- ii. What are the potential barriers to implementing BDA in MEL, and how can they be addressed?
- iii. What are the key components of a decision-making framework that integrates BDA into MEL?

1.5 Rationale of Study

The purpose of the introduced framework is to enhance the connection between data potential and business outcomes and, therefore, enhance organizational performance, stimulate sustainable development, and help make the right strategic decisions. To organizations that wish to harness Big Data, the framework offers a solution by applying the Monitoring, Evaluation and Learning (MEL) programme cycle to a structured method of collecting, processing, analyzing and using data. This keeps the learning process as a continuous cycle, giving the businesses full advantage of the accumulated data while at the same time updating the model to a level that would properly serve the business.

2. Literature Review

The literature review offers a synthesis of the current state of knowledge on MEL, Big Data Analytics and its relevance to MEL, and BDA institutionalization into MEL practices. It also compiles literature, assesses the research gaps and shows how and why BDA is crucial in MEL in Tanzania.

2.1 Monitoring, Evaluation, and Learning (MEL) in Tanzania

The processes of Monitoring, Evaluation, and Learning (MEL) are critical steps in evaluating the success and the advancement influence of development programs and within the country of Tanzania, these processes have become rather mainstream when it comes to enhancing the effectiveness of development programs (Mkama, 2017). MEL processes are designed to ensure that development programs achieve their intended outcomes and contribute to broader development goals. Monitoring involves the regular tracking of program activities and outputs, while evaluation assesses the impact of these activities on target populations. Learning refers to the process of using insights from monitoring and evaluation to inform decision-making and improve program design and implementation.

In Tanzania, MEL practices are critical for programs in sectors such as health, education, agriculture, and economic development. These programs often aim to address complex and multifaceted challenges, such as reducing poverty, improving health outcomes, and enhancing educational access. Effective MEL practices are necessary to measure progress toward these goals, identify areas for improvement, and ensure that resources are used efficiently.

In the past, Tanzania has had some issues like; limited resources, infrastructural deficiencies which have caused a strain on the development of sound MEL systems (Mkama, 2017; Mleke, 2020). Recent strategies have sought to improve MEL frameworks through the National Monitoring and Evaluation (NME) framework that seeks to improve and standardize the process of data collection and evaluation for better decision-making. Other stakeholders who have supported the activities include Non-Governmental Organizations (NGOs) and international development agencies through offering technical support and training to enhance regional capacities. As such, it is clear that while there is improvement in these areas, issues like data quality as well as timely reporting emerge again and again. Moreover, still there is a very important internal issue on how to improve MEL effectiveness in order to overcome the existing barriers and fulfilled the demands of the development programs. The use of Big Data Analytics as one of the advanced technologies that could be integrated with MEL practices is one of the effective solutions that will be necessary for the further progress of the development programs.

2.2 The Potential of BDA in Enhancing MEL

The study shows that big data analytics also referred to as BDA has the potential of revolutionizing different industries by improving operations and decision-making processes. For example, BDA has assisted big stores such as Wal-Mart to cut costs and enhance efficiency in procurement and stock through real time price setting (Chatterjee, Chaudhuri, & Vrontis, 2022). Thus, BDA has been applied in financial institutions for the detection of fraud and in the case of providing individual financial advisors with recommendation and advice resulting in the improvement of customer trust and security (Brewis, Dibb, & Meadows, 2023). In healthcare, BDA's predictive analytics has enhanced patient's prognosis and other treatment interventions (Galetsi, Katsaliaki, & Kumar, 2020). Timely Data Collection: BDA can leverage real-time data sources, such as mobile phone data, satellite imagery, and social media, to provide timely insights into program performance. This allows for more responsive and adaptive program management.

BDA enables the integration of data from multiple sources, including structured data (e.g., surveys, government records) and unstructured data (e.g., social media posts, satellite images). This holistic approach provides a more comprehensive view of program outcomes and impacts. By providing more accurate and timely insights, BDA can facilitate continuous learning and adaptation in development programs. This helps ensure that programs remain relevant and effective in dynamic environments.

Several studies have highlighted the potential benefits of BDA in MEL. For example, Ahsan and Gunawan (2019) demonstrated how BDA can be used to monitor and evaluate the impact of agricultural interventions in real time, enabling more effective decision-making. Similarly, Zhao et al. (2020) explored the use of BDA in tracking health outcomes in low-resource settings, highlighting its potential to improve health program management. However, current obstacles that are important include issues concerning data security, the high cost of analytics tools and specialized training in analytics (Zhao et al., 2020). To implement and embed BDA into organizational operations and bypass these challenges, there is a need for a strong decision-making framework that will address these challenges while harnessing the benefits that BDA brings to Monitoring, Evaluation and Learning (MEL).

2.3 Case Studies of BDA in MEL

Case studies showcasing the use of Big Data Analytics (BDA) in Monitoring, Evaluation and Learning (MEL) demonstrate its ability to transform various sectors. For instance, in healthcare, BDA has empowered hospitals to enhance patient care through predictive analytics that identify at-risk patients and customize treatment plans leading to improved outcomes (Goyal, Rekha, Malik, & Tyagi, 2020). In the field of education BDA has been utilized to track student performance and assess educational programs enabling institutions to modify curricula and teaching approaches based on real time data thus enriching student learning experiences. Retail giants such as Walmart have leveraged BDA to optimize inventory management and refine pricing strategies resulting in cost savings and increased sales (Guo et al., 2018). Likewise, the banking sector has embraced BDA for fraud detection and personalized financial guidance enhancing both operational security and customer trust (Brewis, Dibb, & Meadows, 2023). These examples showcase how big data analytics can enrich monitoring, evaluation and learning procedures through the delivery of insights, enhancing decision making processes and fostering ongoing progress in various areas.

In Kenya, BDA has been used to monitor agricultural productivity by analyzing satellite imagery and mobile phone data. This helped identify areas where interventions are needed (Giacalone & Scippacercola, 2016). In India, BDA has been employed to evaluate the impact of health programs by analyzing data from electronic health records, mobile health applications, and social media. This has provided valuable insights into the effectiveness of health interventions and informed policy decisions (Zhao et al., 2020). In Tanzania, BDA has been used to monitor educational outcomes by analyzing data from school records, student assessments, and mobile learning platforms. This has helped identify gaps in educational access and quality, leading to targeted interventions (Mkama, 2017).

These case studies demonstrate the potential of BDA to transform MEL practices by providing more accurate, timely, and comprehensive insights into program performance.

2.4 Real-Time Decision-Making Frameworks Through BDA in Implementing MEL

The integration of Big Data Analytics (BDA) into real-time decision-making frameworks has emerged as a pivotal development in enhancing Monitoring, Evaluation, and Learning (MEL) processes. Real-time decision-making frameworks leverage BDA to process and analyze large volumes of data instantaneously, providing organizations with timely insights that are crucial for effective MEL. These frameworks enable continuous monitoring of key performance indicators (KPIs), facilitate immediate evaluations of program outcomes, and support agile adaptations to strategies based on real-time data (Guo et al., 2018).

Research highlights the transformative impact of BDA on real-time decision-making within MEL frameworks. For instance, (Galetsi et al., 2020) discusses how real-time analytics platforms, through their capacity to integrate diverse data sources, enhance the accuracy and immediacy of insights, thereby supporting more responsive and informed decision-making. This capability is particularly valuable in dynamic environments where timely interventions are critical. In sectors such as healthcare, real-time decision-making frameworks have been shown to improve patient care by allowing for the rapid analysis of health data and the swift adjustment of treatment plans (Galetsi et al., 2020).

Moreover, Guo et al. (2018) illustrate how real-time dashboards and monitoring systems, powered by BDA, enable organizations to track performance metrics in real time, facilitating proactive management and rapid course corrections. This approach not only improves operational efficiency but also enhances the overall effectiveness of MEL processes by ensuring that decisions are based on the most current and relevant data. However, challenges such as data integration complexity, the need for robust technological infrastructure, and potential information overload remain significant barriers (Mkama, 2017).

The ongoing advancements in BDA technologies and their integration into real-time decision-making frameworks are expected to further enhance MEL practices. By addressing existing challenges and refining these frameworks, organizations can achieve more effective monitoring, comprehensive evaluations, and continuous learning, ultimately leading to improved program outcomes and strategic success (Zhao et al., 2020).

2.5 Challenges and Opportunities

The amount of research on the topic shows there are many obstacles when using big data analytics, especially for smaller companies with fewer resources (Al-Abassi, Karimipour, Haddadpajouh, Dehghantanha, & Parizi, 2020). Big firms like Google for instance can afford to spend a lot of money on analytics experts and tools but smaller companies might find it difficult to hire data experts or purchase these resources (Naganathan, 2018). The process of gathering storing and utilizing data for analytics is further complicated by laws about data privacy such as GDPR. Companies that overcome these obstacles though stand to gain a great deal. Businesses that are adept at big data analytics can increase customer satisfaction promote innovation and make decisions more quickly and intelligently (Goyal et al., 2020). For example,

Netflix makes use of big data analytics to comprehend viewer preferences which helps it create shows that connect with viewers and boost subscriptions and customer loyalty.

3. Methodology

The methodology section outlines the research design, data collection methods, data analysis techniques, and the development of the proposed decision-making framework.

3.1 Research Design

The objective of this study was therefore to establish a sound decision-making framework that incorporates Big Data Analytics to improve Monitoring, Evaluation and Learning. The mixed-methods, concurrent design was utilized, in which, data both, qualitative and quantitative were collected simultaneously, and analyzed separately with the final results combined in the study of the research problem. The qualitative part of the study incorporated interviews with MEL experts to gather rich ideas and lessons on the issues and prospects in MEL practices. These qualitative findings were critical in determining the areas which BDA could enhance MEL processes at the organization. In parallel, quantitative data were gathered through structured questionnaires to capture more general levels of effectiveness of the challenges under study within a larger population of MEL practitioners. This approach of integrating the use of qualitative data with quantitative data was deemed useful to ensure the validity of the study and propose improvement to the MEL processes by BDA.

3.1.1 Qualitative Approach

Semi-structured interviews and focus group discussions used in order to obtain qualitative data. Such factors as MEL professionals' personal experiences and their expectations from BDA, as well as the opinions of BDA professionals and key decision-makers, were obtained through interviews. Group discussions were conducted with the stakeholders in order to determine their actual experience with the implementation of BDA with regards to MEL and to establish the emerging and reoccurring problems and successes in this matter.

3.1.2 Quantitative Approach

Primary data were collected using structured questionnaires while secondary data collected include; statistical information and reports from existing databases. Further, cross-sectional surveys were conducted with organizations that are already using BDA in MEL to know their experiences, difficulties they faced, and found. The collection of secondary data from industry reports, academic publications and works, case studies for BDA applications in MEL. The analysis defines Trends, Successes, and potential voids in today's MEL approaches.

3.2 Data Collection

3.2.1 Primary Data Collection

Semi structured, face-to-face interviews were conducted with 20 MEL professionals in various sectors such as health, education, agriculture, and economic development sectors. This sample size was kept small on purpose to reach the point of data saturation, which is an important characteristic of qualitative research. The studies have found that saturation means the point that more about the focus of the study can be known when it involves the participation of about 15-30 participants thus, allowing the emergence of more themes that can be reoccurring, as

well as, understanding participants' perception. The interview questions were as follows to effectively capture views about existing MEL practice, experience with BDA, and willingness to adopt BDA tools.

To supplement the interview, two focus group discussions were held with fifteen participants from program managers and data analysts. These discussions have created a conducive collaboration environment to deliberate on how BDA can improve MEL processes and availed insights into the constituent parts of a decision-making model. Indeed, the interviews and focus groups provided a large qualitative data that was valuable in the development of the proposed framework.

3.2.2 Secondary Data Collection

Secondary data sources comprised of studies conducted through review of the previous MEL reports, case studies, and scholarly articles that addressed the concept and practice of BDA in the development programs. This information helped to define the further prospects and peculiarities of BDA adoption in MEL, as well as to determine the key success stories and possible challenges.

3.3 Data Analysis

3.3.1 Qualitative Data Analysis Techniques

This data collection involved interviews and focus group discussions in conducting thematic analysis on qualitative data; the following is obtained from research: Thematic analysis is a suitable method of analyzing qualitative data to identify, describe, and report themes. The first step of thematic analysis was carried out by bringing oneself into the data, the process in which the researcher becomes very acquainted with the data, the transcripts and notes. It was very important to start in this way because it allowed for further investigation of the topics.

After this, the research continued to the initial coding where codes emerging from the data were identified. Codes were short meaningful terms or tags that stood for aspects of data excerpts. This coding was done through the inductive approach, whereby themes were developed directly from the data collected and through the deductive approach whereby the study was informed by theories or hypotheses derived from research propositions. When the first ideas were generated, the researcher grouped these codes into possible themes that had coherent patterns or ideas that were crucial to the research questions.

Once potential themes were generated, the process moved to screen these themes against the dataset to check how effectively they captured the dataset. This led to the fine-tuning of the prior themes and the introduction of new ones to ensure that the thematic organization made sense of the participants' narratives. In the end, all the themes were given a clear and distinct label and the presentation offered a coherent story that would address the research questions and relate to the intents and purposes of the study. It allowed the construction of a nuanced view of the participants' experiences and conceptions about MEL practices and Big Data Analytics processes.

3.3.2 Quantitative Data Analysis Techniques

In analyzing the quantitative data obtained in this study, various statistical techniques were used in analyzing quantitative data originating from the survey and structured questionnaires. The operations began with Simple Measures which included mean, median, mode, standard deviation as well as variance. This first statistical analysis gave a general idea of the data's cardinal descriptive features along with participant descriptive features concerning challenges with MEL practices.

Apart from descriptive statistics, inferential statistics were used in the determination of relationships between the variables as well as in making estimates. Moreover, chi-square analyses were used to compare the participants' scores of the categorical variable, for instance, the workspace sectors in which participants work such as health or education sectors and their perceived BDA. In addition, independent samples t-tests were used to compare means between two groups to understand differences in readiness to adopt BDA tools across different roles including program managers and data analysts. Secondly, multiple regression analysis was used to analyze the effect of some predictors on the BDA readiness, while controlling for other factors.

All quantitative data analysis was done using statistics software (SPSS). The conventional software was used to carry out calculations and generate visuals; graphs and charts which made the results easy to interpret. The following specific quantitative data analysis techniques were then employed to offer a clear insight into the problems encountered in MEL practices in Tanzania and the possibility of BDA in solving the problem.

3.4 Sampling Techniques

The study selection method used is both purposive sampling and random sampling. Purposeful sampling was used to target individuals with knowledge and prior experience in implementing MEL activities in different sectors: health, education, agriculture, and economic development. This approach focused on those who could offer quality qualitative data on the application of Big Data Analytics (BDA) in MEL. In the quantitative framework choice, random sampling was used to obtain data from a larger population using questionnaires and structured questionnaires in surveys and therefore generalize findings from the study and across the sectors engaged in MEL. This approach makes the study even stronger since, on the one hand, it collects qualitative data that allows for deep analysis, and, on the other hand, provides quantitative data that is characteristic of a specific population.

3.5 Development of the Decision-Making Framework

Based on the insights gained from the data analysis, a decision-making framework was developed to guide the integration of BDA into MEL processes in Tanzania. The framework includes components such as data collection and management strategies, analytical tools, decision-making processes, and continuous learning mechanisms.

3.6 Validation and Refinement

The preliminary framework was validated through a sequence of workshops with MEL professionals and BDA experts. The workshop feedback gradually built an increasingly refined framework that would be most relevant to real-world cases.

3.7 Ethical Considerations

Data collection was done strictly following ethical considerations in participant confidentiality, rights, and privacy. Before enrollment, all the participants were given a comprehensive description of the study project, their involvement and the possible costs and benefits of the study initiation. From respondents, informed consent was sought and signed a standard consent form that explained that the participation was voluntary and that they could withdraw at any time without any consequences.

In an endeavor to ensure the anonymity and confidentiality of the participants, the participants were given impersonal numbers to enable researchers to differentiate among the participants while making their responses as well as during the entire research process. Information that was obtained from interviews and focus group were saved electronically in a coded format and only the members of this study team were able to access it. Also, all the audio recordings made throughout the research were transcribed and then all recordings were erased to protect participants' identities.

To follow the rules of the data protection legislation, this study checked that all the personal data, used in the study were processed following the laws. Besides, ethical considerations adhered to participants' rights in the course of the study; participants' rights to dignity consideration were respected. That is why, besides guaranteeing the methods applied, the research implemented a large spectrum of ethical actions to develop trust and transparency leading to the credibility of the chosen approach and the outcomes obtained.

4 Findings

The findings of this study are organized around the key themes identified in the data analysis and are presented in relation to the research questions.

4.1 Potential of Big Data Analytics to Enhance MEL

Participants in the study recognized the potential of BDA to address many of the challenges in current MEL practices:

Table 1: Potential of big data analytics to enhance MEL

The potential of BDA to enhance MEL	Description	Mean (1-5)	Standard Deviation
Improved data integration	BDA integrates diverse data sources, including real-time and non-traditional data, to provide a comprehensive view of program outcomes.	4.3	0.5
Advanced analytical capabilities	BDA tools offer advanced analytical capabilities like predictive analytics and machine learning, identifying patterns and trends not visible through traditional analysis.	4.2	0.4

Enhanced decision-making	The ability to analyze large datasets quickly and accurately facilitates more informed and timely decision-making in program management.	4.0	0.6
Increased efficiency in data processing	BDA automates and accelerates data processing tasks, reducing the time and resources required for data analysis.	4.4	0.3
Improved stakeholder engagement	BDA provides insights that can be easily communicated to stakeholders, enhancing transparency and facilitating better stakeholder engagement in decision-making processes.	4.1	0.5

The findings from the study (Table 1) highlight the significant potential of Big Data Analytics (BDA) to enhance Monitoring, Evaluation, and Learning (MEL) processes in development programs. The data, represented by mean scores on a Likert scale, provide insights into the areas where BDA is perceived to be most beneficial.

Improved data integration (Mean: 4.3): Participants highly rated the ability of BDA to integrate diverse data sources, including real-time and non-traditional data, resulting in a more comprehensive view of program outcomes. This suggests that BDA is effective in overcoming one of the key challenges in traditional MEL practices fragmented data. By bringing together data from various sources, BDA enables a holistic analysis that can lead to more accurate and actionable insights. Mean agreement between participants on the benefits of BDA integration is indicated by a standard deviation of 0.5. Although some respondents had slightly different views, the majority believed that BDA improves data integration. The high rating for improved data integration echoes findings from previous studies, such as those by Kharrazi et al. (2016) and Hernandez and Roberts (2018), which emphasize the ability of BDA to break down data silos and integrate diverse data sources. These studies highlighted how integrating real-time data and non-traditional data sources, such as social media or remote sensing, can enhance the comprehensiveness of MEL systems. The current study reinforces these conclusions, suggesting that data integration remains a core strength of BDA across different contexts.

Advanced analytical capabilities (Mean: 4.2): BDA's advanced analytical capabilities, such as predictive analytics and machine learning, were also rated highly by participants. This indicates that BDA is valued for its ability to uncover patterns and trends that might not be visible through traditional analysis methods. These advanced capabilities are particularly useful in complex development environments where understanding and anticipating changes can significantly improve program outcomes. Responses to BDA's advanced analytical capabilities (such as machine learning and predictive analytics) had a SD of 0.4, indicating that participants generally agreed on its usefulness raise the upgrade of MELs. The advanced analytical capabilities of BDA, including predictive analytics and machine learning, were also highly rated, consistent with the findings of DeSouza and Smith (2017) and Gamage and Mei (2019). These studies discussed how BDA's ability to process and analyze large datasets enables the

identification of patterns that traditional methods might miss. The current study's findings contribute to this narrative, highlighting that practitioners continue to value BDA's capacity for uncovering hidden insights, which is essential for adaptive program management.

Enhanced decision-making (Mean: 4.0): The study participants recognized the role of BDA in enhancing decision-making processes, as reflected in the mean score of 4.0. The ability to quickly analyze large datasets allows for more timely and informed decisions, which is crucial in program management. This finding suggests that BDA is helping organizations move from reactive to proactive decision-making, improving the overall effectiveness of MEL practices. However, there is some variation in perceptions of how BDA affects decision-making, as evidenced by the high standard deviation of 0.6. This suggests that although most individuals agreed on its benefits, others may have differed in how much BDA improves decision-making. Previous research, such as Custer et al. (2018), has documented the positive impact of BDA on decision-making in MEL processes, a conclusion supported by the current study. The ability to rapidly analyze extensive datasets and provide timely insights has been shown to improve decision-making quality, allowing organizations to be more agile in their response to emerging challenges. The mean score of 4.0 in this study reflects a consistent appreciation for BDA's role in making MEL processes more responsive and informed.

Increased efficiency in data processing (Mean: 4.4): The highest-rated potential of BDA is its ability to increase efficiency in data processing. With a mean score of 4.4, participants emphasized the importance of BDA in automating and accelerating data processing tasks. This efficiency reduces the time and resources required for data analysis, allowing MEL professionals to focus more on interpretation and strategy rather than data handling. This also contributes to faster feedback loops, enabling more agile and adaptive program management. With a low SD of 0.3, this indicates strong agreement in the responses of participants as to what role BDA plays in enhancing data processing efficiency; there is little variation in responses. This can be indicative of consensus on the clear advantages of BDA, entailing saving of time and reduction of resources. The increased efficiency in data processing, as indicated by the highest mean score of 4.4, is a finding that aligns with earlier work by Verhulst and Young (2017). Their research highlighted that BDA significantly reduces the time required for data management and processing, which in turn allows for quicker implementation of insights. The current study's emphasis on efficiency suggests that this aspect of BDA is increasingly valued, particularly in contexts where rapid feedback loops are necessary for program success.

Improved stakeholder engagement (Mean: 4.1): Improved stakeholder engagement was also positively rated, with a mean score of 4.1. BDA provides insights that are not only detailed but also easily communicable, enhancing transparency and building trust among stakeholders. This is particularly important in development programs where stakeholder buy-in is critical for success. The ability to present data-driven evidence in a clear and compelling way helps in aligning stakeholder expectations and fostering collaborative decision-making. The SD of 0.5 shows that there is a moderate consensus regarding the capability of BDA in improving stakeholder involvement. Whereas the majority of them found it useful to ensure transparency

and communication, it varied probably because their organizational settings were different. The potential for BDA to improve stakeholder engagement has been explored in studies like those by Waller and Fawcett (2013) and Miller and Wedell (2020), which discuss how clear and data-driven communication enhances stakeholder involvement. The current study's findings reinforce this idea, showing that BDA's ability to present complex data in an understandable manner is critical for building trust and ensuring stakeholder buy-in. This is especially important in development programs where stakeholder collaboration is essential for achieving desired outcomes.

4.2 Potential Barriers to Implementing BDA in MEL and their Solutions

Participants in the study recognized the potential barriers to BDA implementation and suggested solutions. The table below presents the qualitative results.

Table 2: Potential Barriers to Implementing BDA in MEL and their Solutions

Theme	Sub-Themes	Description	Suggested Solutions
Data quality and availability	Incomplete data	Gaps or missing information in datasets make it difficult to perform accurate analysis.	Implement data quality protocols and regular audits. Use data cleaning tools like Talend or Apache Nifi.
	Inconsistent data formats	Variability in data formats across sources hinders integration and analysis.	Standardize data formats and definitions across systems.
	Outdated information	Data may not be current or relevant, affecting the accuracy of insights.	Regularly update data and use real-time data streaming tools like Apache Kafka.
Technical challenges	High infrastructure costs	Significant expenses associated with the technology and infrastructure needed for BDA.	Utilize cloud-based solutions to manage costs. Start with pilot projects to demonstrate value.
	Complexity of tools	Advanced BDA tools can be complex to configure and use effectively.	Invest in training programs and technical support.

	Lack of technical expertise	Shortage of skilled professionals with expertise in BDA and MEL systems.	Offer professional development and engage external consultants for support.
Data privacy and security	Data protection	Risks associated with safeguarding sensitive or personal data.	Implement strong encryption practices and comply with data protection regulations.
	Risk of cyber-attacks	Vulnerability to security breaches and cyber-attacks.	Use robust access controls and conduct regular security audits.
Skill gaps and expertise	Insufficient training	Lack of training for staff on BDA tools and techniques.	Develop and deliver training programs tailored to BDA skills.
	Resistance to new technologies	Difficulty in adapting to and accepting new technologies.	Implement change management strategies to ease technology adoption.
Cost and resource constraints	High initial costs	Large initial investment required for BDA tools and infrastructure.	Conduct cost-benefit analyses and seek external funding or grants.
	Limited budget for BDA projects	Budget constraints limit the ability to invest in BDA.	Start with phased implementations and pilot projects to manage costs.
Data governance and management	Lack of governance framework	Absence of clear policies and procedures for managing data.	Establish a comprehensive data governance framework with defined roles and responsibilities.
	Unclear data ownership	Ambiguities around who owns and is responsible for data management.	Develop clear data ownership and management policies.
Integration with existing systems	Compatibility issues	Difficulties integrating BDA tools with existing MEL systems.	Ensure new tools are compatible with existing systems and use phased integration approaches.

	Workflow disruptions	Potential disruptions to existing workflows due to new BDA tools.	Implement integration in phases to minimize disruptions.
Cultural and organizational resistance	Resistance to technology	Organizational reluctance to adopt and utilize new technologies.	Engage stakeholders early and address concerns through effective communication.
	Lack of collaboration	Insufficient cross-departmental collaboration affects implementation.	Foster a culture of collaboration and communication across departments.

Results in Table 2 above show that data quality and availability are fundamental concerns when dealing with BDA in MEL. Issues like incomplete data, inconsistent formats, and outdated information significantly hamper the effectiveness of analytics. Previous studies underscore the importance of robust data management practices in addressing these challenges. For instance, Chatterjee et al. (2022) highlight that poor data quality can lead to misleading conclusions in BDA, which may compromise decision-making processes. Addressing these issues through data cleaning tools and standardization practices, as suggested in your table, aligns with best practices recommended by other researchers (UN, 2022).

Furthermore, technical challenges, particularly high infrastructure costs and the complexity of BDA tools are common obstacles. The high cost associated with BDA technologies often restricts organizations, especially in developing countries like Tanzania, from fully utilizing these tools. Cloud-based solutions have been suggested as a cost-effective alternative. This recommendation is consistent with the findings of Chatterjee et al. (2022), who discuss the potential of cloud computing to reduce the financial burden associated with big data infrastructure. Additionally, the complexity of BDA tools necessitates substantial investment in training and technical support, as emphasized by Guo et al. (2023) in their exploration of the emerging role of data scientists in organizations.

Additionally, data privacy and security are paramount, particularly given the sensitive nature of data often involved in MEL activities. Risks of cyber-attacks and data breaches are highlighted as critical concerns. Strong encryption and regular security audits are necessary measures, as reinforced by studies such as those by NBS (2022), which discuss the critical need for secure data handling practices in the era of big data.

The thematic analysis also points to significant skill gaps and expertise shortages, which hinder the effective implementation of BDA in MEL. The lack of trained personnel and resistance to adopting new technologies are recurring issues. Professional development and external

consultancy are suggested solutions, aligning with the broader literature on the need for continuous skill development in the face of rapidly evolving technology (IDC, 2022).

Cost and resource constraints are also persistent challenges, with high initial costs and limited budgets often cited as barriers. This is a common issue in adopting BDA technologies, particularly in resource-constrained environments. The suggestion to start with phased implementations and pilot projects is supported by research from Akter et al. (2021), who advocate for incremental adoption strategies to manage costs effectively.

Moreover, the lack of a governance framework and unclear data ownership are identified as major issues in your analysis. Establishing clear governance structures is critical for the successful integration of BDA into MEL processes. This is consistent with findings from Guo et al. (2023), who emphasize the importance of data governance in ensuring data quality and facilitating effective analytics.

Besides, compatibility issues and workflow disruptions are common concerns when integrating new BDA tools with existing MEL systems. A phased integration approach, as suggested, is recommended by Akter et al. (2021) as a way to minimize disruptions and ensure a smoother transition.

Lastly, cultural and organizational resistance to new technologies can significantly impede the adoption of BDA. Engaging stakeholders early and fostering collaboration are crucial steps in overcoming this resistance. Studies by Akter et al. (2021) echo these recommendations, emphasizing the importance of organizational culture in the successful implementation of analytics initiatives.

4.3 Thematic Analysis of Qualitative Findings on BDA in MEL

Theme 1: Enhanced Decision-Making and Strategic Planning

Some participants mentioned that BDA enhances decision-making in the sense that it offers timely informed strategies that assist the programme in making changes where necessary on time. Interviewees noted that BDA could take organizations from ‘rear-view mirror planning’ to ‘forward-looking planning’.

“Formerly, we would have to wait for end-of-the-year reports to be prepared, but with BDA, we can make decisions in real time. This lets us dynamically plan our approach in the middle of the project.” Program Manager, Health Sector.

“In Big Data tools, we can discover correlations which we might have overlooked, and this, in turn, assists in achieving forecasts in a specific result or event.” Administrative professional Position for SMC MEL Specialist in the Education Sector.

Theme 2: Improved Data Integration and Access

The participants also pointed out that the BDA helps to integrate data from multiple sources and, therefore, provides a more holistic picture of program performance. This integration was

found useful because it models a solution to the dilemma of fragmented traditional MEL data sources.

“Data integration has always been a problem in our sector, and surprisingly, with Big Data, we can pull data from social networks, surveys, satellite images, etc., into a single space.” Data Analyst - Agriculture Sector

“We are finding that BDA tools are assisting in the breakdown of silos. Now, the chances of getting a more accurate, instead of a partial, picture of a customer are higher because data streams previously separate are merged.” MEL Officer – Economic Development.

Theme 3: Increased Efficiency and Resource Optimization

The respondents stressed the time and cost savings made by using BDA, as it helps to facilitate various data processing. The lack of incorporated automation was praised in BDA tools for helping to speed up common MEL processes when staff might best be utilized for interpretation and planning.

“Previously, it took sometimes several days to clean and combine data, but now the BDA tool does most of it.” The ICT Specialist, NGO

“Praising the efficiency gains, he noted. All our efforts can now be directed towards what the data is communicating rather than struggling with getting the data to communicate in the first place.” The MEL Coordinator, Health Sector.

Theme 4: Enhanced Stakeholder Communication and Engagement

Another commonly mentioned benefit of BDA was its ability to improve communication with stakeholders. Participants found that BDA's visualizations and predictive analytics help to better communicate program outcomes, making it easier for stakeholders to understand MEL insights.

“Stakeholders want evidence, and BDA gives us that in a visually compelling way. They are more engaged now because we can show real impact.” The Project Leader, Education Sector

“With BDA, we can break down complex data into digestible formats, which is crucial for keeping our partners on board.” The Communications Officer, Economic Development

Theme 5: Challenges of Technical Infrastructure and Skill Gaps

The participants saw the strengths of BDA but often discussed threats more often, especially where infrastructure and specialist knowledge are necessary for the proper implementation of BDA. Issues of data privacy were also an issue of concern, especially for subsectors handling sensitive data.

“Huh, we do not have IT support for BDA analytic systems, which restricts the possibility of implementing BDA for our business.” The MEL Manager, Agriculture Sector

“Despite using BDA, there is still room for training. Often, staff use it like this: “We require more training for our team to unlock the workforce.” The Program Director, Second Health Sector

These themes show the breadth of what BDA can achieve to improve MEL practices and the areas where organizations have difficulties realizing these tools.

Developing a Decision-Making Framework that Integrates BDA into MEL Processes

In the field of Big Data as well as Monitoring, Evaluation, and Learning (MEL), honing a solid framework for decision-making must consider the factors of data management and analysis (Chatterjee, Chaudhuri, Vrontis, et al., 2022). These issues include the origins of data, where data are stored, how data are prepared, and the positioning of the MEL processes relative to existing organizational policies and procedures. The framework defines the main components and practices that should keep the augmenting framework both optimizing the use of data in decision making and optimizing the ways of data usage in line with the highest ethical standards.

4.3.1 Exploring Data Provenance and Data Storage Processes

An inherent part of MEL in Big Data is that there must be knowledge of the sources of the big data (Galetsi et al., 2020). Data authentication is the process of identifying the origin of data, that is, the source, the way it was collected, and how it was processed (Goyal et al., 2020). Data sources are rather diverse and include transactional databases, social media, sensors, and the rest of IoT tools. These sources enrich the dataset in terms of richness and variety; at the same time, the heterogeneity of the sources leads to problems in data quality and handling.

Essential to this category is the storage mechanisms as well. The framework is capable of working on data amounts that can reach terabytes in a scalable and efficient way. Popular distributed file systems like Hadoop’s HDFS and other cloud-based systems are used for data storage in Big Data. These systems do not only record data across various nodes so as to make sure that data are duplicated for hot standby and disaster prevention but also provide fast and efficient way of data accessibility and data analysis for real-time or close-to-real-time MEL activities.

4.3.2 Data Preprocessing to Ensuring Data Quality and Usability

The range of data, which is collected, could be varied, and this makes the preprocessing phase a critical phase within the developed framework. This process encompasses several vital activities:

1. **Data Cleaning:** This step is important so that the framework is built on relevant, consistent data that do not contain or are not influenced by noise. Data cleaning is the first step before data analysis and it is focused at treating missing values, duplicate observations and errors. In as much as Monitoring, Evaluation, and Learning requires high levels of precision, effective data cleaning forms the root to accurate and relevant outcomes.

2. **Data Integration:** The framework combines the data into one single data set for further analysis. It may include units such as converting data from one format to another, transforming the data structures and reconciling semantic differences. Another key practice in MEL is data integration that is critical in MEL since it enable inclusion of all the relevant data in a project to make the evaluation more comprehensive.
3. **Data Transformation:** After cleaning, the data has to be integrated; in some cases, the data may be transformed to meet analysis requirements. This might mean normalization, aggregation, or transformation of the data, depending on the analysis to be conducted. The transformation process within the framework makes data ready for analysis and ensures that the data is best suited for the methodologies used within the framework, thus improving the framework's efficiency.

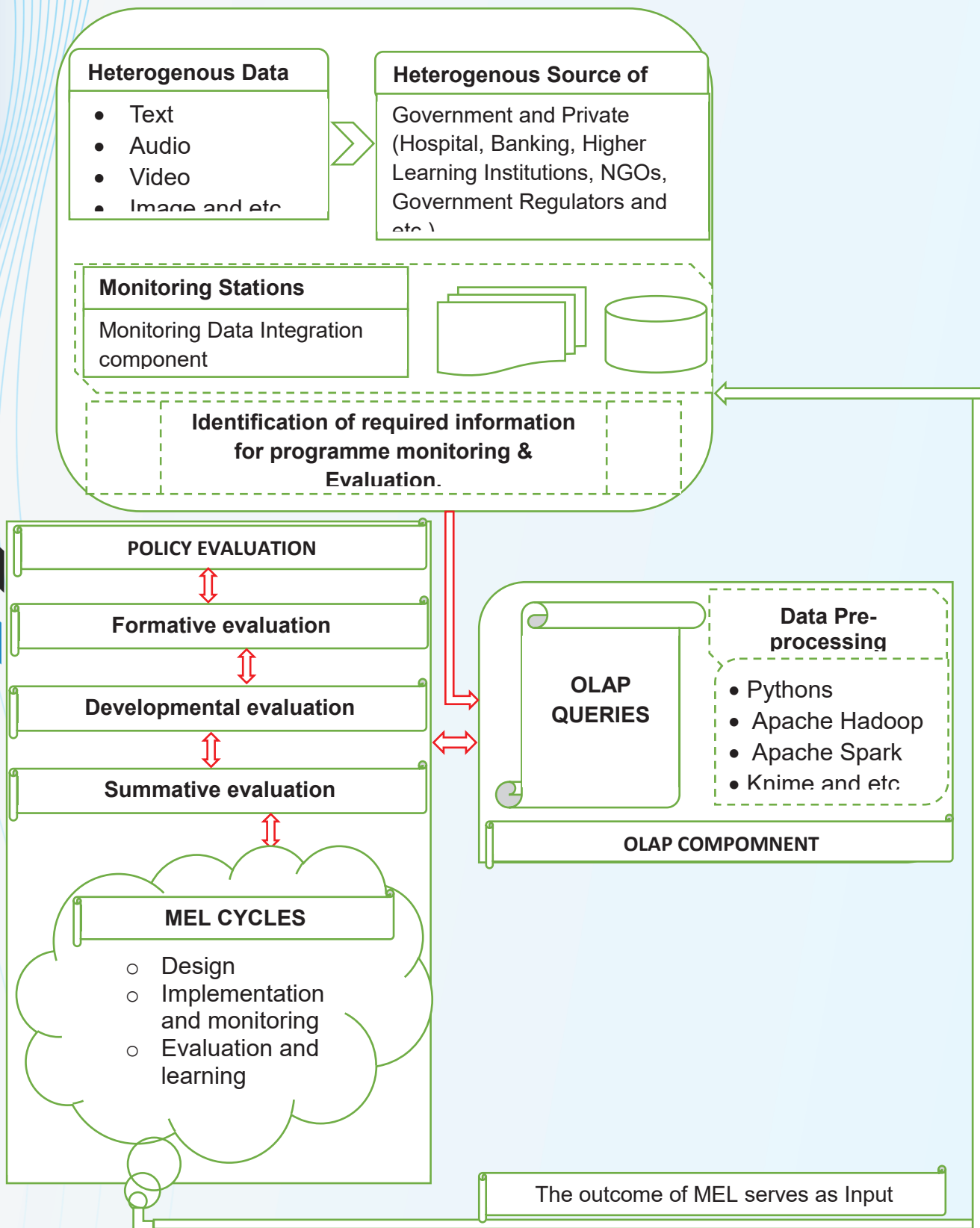
4.3.3 Evaluative Components: Integrating MEL with Big Data

The framework is designed to support four types of evaluation (Policy Evaluation, Formative Evaluation, Developmental Evaluation, and Summative Evaluation) each serving a different purpose within the MEL process.

1. **Policy Evaluation:** In this case, Policy Evaluation looks at the impact and effectiveness of organizational policies through data. With Big Data, Policy Evaluation can give you granular insights into how policies are working across different segments and environments. So, you can see what works and what doesn't and where to improve.
2. **Formative Evaluation:** Formative Evaluation benefits from real-time data analysis. By monitoring program implementation in real-time, the framework can give you feedback to iterate and improve. Big Data helps you spot trends and challenges as they emerge so you can intervene to boost program success.
3. **Developmental Evaluation:** Developmental Evaluation is perfect for innovative or adaptive programs where traditional evaluation methods won't cut it. Big Data can process vast amounts of unstructured data like qualitative feedback and social media interactions to give you rich insights to help evolve these programs.
4. **Summative Evaluation:** At the end of a program or policy cycle, Summative Evaluation uses Big Data to do a full review of overall performance. By analyzing large datasets, the framework can give you a deep understanding of the program's impact, what worked and what to focus on next.

The application of Big Data expands the landscape of Monitoring, Evaluation, and Learning, it becomes more crucial to advance a complex decision-making support system. This framework, therefore, includes understanding data origin, location, and preparation as well as how MEL processes align to the organization's policies. Together, the elements of the framework, allow the organization to reap the full benefits of big data by enhancing the Organization's ability to make better and smarter decisions that improve organizational performance and lead to learning.

Figure 1. Enhancing MEL with Big Data Analytics: A Decision-Making Framework



5 Conclusion and Recommendations

5.1 Conclusion

The study highlights the critical role of BDA in enhancing decision-making in MEL. By providing advanced analytical tools and real-time data insights, BDA can support more effective program management and enable organizations to respond quickly to emerging trends and challenges. The barriers to implementing BDA identified in this study are significant but not insurmountable. Organizations can address data privacy and security concerns by adopting robust data protection measures and ensuring compliance with relevant regulations. Investing in technological infrastructure and building capacity in data analytics are also essential steps to overcome technological and infrastructure limitations. This study set out to explore how Big Data Analytics can enhance Monitoring, Evaluation, and Learning practices in Tanzania and to develop a decision-making framework for integrating BDA into MEL. The findings suggest that BDA has significant potential to improve the effectiveness and efficiency of MEL processes by providing more comprehensive data integration, advanced analytical capabilities, and enhanced decision-making. However, the successful implementation of BDA in MEL requires addressing key barriers, including data privacy concerns, technological limitations, and regulatory challenges.

5.2 Recommendations

The Tanzanian government and development organizations should collaborate to establish and enforce data privacy and security standards that protect sensitive information while enabling the use of BDA in MEL. Also, investments in technological infrastructure, such as data storage and processing capabilities, are essential to support the implementation of BDA in MEL. Furthermore, organizations should invest in training and capacity-building initiatives to enhance the data analytics skills of MEL practitioners and consider adopting BDA in a phased approach, starting with pilot projects to test and refine the integration of BDA into MEL before scaling up.

Future research should explore the application of BDA in MEL across different sectors, such as education, health, and agriculture, to identify sector-specific challenges and opportunities. Longitudinal studies are needed to assess the long-term impact of BDA on the effectiveness and sustainability of MEL processes in Tanzania.

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Influence -of Determinants of Service Quality on Tourist's Revisit Intention in Tourist Destinations

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Abstract

This study focused on determinants of service quality on tourist revisit intention in tourism destinations. The study reports findings on the determinants of service quality in tourist destinations and their implication on tourist's revisit intention. The study only focused on the reliability and empathy service quality determinants. Service quality dimensions provided a comprehensive approach to the computation of the study findings. Data were collected from 304 tourists who visited Arusha tourists' destinations, including Tarangire National Park, Ngorongoro Conservation Area (NCA) and Arusha National Park. A structured questionnaire was used to collect data. Data were analysed using the inferential statistics method. Contrary to the usual perception, the study findings present that reliability and empathy were found to have a positive and significant impact on predicting the quality of tourist destination services. The study concludes that reliability and empathy are acceptable determinants of service quality in tourist' destinations, and thus, they contribute towards customers' revisit intention. The study, therefore, recommends that tourist destinations should consider the practicability of reliability and empathy determinants to increase customer revisits.

Keywords: *Service quality, tourist destinations, reliability, empathy*

1.0 Introduction

Tourism has been one among the peculiar fast-growing sector which its contribution to the economy is substantive (Soleimani & Einolahzadeh, 2018). Based on the World Tourism Barometer, the global state of tourism shows that the sector has been growing positively with

increase in its base and flowering the economies. Regionally, the sector has witnessed a 6% degree of growth across Pacific and Asia zones, Africa being 5.6% and East Africa 17.5% (Kyara et al., 2021). That being the case, the sector needs to express high level of quality of services provided including in the tourists' destinations. Since the tourists' destinations are expressed as areas or places that tourists have focused on to pay visits, such destinations must reflect the service quality attributes to capture their attention (Nguyen, 2020). Notably, common related services in tourists' destinations includes conference center, related tourists' transportation, photographic services and documentaries which have impact in customer satisfaction and retention (UNWTO, 2021). The identified services provide tourist destinations the essentiality for enduring retention and ongoing engagement between the respective destinations with their esteemed customers (Cristea & Mocuta, 2018). Customers in the tourist destinations must at first glance perceive that the destination's services are reliable and empathetic attributed therein (Imran et al., 2018). Reliability and empathy as a whole form the essence of service quality in respective tourists' destinations which being crucial for the sustainability of tourism sector. The portrayed nature of tourism industry signifies its outstanding performance globally, regionally and in country specific areas where provision of job opportunities and engagement of stakeholders such as tourists would be possible without the contribution of the service quality attributes (WTTC, 2020; Sharma *et al.*, 2021). Studies regarding determinants of service quality using the SERVQUAL model have proven the contribution of service quality determinants in customer satisfaction and retention and, thus, tourists' destinations being inclusive in the course of improving quality of services from a customer care perspective to real-life situations within (Surahman, & Wahyuni, (2020). The rationale for the provision of quality service in tourists' destinations aligns with the increased growth of the sector, invented tourism activities within the tourist destinations, quality customer handling and smooth flow of generated income (Timur, 2018).

Though there are notable significance of tourism sector in Arusha tourists' destinations, a gap in knowledge concerning the validity of some determinants of service quality in the respective destinations exist (Singh & Singh, 2019). Most of the studies consulted have shown how responsiveness, service assurance and tangibles could have basis for expressing quality of service offered without inclusion of reliability and empathy determinants (Bove, 2019; Van, 2020; Wantara and Irawati, 2021). Based on the exceptional attributes of Arusha including its landscape, attractions and cultural heritage, this study ought to fill the available gap by confirming the rationale of reliability and empathy determining the quality of services provided in Arusha tourists destinations.

The study will be guided by the following questions;

- i. Is reliability a determinant of service quality in tourists' destinations?
- ii. Is empathy a determinant of service quality in tourists' destinations?

2.0 Literature Review

Reliability and Empathy as Service Quality Determinants

Unlike to many previous studies (Bhat, 2012; Ismail et al., 2017; Jansri et al., 2020; Ali, 2021) that did not concur with reliability and empathy determinants of service quality, this study presents the named variables as cornerstone for service quality in tourists' destinations. The inclusion of reliability and empathy in this study is for reducing the gap of excluding some of the service quality variables and to establish the base for practicability of the variables in service quality assessment.

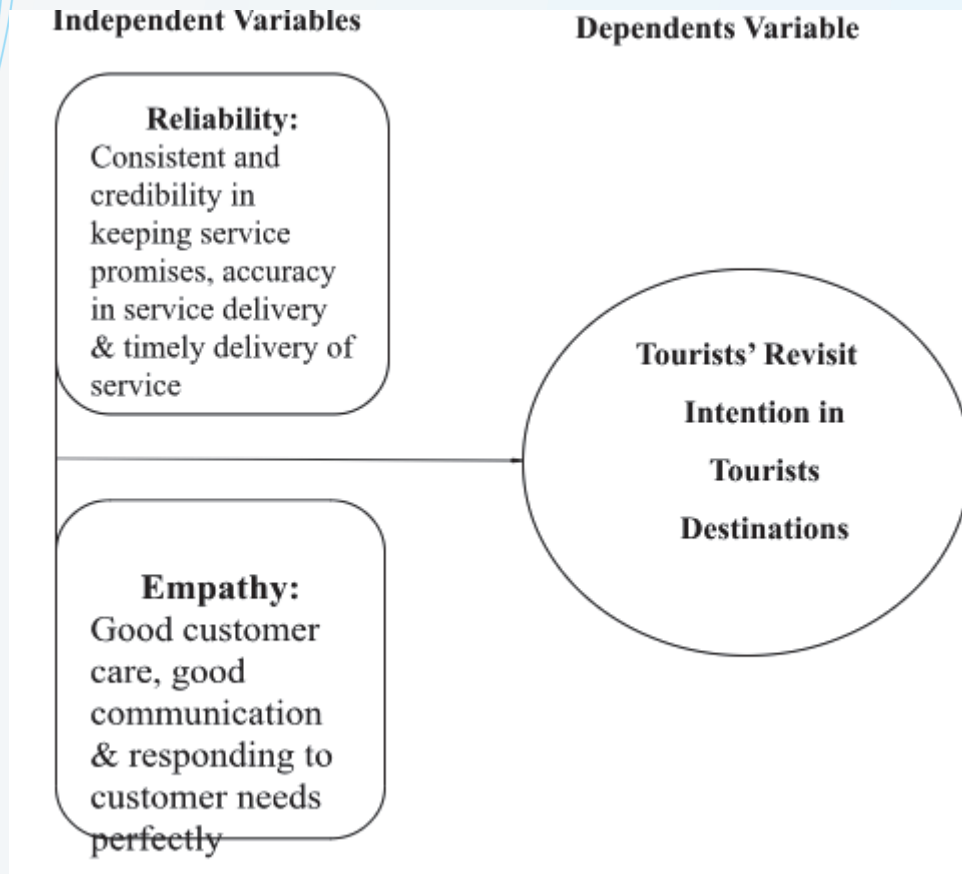
Reliability expresses the ability to deliver services precisely and dependably as promised by a provider at the outset of a relationship (Ali et al., 2021; Anwar & Ghafoor, 2017). This refers to the business's or service provider's capacity to supply clients with on-time, error-free deliveries. When properly addressed, reliability is a key component of service quality that affects how customers perceive the quality of the experience ultimately influences loyalty which plays important role in revisit intention (Rayma et al., 2019).

Empathy is the ability to provide caring and undivided attention to customers from service provider (Rayma et al., 2019). Empathy dimension represents elements such as staff effort and ability to understand customer desires in terms of approachability and sensitiveness during service encounter. This dimension in service quality plays a crucial role in making sure customers are enjoying the moments when contacting with the firm or service provider. In this dimension, customers get special attention and focus, which helps to increase the level of satisfaction and positive experience during service encounters.

In a study about tourism service quality affecting the satisfaction of foreign tourists, Tran and Van (2020) revealed that reliability had a positive and significant impact on service quality in the tourism sector. The significance of reliability was determined using the level to which satisfaction was attained. Wantara and Irawati (2021) examined the relationship and impact of service quality and destination image on customer satisfaction and revisit intention and revealed that reliability has a strong relationship with service quality, thus predicting its influence on service quality. Bove (2019) in the assessment of empathy for service on the basis of benefits, unintended consequences and future research which revealed that empathy has a significant impact on quality of services with an added advantage of being well engrooved to attain target performance.

2.1 Study Theoretical Model

Independent variables comprise reliability and empathy determinants as reflected in the Service Quality Model developed by Parassuraman et al. (1988). Tourist destinations present that, tourists' intent to return to a destination in the future, plans to return to a destination in the future, efforts to return to a destination in the future, interest in returning to similar destinations in the future, recommendations to others positively on destinations depending on the reliability of the services provided and the empathy practices.



Source: SERVIQUAL Model

The model explains the relationship between service quality determinants, which are reliability and empathy in revisiting the intention of customers in tourists' destinations. It explains the need for customers to recognize the reliability of service at tourist destinations, which must be accompanied by consistency and credibility in keeping service promises, accuracy in service delivery and timely delivery of such service, which in turn exercises service quality with an additional package of motivating customers to return for the same services anytime later. Furthermore, based on empathy, the model depicts that good care and paying attention to customers at tourists' destinations would attract their revisit intention and thus quality of service offered becomes valuable.

3.0 Methodology

3.1 Research Approach

This study used deductive approach to include service quality dimensions (reliability and empathy) The approach was appropriate in this study since it provided the study with accepted variables that intends to assess the quality of services in customer destinations.

3.2 Study Area

This study was conducted in Arusha tourist destinations, including Arusha National Park, Mount Meru, Momella Lake, lake Dulluti, Olduvai Gorge, Ngorongoro Creator, Ngurdoto Creator, Meserani Snake Parks and Chemka Hot Spring located in Arusha, Tanzania. The reason for choosing Arusha tourist destinations is that Arusha is the gateway to the majority of the tourist attractions in northern Tanzania, including Ngorongoro Conservation Area, Tarangire National Park, Lake Manyara National Park, Serengeti National Park, Mount Kilimanjaro, Olduvai Gorge and many others. The majority of travelers who fly to Kilimanjaro International Airport (KIA) get to Arusha as their primary destination point. Due to the presence of the African Court on Human and Peoples' Rights, the International Criminal Tribunal for Rwanda, and the East African Community in this city, Arusha functions as an important global diplomatic hub (TTB magazine, 2017). It serves as the starting point and hub for the northern Tanzania safari circuit and draws numerous visitors from across the world (MNRT, 2020).

3.3 Population

This study was conducted in Arusha tourist destinations including Arusha national park, Mount Meru, Momella lake, lake Dulluti, Olduvai gorge, Ngorongoro creator, Ngurdoto creator, Meserani snake parks and Chemka hot spring located in Arusha Tanzania. The reason for choosing Arusha tourist's destinations is that Arusha is the gateway to the majority of the tourist attractions in northern Tanzania including Ngorongoro Conservation Area, Tarangire National Park, Lake Manyara National Park, Serengeti National Park, Mount Kilimanjaro, Olduvai Gorge and many others. The majority of travelers who fly to Kilimanjaro International Airport (KIA) get to Arusha as their primary destination point. Due to the presence of the African Court on Human and Peoples' Rights, the International Criminal Tribunal for Rwanda, and the East African Community in this city, Arusha functions as an important global diplomatic hub (TTB magazine, 2017). It serves as the starting point and hub for the northern Tanzania safari circuit and draws numerous visitors from across the world (MNRT, 2020).

3.4 Sample Size

The sample of the study was obtained through the use of Cochran's (1997) formula. This is a formula for finding sample size when the population is infinite (that is one do not know exact number of the population). Equation 1 presents the Cochran's formula.

$$n = \frac{Z^2 * p * q}{e^2} \dots\dots\dots(1)$$

In the given formula above, n denotes sample size, Z denotes the critical value of a suitable confidence level (in this case 1.96 for a 95% confidence level), p denotes the proportion in the population of interest (in this case 50%), q is equal to 1-p, and e denotes the allowable margin of error which is frequently set at 0.05. The final sample size is 384 respondents as indicated in equation 2.

$$n = \frac{(1.96)^2 * 0.5 * 0.5}{0.05^2} = 384.16 \approx 384 \dots\dots\dots (2)$$

This study Targeted sample size of 384 but the actual number of participants (response rate) was 304 respondents.

Therefore, the final sample size was 304 respondents.

3.5 Data Collection Method

Questionnaire was the data collection method employed in this study. The use of questionnaire data collection method was for the easiness of collecting data from huge number of respondents within short time.

3.6 Data collection tools

This study used a Structured Questionnaire to collect data. Respondents were administered a questionnaire with closed-ended questions. The tool was used because it is cost-effective in terms of time, money, and energy, and it helps to collect adequate information in a dispersed population within the shortest time possible (Gurbuz, 2017).

3.7 Data Analysis

Inferential statistics methods were used to analysed study data. The correlational analysis presents the inter relationship between study variables. The factor analysis test was used to confirm how reliability and empathy influence customer revisits at tourism destinations.

3.8 Reliability Test

Replication, accuracy, trustworthiness, and consistency of the research are all measured by reliability (Chakrabartty, 2013). In order to gauge reliability, a coefficient was used. The coefficients are deemed relevant if they provide values greater than 0.7. However, if the coefficients are between 0.7 – 1, then they are regarded as extremely good (Madan & Kensinger, 2017). Reliability and empathy variables were tested by using Cronbach's Alpha and bared the following coefficients as results for each variable. Reliability had a coefficient of 0.719, which tests significant, and responsiveness index coefficient was 0.719, which tests significant too, and empathy was 0.835, which tests significant as well.

Table 1: Reliability Computations

Variable	Cronbach's Alpha	Items
Reliability	0.719	8
Empathy	0.835	9

Study findings present that reliability and empathy had significant values which were between 0.7-1 and thus indicating reliability of study data. The implication of the reliability results is that reliability and empathy variables were reliable to predict the quality of tourist destinations.

4.0 Findings

4.1 Statistical Tests

4.2 Model Goodness for Fit Test

The study assessed how well the model fit describes study data by statistically computing the required variables. The binary logistic regression model presents omnibus model tests where p value is less than 0.05 (0.000). This implies the model is statistically significant as chi-square (χ^2) test indicates that the model adequately describes data.

Table 2: Omnibus Tests of Model Coefficients

	Chi-square	df	Sig.
Reliability	81.539	6	0.000
Empathy	81.539	6	0.000

The findings obtained in the Omnibus test of model coefficient showed a fit of the model to the study data and thus implied a prediction that reliability and empathy would bring into quality of services at tourist destinations

4.3 Linearity Test

This subsection on linearity test in binary logistic regression assumes the existence of linearity of independent variables and log odds. Additionally, the independent variables were supposed to have a linear relationship with the log odds. Table below presents results that revealed there is significance linearity between reliability and empathy at $p=0.000$. Results implies reliability had linear relationship with empathy and thus could predict quality of services at tourist destination. Empathy linearity tested significant at $p=0.000$ against other variables (tangibles and assurance indexes). Furthermore, empathy had linear relationship with reliability and thus could predict quality of services at tourist destination. Empathy linearity tested significant at $p=0.016$.

Table 3: Linearity Test

	Reliability		Empathy	
	df	sig.	df	sig.
Linearity	1	0.000	1	0.000

Dev. from linearity	48	0.111	32	0.016
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4.4 Multi-Collinearity Test

The values of variance inflation factor (VIF) should be equal to or less than ten (10) so that it can be argued that there is no multi-collinearity between variables (Magoma et al., 2022; Epaphra, 2020). Results from Table 7 revealed that predictor variables, tangibles, responsiveness, and assurance, had VIF 1.758, 2.305 and 2.012, respectively, which is less than 10 with moderate VIF cannot affect the interpretation of individual effects of predictors. This suggests that there is no multi-collinearity existed between the variables and data collected. Also, the tolerance of predictor variables (tangibles, responsiveness and assurance) is more than 0.10 which is the minimum tolerance level acceptable. (Magoma et al., 2022; Epaphra, 2020). Hence there is no multi-collinearity between study independent variables.

Table 4: Multi-Collinearity Test

Variables	Unstand. Coef		Stand. Coef	T	Sig.	Collinearity Stat.	
	B	Std. Error				Tolerance	VIF
(Constant)	0.784	0.011		37.56	0		
Reliability	0.048	0.061	0.121	1.744	0.082	0.569	1.758
Empathy	0.076	0.053	0.125	1.686	0.093	0.497	2.012

4.5 Pearson Correlation Test

Pearson correlation presents a relationship between service quality variables (reliability and empathy) and tourists revisit intention in Arusha tourists' destinations. Reliability and empathy had positive association with tourists' revisit intention. However, the study established that the existed relationship was somewhat weak at 0.342. Study findings shows that tourist companies' service quality using reliability and empathy influenced tourist's revisit intention moderately based on tourists recommendations.

Table 5: Correlation Test

	Revisit intention	Reliability	Empathy
Revisit intention	1		
Reliability	0.342**	1	
Empathy	0.342**	0.342**	1

Empathy	.347**	.531**	.1
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** Correlation is significant at 1%

On the other side, tour company's service quality variables (reliability and empathy) associate with each other as described above. This implies all independent variables (reliability and empathy) had positive relationship and moderate association with each other.

4.6 Reliability and Empathy as Determinants of Service Quality in Tourism

In responding to the research questions guiding the undertaking of this study, a regression analysis was performed thereof. Reliability (consistency and credibility in keeping service promises, accuracy in service delivery & timely delivery of service) and empathy (good customer care, good communication, responding to customer needs perfectly) variables were tested to ascertain if they fit as determinants of service quality in tourists' destinations or not. Study findings for reliability presented a significance level of 0.006 while empathy presented 0.031.

Table 6: Regression Model on Reliability and Empathy Determinants

Variables	B	S.E.	Wald	df	Sig.	Exp(B)
Reliability	0.287	0.35	3.392	1	0.006	1.595
Empathy	1.107	0.27	10.667	1	0.031	3.343
Constant	1.434	0.155	76.528	1	0.001	4.638
-2 Log likelihood	205.915					
Cox & Snell R Square	0.235					
Nagelkerke R Square	0.385					
Hosmer and Lemeshow						
$\chi^2=4.72, P=0.787$						

Given the regression model above, the study findings indicated that reliability had positive and significance in entailing service quality and for that reason it has bases for enhancing intention for tourists destination revisits. The study findings were supported by Van (2020) who commented that reliability had positive and significant impact on service quality and enhanced intention for revisits among tourists as determined by the level to which satisfaction was enhanced. Furthermore, Wantara and Irawati (2021) added that reliability pose strong and relationship on service quality and thus predicting its influence on service quality. On empathy,

the study findings also established a significant and positive relationship with quality of tourist destination services. The study findings were supported by Bove (2019) in the assessment of empathy for service on basis of benefits, unintended consequences and future research which revealed that empathy has significant impact on quality of services with an added advantage of being well engrooved to attain target performance.

5.0 Conclusion

Contrary to most studies that isolated reliability and empathy in predicting service quality in the tourism sector, this study has established that reliability and empathy positively and significantly impact service quality and thus attract revisit customers to tourist' destinations. The study findings conclude that reliability and empathy being acceptable determinants of service quality in tourists' destinations and thus they contribute towards customers revisit intention. The study recommends that tourists' destinations should consider the practicability of reliability and empathy determinants so that to increase customer revisits.

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Global Value Chains and the Uptake of Innovative Technology in Vanilla Production among Women Smallholder Farmers in Bukoba Rural District, Tanzania.

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Abstract

Integration into the global value chain (GVC) is a crucial step for smallholder women farmers to attain its innovation inspiration. Despite geographical and technological limitations, a global investigation proved that GVCs are the stimulant of innovation across sectors, including agriculture, where firms have access to new markets, information, and technologies. These innovations have promoted the value chain of agriculture through the adoption of innovative technology in crop production, which has the potential to improve productivity and bring production efficiency to smallholder women farmers. Nevertheless, its potential research on the relationship between global value chains (GVCs) and the adoption of innovative technology by smallholder farmers is inconclusive. To this end, this study intends to investigate the global value chain and the uptake of innovative technology in vanilla production among women smallholder farmers in Bukoba Rural District, Tanzania. The study is quantitative in nature, involving a survey in data collection while utilizing a cross-sectional research design. Also, the multistage cluster sampling technique was employed; the study focused on wards with significant vanilla production and women's participation in agricultural cooperatives. Data analysis utilized descriptive statistics, including percentages, frequency, mean, graphs, and charts, using SPSS version 25. Results indicate high awareness (97.1%) and adoption (90%) rates of innovative technology among women smallholder farmers. Furthermore, it was revealed that the most adopted technologies in vanilla production were pollination technology (25.1%) and farm preparation technology (24.4%). Key findings highlight the significance of technology adoption in enhancing value-added production. The study underscores the role of factors such as export standards, government support, and technical assistance in motivating technology adoption. Moreover, it reveals that technology adoption positively impacts productivity and product quality, with farm preparation and the production process identified as major contributors to value addition. This research provides insights into the crucial nexus between GVCs, technology adoption, and the empowerment of women smallholder farmers in vanilla production.

Keywords: *Global Value Chain; Technology Adoption; Innovation; Small-holder Women Farmers*

1.0 Introduction

Developed and developing nations' economy Global value chains (GVCs) account for 70% of global trade, greatly impacting the dynamics of globalization and stimulating innovation by 5% (Cigna & Gunnella, 2022; OECD, 2022; Rub'inov', 2021). GVC, as a collaborative web of production among nations, have transformed how things are made, and now many businesses, including vanilla smallholder women farmers (VSWF), don't make everything within their own limits. Instead, they split up tasks and send them to different places and people where they can be done best, often through offshoring (Ambos *et al.*, 2021; Fernandez-stark & Gereffi, 2019b; Sébastien Miroudot and Håkan Nordström, 2019).

Additionally, in the 20th century, agricultural global value chains (AGVCs) have grown fast and reshaping the global production of food through their ability to coordinate and spread innovative technologies among local producers. For instance, it has enabled VSWF to focus on

areas of comparative advantage and facilitate broader dissemination of innovation activities (Cigna & Gunnella, 2022; Fieldsend *et al.*, 2021; Sunghun Lim, 2021). Hence, worldwide the leading center for vanilla plantation and export are Mexico, Indonesia, India, and other countries in the United States, (Chambers *et al.*, 2019), which implies the ability to focus on areas of competitive advantages facilitate innovative ability of producers such as VSWF (Rasib *et al.*, 2021).

The perspective of GVCs in Africa situated it in the upstream flow of the value chain as they export commodities as an input to the other manufacturing nations (Cigna & Gunnella, 2022). According to Avenyo *et al.*, (2022), GVCs have increased African firms' potential for innovation by disseminating innovative technologies and information. Despite this affiliation up to date evidence is limited on how GVCs contribute to innovation in Agricultural sector in Africa since the level of productivity is low (Steffens *et al.*, 2020), also, (Deng, 2020; Okpoko *et al.*, 2022), reported technological innovation as one of the barriers for growth of the agriculture and food industry. As a result, an insight related to how vanilla smallholder women farmers obtain innovation from GVCs is also limited due to a weak coordination of actors along the value chain. Although GVCs, have shaped many sectors including agriculture where innovative technology from effective producers and buyers can be obtained domestically which stimulates product innovation, and process innovation for smallholders as well as optimal cost consideration which makes Madagascar to be the global centre for vanilla production (Şerbănel, 2021; Shriver, 2020; Ahmad *et al.*, 2017)

In Tanzania, GVCs intervention in agriculture innovation is motivated by the fact that 70% of Tanzanians depend on agriculture and related value chains and most of them are smallholders who produce variety of cash crops such as vanilla (WB, 2019; Mufuruki *et al.*, 2017). For that case GVCs facilitate agricultural innovation where a number of agricultural frameworks such as agriculture sector development strategy (ii) and the national five-years development plan (phase II) have been developed to ensure revitalization of agriculture sector and reduction of postharvest losses (URT, 2021; WB, 2019). According to Thomas & Makundi, (2020) GVCs have imbedded innovation on production of horticulture crops that include vanilla where smallholder get access to market information and new farming technologies. Also, (Magesa *et al.*, 2019, 2020), reported diffusion of agricultural market information facilitate best farming practices.

Despite government initiatives, the agriculture sector—including vanilla production—continues to highlight the need for technological advancements and stronger connections to regional and international agricultural value chains (BoT, 2021; Finance, 2021; URT, 2021; WB, 2019). As a result, smallholder farmers are vulnerable to limitations of innovation, such as new farming technology and advanced storage facilities, which is justified by postharvest losses in agriculture, which account for 40% of harvested crops in which vanilla is branded (Maziku, 2019). Therefore, this infers that 100% of harvested crops, 40% of them do not meet market standards due to outdated farming technology and storage facilities. Though scholars proposed study on the Innovation System (IS) and lens of GVC (Jurowetzki *et al.*, 2018; Lema *et al.*, 2018; Montalbano *et al.*, 2018;), studies on GVCs and agriculture innovation as well as

related value chain are available (Avenyo et al., 2022; Deng, 2020; Sunghun Lim, 2021; Thomas & Makundi, 2020), however, (Rodriguez, 2018) opened that most AGVCs have isolated smallholder farmers. On that view, still there is a knowledge gap on global value chains and the uptake of innovative technology in vanilla production among women smallholder farmers.

Therefore, this research intends to contribute to the body of knowledge by discovering the given research questions:

RQ1: To what extent global value chain (GVC) has influenced the application of innovative technologies in vanilla production among women smallholder farmers?

RQ2: What challenges within the global value chain (GVC) hinder the adoption of innovative technologies in vanilla production among women smallholder farmers?

This study is important to all parties concerned with global production networks, smallholder farmers, policymakers, and the general public because value chains, which begin with research and development, are essential components of today's quickly evolving industrial landscape.

2.0 Literature Review

2.1 Theoretical Literature Review

The study is guided by the interactive model of innovation, rooted in Schumpeter's perspective on innovation and further developed by scholars like (Nelson, 1993; Roy Rothwell & Walter Zegveld, 1985). This model views innovation as a collaborative process involving internal, external, national, and regional innovation systems. Rothwell and Zegveld's interactive model, developed in the 1970s or 1980s, elucidates how innovations are acquired through channels such as training, technology, trade networks, and firm capabilities (Maxim Kotsemir, 2013; Rothwell, 1992, 1994).

The study underscores the importance of interactive innovation for smallholder women farmers, emphasizing the role of knowledge and technology spillovers in fostering innovation within the global value chain (GVC) by providing flexibility in farming practices (Schmidt *et al.*, 2022; Ambos *et al.*, 2021; Keresztes & Endresz, 2020; Gaddefors *et al.*, 2019). It highlights the necessity of interconnectedness between actors to facilitate innovations like adoption of new farming technology (Fieldsend *et al.*, 2021), which aligning with the study's focus on assessing how the GVC stimulate the uptake of innovative technology in vanilla production among smallholder women farmers. In essence, the study bridges the interactive model of innovation with GVC dynamics, illustrating how innovative technology contribute to innovation in the agricultural sector.

2.2 Empirical Literature Review

2.2.1 Global Value Chain and Innovation in Farming.

The idea behind Global Value Chains (GVCs) is to maximize the value of services offered to clients while reducing production costs by shifting manufacturing activities to regions with effective production systems and resources. GVCs in agriculture highlight the value of co-creation by fostering relationships between farmers that improve the sharing of cutting-edge technology and skills among farmers. These relationships encourage negotiation about production sharing, which eventually leads to more productive and efficient agricultural technology (Avenyo *et al.*, 2022; Rodriguez, 2018). On the other hand, GVCs contributed to innovative farming since innovation is defined as a farmer's ability to create new or improved products and apply new approaches by using newly introduced technology from counterparts. For this reason firms as well as VSWF participate in GVC strive to increase innovation capacity in order for them to reach global markets (Avenyo *et al.*, 2022; Barmuta *et al.*, 2022; Reddy *et al.*, 2021; Keresztes & Endresz, 2020).

2.2.2 Global Value Chain and Application of Innovative Technology.

According to the literature, GVC participation influences the spread of new technology in a variety of activities, depending on the type of firm where the activity is carried out. Additionally, it has been mentioned that the emerging GVC in production may result in the adoption of new technology that enhances functional upgrading and entails a shift to new and higher-valued-added activities throughout the chain by the small firms that are involved in niche markets (Geneva, 2022). In that case, since part of innovation for producers (VSWF) is the increase of productivity and product quality to achieve international certification criteria, the introduction of innovative technology in cultivation also helps to upgrade processes while involving producers such as vanilla smallholder women farmers in the value chain.

In a study of GVC and innovation among producers of avocado (Thomas & Makundi, 2020), it was pointed out that smallholder farmers involved in GVC have acquired new and improved farming technologies and knowledge, such as minimal use of chemical fertilizers and pesticides, through the use of natural fertilizer. Furthermore, farmers obtained innovation in production related to the production of organic avocados, resulting in an increase in productivity and quality of production, which secured the farmer's position in global markets. Similarly, (Valdes *et al.*, 2023) support this finding that certified seeds and record keeping were among of the technology adopted in horticulture cultivation. Though the study was specific to avocado farmers, the findings of this study are relevant for the current study, which focused on exploring GVC and innovation in vanilla smallholder women farmers since the study was conducted in Tanzania and in the horticulture categories where vanilla is included. Moreover, they might offer strategies for preventing supply chain disruption, which could have an impact on all steps of the vanilla production value chain, including producers, processors, distributors, and final consumers.

Likewise, a study of Technology and smallholder farmers' attachment to GVC revealed that farmers' participation in GVC has revolutionized the value chain capability through the adoption of new technology in production. The newly introduced technology boosted farmers' bargaining capability in the global supply chain since farmers have earned an innovative

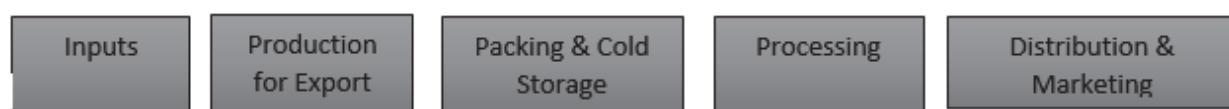
advantage of capturing new markets for their products (Kos & Kloppenburg, 2019). Also, (Digdoyo & Budiansyah, 2017) support this finding that the application of new technology in the production of vanilla, particularly processing technology like incubation and extraction techniques, has increased the value added to exported vanilla. In addition, It was then confirmed by (Alfredi, 2021), who revealed that vanilla associations help farmers embrace cutting-edge agricultural technology, including using natural pesticides and planting vanilla by combining it with other crops to improve organic vanilla, which in turn gives farmers access to international markets. Also, (Steffens *et al.*, 2020), innovative technology like processing and storage superbugs reduces post-harvest losses. The reviewed results had a significant impact on the current research because they showed that for VSWF to obtain a global competitive advantage through value-adding activities, it must engage in AGVCs. In doing so, they are able to obtain appropriate innovative technologies that support their efforts.

In addition, a study of GVC and firms' productivity revealed GVCs has promoted the higher rate of innovation to firms by being enhancing better product standards, and more efficient labor costs, which together help bring about technological progress in the company (Ledezma & Villavicencio, 2024). The results of this study align with the current research, as they are based on two-way traders, making them relevant for vanilla producers involved in export activities.

2.2.3 Barriers in the Adoption of Innovative Technology

The functionality of GVC framework for producers depends on global and local factors which means producers' innovation development such as adoption of new or improved technology is influenced by the location, capacity for upgrading, and structure of the production stages in GVC. Moreover, under GVCs the higher value generated is affected by the migration capacity of firms' and likewise to agricultural perspective that including vanilla value chain performance is influence by the adoption of technology (Valdes *et al.*, 2023; Buciuni & Pisano, 2021; Fernandez-stark & Gereffi, 2019). Similarly, once global agricultural production revived agriculture innovation, GVCs changed the agriculture value chain. It is now no more a one-country function but rather involves connections between other countries. These changes have therefore presented challenges for agricultural innovation, including improving the sustainability of agricultural production and the supply of agricultural products, as well as managing global agricultural production networks from a global viewpoint (Yang, X., & Liu, 2022). Therefore, it is crucial for this study to address this shortcoming by utilising input-output structure (global factors) to identify challenges associated with GVCs on the aspect of technology adoption for VSWF.

Figure 1: Input-Output Structure Flow.



Source: (Fernandez-stark & Gereffi, 2019a; Gereffi & Fernandez-stark, 2016; Karina Fernandez-Stark Penny Bamber Gary Gereffi Contributing, 2011)

Additionally, a study on coconuts from Fiji and the difficulties faced by producers in participating in GVC revealed that a barrier affecting smallholder farmers' ability to adopt new technologies is the interruption of communication flow throughout the coconut value chain that starts from inputs acquisition to output generation. It was discovered that communication flow presented information, and human resources with capabilities, and training sessions related to new farming technologies were the main problems. Nonetheless, among the important respondents who were interviewed were women, and they disclosed that one of their concerns was the absence of a farmers' organization that organized women for activities related to the value addition of coconuts (Lin, 2020). According to this perspective, the results are important for the current investigation since they reveal the GVC's attitude and the difficulties that farmers faced during the intervention.

Furthermore, Alfredi, (2021) discovered export market for vanilla farmers is affect by production and market challenges. The study found that limited availability of certified seeds, theft of vanilla cuttings, and inadequate knowledge of fertilization, storage, and curing training, made it difficult for vanilla farmers to access the worldwide market, which in turn led to a limited uptake of novel technology. The results of this study support the assertion that producers participating in GVC are not connected to vanilla processors on international marketplaces, which imposes limitations such as certificate requirements, reactive orders, price volatility, and an unstable market.

3.0 Research Methodology

3.1 Study Area and Target Population

The study was carried out in Tanzania's Bukoba rural district, which is a prominent hub for vanilla farming over the region and it had large number of farmers who are engaged on GVC. The target population for the study were all women smallholders who are registered under MAYAWA co-operative and agents of vanilla associations who were involved in the vanilla value chain. Women smallholder farmers were chosen as the focus of this study because, although they represent only 22% of vanilla farmers in the area, they play a crucial role in essential processes like pollination. Despite their contribution and knowledge within the global value chain (GVC), they face unique challenges that limit their participation. Studying this group allows us to assess both the extent of their involvement and the specific obstacles they encounter within the GVC. Understanding these barriers is vital for promoting a more inclusive and effective value chain, especially considering the potential for increased productivity and economic empowerment if more women participate actively in vanilla production. Additionally, as farmer associations support smallholder farmers in the production and marketing of produce as well as in the adoption of modern agricultural technologies, agents from those associations were also involved. Moreover, the vanilla crop was used as it is a cash crop quickly integrated within GVC; meanwhile, the challenge of low productivity still prevails. (Yao, 2023; Israel *et al.*, 2022; Sisifa, 2021; Gerald, 2020).

3.2 Research Design and Approach

Furthermore, the study deployed a cross-sectional research design since it enables the collection of information from various respondent groups at one time. The adoption of novel technology acquired from GVC was assessed through the application of a quantitative approach, which allowed for the collection of quantitative information in order to assess how GVC has enhanced the uptake of innovative technology in the production process. Correspondingly, data were gathered through the use of a survey method in which the tool for data collection was a structured questionnaire since the results from the questionnaire survey can easily be quantified (Flick, 2020; Thakur, 2021).

3.3 Sample and Sample Process

The sampling technique employed to select a sample of smallholder women farmers was multistage-cluster sampling, conducted in three stages. Initially, the Bukoba rural district was purposefully chosen due to its prominence as the primary agricultural hub in the Kagera region for vanilla production since vanilla contributes 62% of the household annual income of farmers. Subsequently, the district was subdivided into wards; Kasharu, Maruku, and Nyakato were specifically chosen to represent other women small-scale farmers in the district. These wards were selected because they provide a global market network for women smallholder producers, with a significant number of vanilla farmers being members of MAYAWA, which facilitates access to technical support for adopting and utilizing new farming technologies.

Within each ward, the villages were further divided. Stratified random sampling was employed to select sections of the villages to participate in the study. Villages were stratified based on productivity and the registration of village women farmers under MAYAWA, ensuring homogeneity among the selected villages. The villages selected from the wards were Maruku (comprising Maruku and Bukairuka villages), Nyakato (consisting of Kiilima and Ibosa villages), and Kasharu (encompassing Kasharu and Butainamwa villages) (Gerald, 2020; Muzanila & Assenga, 2022).

Stratification of women who cultivate vanilla in each village was undertaken to determine the sample size. Subsequently, the census approach was utilized to identify all participants within the sample size in each village. Key informants from each village were then randomly selected with the assistance of local administration.

3.4 Sample Size

According to Gerald, (2020) the selected village had 414 total population of vanilla farmers, whereby 22% are women which means women who crop vanilla were 92. The study's focus is on women vanilla farmers specifically because, as the statistic indicates, they represent a minority in this sector. Therefore, the intent is to investigate the extent of involvement and unique challenges that may limit wider participation among women in vanilla farming. Understanding these factors could provide insights into how to increase women's involvement in vanilla production and enhance their economic opportunities in agriculture. Hence, distribution of sample size was done using a formula introduced by Kothari (2015).

$$n = \frac{Z^2 \cdot p \cdot q \cdot N}{e^2(N-1) + Z^2 \cdot p \cdot q e^2(N-1) + Z^2 \cdot p \cdot q}$$

$$n = \frac{1.96^2 \times 0.5 \times (1-0.5) \times 92}{0.05^2(92-1) + 1.96^2 \times 0.5 \times (1-0.5) 0.05^2(92-1) + 1.96^2 \times 0.5 \times (1-0.5)} = 75$$

Where:

p – stands for a sample proportion, $q = 1 - p$; thus, to have an assurance of the adequacy of the sample, the study opt to use 0.5.

e – is the precision level, where the study used +/- 5%.

Z – is the confidence level, whereas a study used 1.96 for the purpose of obtaining a 95% confidence level.

N - total population

n – Size for sample size

Consequently, the study considered 75 sample sizes for vanilla smallholder women farmers to be representative of the population. However, 83 informants were chosen, of whom 75 were women smallholders, and 8 others were key informants.

Besides, sample size for proposed stratum was determined by following formula Kothari (2015).

$$n_{pe} = n(N_{1,n}|N)(N_{1,n}|N)$$

Where

$n.p$ –Number of elements selected from the stratum, n – Sample size, N_1N_1 - proportion of the population and N – total population.

The study accepted 1: 2: 3 as a proportion of the investigation in three cases: $N_{1...n}N_{1...n} = 1, 2$, and 3

Therefore, $n.p = 75 \left[\frac{1}{6} \right] \left[\frac{1}{6} \right] \dots n$, and so far, the proportion of sample size in each stratum was given in Table 1 below.

Table 1: Sample Frame (n = 83) as of, Kasharu, Maruku, and Nyakato wards

Villages	Women Smallholder	Associations' Agents	Sample Size
Kasharu, Butainamwa	12	2	14
Maruku , Bukairuk	38	3	41
Kiliima , Ibosa	25	3	28
Total	75	8	83

3.5 Data analysis

In data analysis, descriptive statistics was utilized to analyze collected data with the help of Statistical Package for Social Sciences (SPSS) version 25. Descriptive statistics included measures like percentages, frequency, mean, graphs, and charts to give a description of the

variables observed in the field. To validate data collected, survey tools used to collect data were tested for accuracy in measuring the study's variable. Also, test-retest reliability was conducted to check data reliability where the same survey tool was administered to a subset of respondents twice over a short period.

4.0 Finding and Discussion

4.1 Demographic Information

The analysis demonstrated that 52.9% of respondents were VSWF aged range between 36-45yrs, while minimum participation was 7.1% for women aged above 60yrs. Also, 61.4% were married women farmers, and the lowest participation was 7.1% of divorced women farmers. About 67.1% of respondents had a primary level of education, while 5.7% had a university education. This implies that the vanilla GVC and adoption of innovative technology in farming practices is influenced by women with the active age in which marital status has a greater percentage for them to participate in cash crop production and adoption of new farming technology in order to earn higher yield since married household depend on each other for household supply. Consequently, women with a higher level of education were not interested in agricultural activities. These findings aligned with those of Abdalla (2021) and Gerald (2020), who stated that most vanilla and cash crop growers were energetic once, in which support from both husbands and files had a positive impact on productivity regardless that most the farmers had primary education. Similarly, Alejandro Lavopa, (2018); and Lorenz & Kraemer-mbula, (2022), supported that education is indispensable tool in innovation stages if it reaches a right people. In this view it can be argued that education on the context of technology adoption has stronger relationship with the domestic value added and in one-way influences disseminations of the innovative technology introduced by GVC.

4.2 Global Value Chain and Adoption of Innovative Technology

This section report varied findings on application and adoption of innovative technology in vanilla cultivation. Furthermore, the investigation inquires the awareness and the extent of adoption of innovative technology as one of the way agricultural GVC is altered to obtained value added processes and products.

Table 2: Vanilla Women Farmers' Awareness of and Adoption of Innovative Technology (N=70)

Variables	Parameters	Frequency (n=70)	Percent (n=100)
Knowledge of Innovative Technology	Yes	68	97.1
	No	2	2.9
Adoption of Technology in the Previous Crop Season	Yes	63	90.0

No

7

10.0

Source: Survey data (2024)

In the table 2 above findings demonstrated that 97.1% of VSWF were well informed with the innovative technology applied on the cultivation of vanilla as well as vanilla global value chain in the export markets, while 2.9% were not aware. Additionally, 90% them adopted innovative technology that boosted value added produce as well as market penetration, while 7% did not adopt new production technology. This means that substantial portion of VSWF have fused and are aware of innovative agricultural technology brought by GVC, and producers may expand vanilla productivity by incorporate technological equipment into their farming activities. Besides, these outcomes highlight the interactive model, emphasizing that technology spillover is essential for fostering innovation. Effective innovation starts from the organization's own context to regional context since practically farmers were exposed to external innovations through global networks. These findings concur with those of Marhaeni, (2019), that 61% to 80% of the respondents who produce vanilla had good productivity as a result of technology adoption. Likewise, Lorenz & Kraemer-mbula, (2022), opened that the first step in adopting technology is being aware of it. Therefore, it is argued that the nation's openness to new technology strength the ability of GVCs to contribute on producing quality and certified vanilla that fits for standards of the global markets. As a matter of fact, that GVCs involves transfer of technology, knowledge, and practices across different production phases, farmers' willingness and aptitude on technologies adoption are essential for any advances that may be made inside the GVC.

In addition, the research questions aim to provide an understanding of the technology that has been accepted and to infer the participants' comprehension of this novel technology adoption. Table 3 presents the research results on the adoption of innovative technology.

Table 3: Technology Adoption Rates and Share (Multiple Responses N=70, Percent N=100)

Characteristics	Variables	Responses		Percent of Cases
		N	Percent	
Innovative Technology Adopted ^a	Fertilizer application	60	22.1%	85.7%
	Farm preparation	66	24.4%	94.3%
	Pollination	68	25.1%	97.1%
	Paste management	66	24.4%	94.3%
	Record keeping	11	4.1%	15.7%

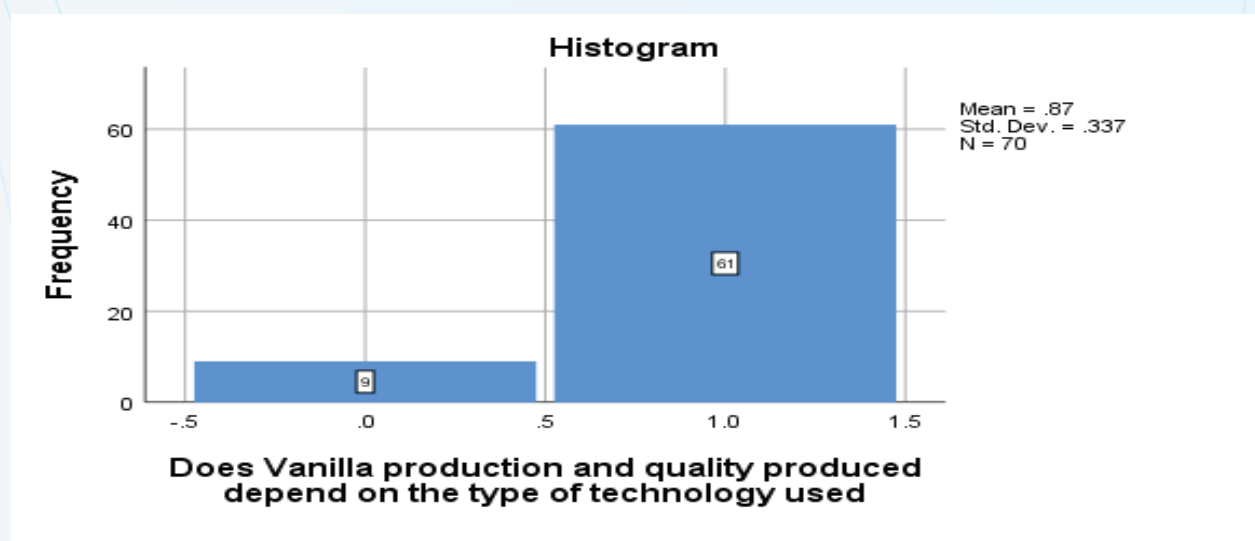
a. Dichotomy group tabulated at value 1.

Source: Survey data (2024)

Accordingly, Table 3 above's findings show that women farmers stated that pollination processes—which accounted for 68 respondents, 25.1% of the responses—were the most often used innovative technologies. These were followed by farm preparation and paste control which accounted for 66 respondents, 24.4% of the responses, fertilizer application which accounted for 60 respondents, 22.1% of the responses, and a few respondents mentioned record-keeping which accounted for 11 respondents, 4.1 percent of responses. This, imply a difference in the application of cutting-edge technology, which could have a major impact on supply chain value addition. In this regard for smallholder women farmers to increase innovation in vanilla production, the pertinent technologies are: farm preparation, pollination, fertilizer application, and paste management. Therefore, this data supports the interaction model's commonly held theory that technology acts as a significant stimulant. These results corroborated those of Yao, (2023); Alfredi, (2021), who discovered that essential technological improvements in vanilla production that producers dealt with in a workday per activity included manual pollination, pruning, fertilizing, and disease management. Additionally, Thomas & Makundi (2020) found that the majority of producers of spices prepared their farms by plantation, fertilization, and irrigation. Despite these technological advancements, Yao (2023) pointed out that vanilla growers have also adopted other cutting-edge methods like inspecting and eliminating sick plants, managing shoots, keeping weeds out of mulch, composting, and trimming. Information from a survey indicates that GVC has used technology to enable small producers to participate in the vanilla value chain in a variety of ways, including source traceability system.

Moreover, the inquires for vanilla productivity based on applicable technology was among of paramount attribute of the study so as to elucidate the extent to which GVCs embark production activities in agriculture. Figure 2 below presented findings of vanilla Productivity and quality in relation to technology adopted.

Figure 2: Respondents' Opinions Regarding the Quality and use of Technology in Vanilla Production



According to Figure 2's findings, 61 respondents, with a mean of 0.87 replies, indicated that most respondents generally agreed that technology has an impact on the quality and production of vanilla. Also, the standard deviation of 0.337, indicate that there is some variation in responses, but most respondents are clustered around the mean. This implies that approximately 87% respondents agree that the type of technology used significantly affects vanilla production and quality. Thus, improving technology in vanilla farming could positively influence outcomes in terms of production and quality. As a result, this outcome validates the existing interactive theory that technology enhances producers' capacities in a manner appropriate to their innovation environment. This result aligns with those of Marhaeni (2019) finding that technology increased vanilla productivity. In this way, it can be argued that GVC has a larger percentage of improved quality and productivity for vanilla grown by smallholder women farmers.

4.3 Global Value Chain's Challenges and Adoption of Innovative Technologies

Table 4: Challenges Hindering the Adoption of Innovative Technology (Multiple Responses n=70, Percent n=100)

Variables	Parameters	Responses		Percent of Cases
		F	Percent	
Challenges in GVCs ^a	Inability to Access the Market	60	32.7%	84.9%
	Lack of awareness on packaging and storage	61	31.3%	88.0%
	Lack of trainings in using the technology	64	33.9%	91.4%
	Lack competition	3	1.6%	4.3%
	Restrictive regulations	1	0.5%	1.4%
Total		189	100.0%	270.0%

Source: Field survey data (2023)

As evidenced by the multiple responses provided by respondents, Table 4 above reveals that the main reasons given by 64 (33.9%) smallholder women farmers for not using innovative technology in the production and value addition of vanilla and affect their GVCs participation are lack of training in using such technology, 61 (31.3%) lack of awareness regarding packaging and storage, and 60 (32.7%) difficulty accessing the market, while 3 (1.6%) respondents cited lack of competition in the market. This suggests that smallholder women farmers' main challenges to innovatively integrating into the GVC include a lack of technical expertise, a lack of knowledge about embedded technology in product packaging and storage, and restricted access to the global market. Furthermore, these results are consistent with the interaction theory. These findings are in line with those of Abhishek (2019), who found that the barriers to small producers' participation in the GVC were their ignorance of value addition and their unfamiliarity with the necessary conditions to enter the international market.

Similarly, Lorenz & Kraemer-Mbula (2022) contend that businesses' ability to function in a market that is conducive to the adoption of cutting-edge technologies is hampered by a lack of skills and competencies to accept and apply technology. Wherein, Yao (2023) argued that among the benefits received by vanilla farmers in GVC were knowledge, and learning skills, these suggest that effective GVC intervention in agriculture must be started with the farmers' willingness, and learning programs. Therefore, it is argued that within the global value chain (GVC) trade facilitation is considered an essential strategy for smallholder women vanilla farmers, as it helps address multiple challenges such as commercialization, transportation difficulties, access to market information, technology adoption, and capacity building.

5.0 Conclusion

The results indicate that GVCs play a vital role in boosting the adoption of innovative technology to enhance vanilla production among smallholder women farmers. High awareness (97.1%) and adoption rates (90%) of new technology highlight its positive impact on production practices, particularly pollination techniques, farm preparation, and paste control. However, the lack of training in using innovative technology (91.4%) remains a significant barrier to fully leveraging its benefits. Overall, technology-driven innovation significantly boosts both yield and quality in vanilla production.

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Factors Influencing the Tax Compliance among VAT Registered Traders in Tanzania

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Abstract

Aim of the study is to assess the variables influencing tax compliance among Tanzanian VAT-registered traders. In order to increase the theory's capacity for explanation, the Diffusion of Innovation Theory has been integrated with the Economic Deterrent Theory on Tax Compliance by adding tax knowledge as a new variable. To gather data, the survey approach was used, and questionnaires were distributed. 400 respondents were chosen from the target population to make up the sample. A multivariate linear regression model was employed on analysis of data. The study's findings demonstrated that the risk of an audit discovery and tax rates have a significant influence on Tanzanian business owners' tax compliance. It was discovered, nevertheless, that tax compliance was unaffected by tax knowledge. These findings support the economic deterrence theory of tax compliance and emphasize the importance of

tax rate and detection likelihood in affecting Tanzanian taxpayers' tax compliance. Furthermore, the incorporation of tax knowledge as a construct in the study model, grounded on the diffusion of innovation theory, implies that Tanzanian tax authorities ought to investigate additional determinants beyond tax knowledge to augment tax adherence among entrepreneurs.

1.0 Introduction

According to Annuar et al. (2018), all governments worldwide are funded by tax revenues that are collected in accordance with current tax legislation. To finance public goods, however, the primary difficulty is reaching the predetermined objective while upholding the maximum level of taxpayer self-evaluation and voluntary compliance (Annuar et al. 2018). Because more tax is paid by taxpayers when there is better compliance, compliance on tax payment is therefore a crucial factor for all tax administration and government (Nkundabanyanga et al., 2017).

There is still insufficient tax compliance globally, particularly in developing nations, despite several policy initiatives and tax changes implemented by governments due to widespread tax evasion (Adu & Amponsah, 2020). However, many developing nations have lower tax rates, fines for underpayment, subpar tax audits, and taxpayer ignorance of taxes, all of which lead to lower compliance (Ali et al., 2013).

Many governments around the world have implemented tax administration improvements in an effort to increase in obtaining revenue; these reforms have been combined with development in technology (Adu & Amponsah, 2020). Considering how many tax reforms have been implemented in various nations, wealthy nations have made significant progress (Night & Bananuka 2019). For instance, taxpayer compliance through the self-assessment system has resulted in successful tax compliance experiences in industrialized nations such as Malaysia, Pakistan, Australia, New Zealand, and the United Kingdom (Annuar *et al.* 2018). But even with the same tax self-assessment framework, there are still not enough taxpayers in Africa complying with the laws (Kira, 2016).

There are various theories and studies which have been applicable on tax compliance in the context of developed countries (Wadesango *et al.*, 2018). In addition, the popular theory had been applied in many studies includes, the Economic deterrence theory, which guided this study (Allingham & Sandmo, 1972)

Previous studies done by (Daffi & Chille, 2023; Torgler, 2003; Elly, 2015; Ikasu, 2014; Mboma, 2012; Fjeldstad et al., 2020; Levin & Widell, 2014) in Tanzania has indicated that, despite the major tax reforms which has taken place in Tanzania, traders are still non-complying on properly payment of their tax. The reluctance and resistance exhibited by traders raises some concerns about the reasons for tax avoidance. However, given the mixed result, research on the reasons influencing Tanzanian tax noncompliance is still necessary, regarding the factors influencing of tax rate, penalties on non-tax payment, probability of detection on audit, tax knowledge to traders on tax compliance in Tanzania.

However, there are paucity of studies on the effect of tax rate, penalties on non-tax payment, probability of detection on audit and perceived tax knowledge to traders on tax compliance in Tanzania (Chalu & Mzee, 2018; Daffi & Chille, 2023). However, it is theoretically still unknown which are the factors influence tax compliance in Tanzania. With these factors therefore, there is a need of this study to fill the gap.

Thus, this study set out to assess the factors influencing tax compliance in Tanzania. In order to achieve this goal, the researcher integrated the Social Cognitive Theory with the Economic Deterrent Theory on Tax Compliance, adding a construct called tax knowledge that originated from the diffusion of innovation theory. This increased the theory's explanatory power in evaluating the factors that affect tax compliance in Tanzania

2.0 Literature Review and Hypotheses

2.1 Influence on Tax Rate on Tax Compliance

According to the tax payer, the higher the tax rate, the lower the payment of tax and hence less compliance (Allingham & Sandmo, 1972; Fjeldstad et al., 2020; Ya'u et al., 2020). It has been observed that the business production are affected by high tax rate (Kalita & Barua 2019; Saka et al., 2019) Consequently, the following hypothesis has been investigated:

H1: There is a positive relation between high tax rates and tax compliance.

2.2 The Influence of Probability of Detection on Audit on Tax Compliance.

It has been noted that where there is high chance of being detected by audit, as the taxpayer declare more income and hence pay more tax (Allingham & Sandmo, 1972; Kircheler *et al.*, 2010). Thus, the following hypothesis had been tested.

H2: The likelihood of detecting a non-audit is positively related to tax compliance.

2.3 The Influence Tax Knowledge to Traders on Tax Compliance.

Where the taxpayer show high compliance level by being aware on the tax laws and other tax information, it is refers as tax knowledge (Bornman and Ramutumbu, 2019; Lois et al. 2019; Indrijawati, 2019). Tax knowledge is the mental and attitude perceptions level on which the taxpayers become aware and understand what the tax authorities and the tax laws need them to do, especially on tax payment and return filling, which will make them comply accordingly (Adu & Amponsah 2020; Bornman & Ramutumbu, 2019). For that reason, the present investigation examined the following hypothesis.

H3: Tax knowledge perception by traders is positively related with Tax compliance.

a. Methodology

3.1 Examine the Sample and Population

The business VAT registered traders in the Dar es Salaam Region who utilize EFD and are registered with TRA made up the study's population. Dar es Salaam City selection can be attributed to its status as a commercial hub with a substantial number of firms (URT, 2023). With the exception of customs and port collections, the city collected more than 55% of the total tax collection for the years 2016, 2017, 2018, 2019, and 2020. This tax collection consisted of direct and indirect taxes for the entire nation (URT, 2021).

With traders dispersed throughout the municipality and city of Dar es Salaam, the sampling method employed on the study region was multistage cluster sampling (Saunders et al 2012). The study observed the relationship between tax compliance as the dependent variable and the tax penalties, tax rate (TR), probability of detection (PD), tax penalty (TP), and tax knowledge (TK) as independent variables.

A questionnaire was used to gather primary data; 400 questionnaires were sent out, and 396 of them were returned by respondents. The pilot study was carried out prior to the questionnaires being disseminated for data collection in order to improve data collection and ensure the instruments acquire the required data (Kothari & Carg, 2014). For questionnaire improvements, 25 respondents participated in the pilot study as noted on the required threshold of respondents to participate in a pilot study (Johanson & Brook, 2010). The questionnaire was then given to the appropriate respondents following the improvement.

The observable variables were ranged from 1 strongly disagree to 7 strongly agree were measured using a seven-point Likert scale. A total of six items were adapted from Bornman & Ramutumba (2019) to measure tax compliance, tax rate, probability of a trader being detected during a tax audit for non-compliance, and tax compliance. Five items were adapted from Inasui (2019); four items were adapted from Gilligan & Richardson, (2005), and Ya'u et al., (2020).

3.2 Data Analysis

3.3 The Outcome's Reliability Test

To measure internal consistency, Cronbach's alpha was used to test the reliability of each variable's scale. The outcome was when the alpha value was equal to 0.7 or higher; it can be inferred that the questionnaire items fit in explaining the construct; hence, the minimum alpha value should be 0.7. (Saunders et al., 2012). The measurement scale appeared to be appropriate in assessing the constructs, as evidenced by the results, which showed that Cronbach's alpha varied from 0.836 to 0.849, which were above the minimum limit of 0.7, which then permitted minimal cut-off point (Saunders et al., 2012).

Factor analysis was carried out to determine whether the items were measuring the same construct. The sample's adequacy was assessed using the findings of the Kaiser Mayer Olkin (KMO) and Bartlett's Test for Sphericity (BTS) tests. For a dataset to be regarded adequate for factor analysis, the KMO generally needs to be higher than 0.6 and the BTS values need to be significant (Basto and Pereira, 2012). Given that BTS had a significant value of 0.001 and KMO had a value more than 0.6, the dataset was appropriate for factor analysis.

Table 2.0: Kaiser Mayer Olkin, Reliability and Adequacy of the Sample

Construct	Reliability Cronbach.s Alpha	Item	KMO	Significance level
Tax Compliance (TC)	0.836	05	.801	0.000
Tax Rate (TR)	0.837	04		
Probability of Detection (PD)	0.849	04		
Tax Penalty (TP)				
Tax Knowledge (TK)	0.849	06		

Source: Field data (2023)

3.4 Explanatory Factor Analysis Findings

To find out if all of the variables in each category tax compliance (TC), tax rate (TR), probability of detection (PD), tax penalty (TP), and tax knowledge (TK) represent the latent variable of TC, TR, PD, and TK, an exploratory study was conducted. After taking into account the extraction and rotation techniques used, the study found that just one component per construct was recovered from the linked variables, eigenvalues, factor loadings, and intercorrelation between variables are all taken into consideration

To find out if all of the variables in each category tax compliance (TC), tax rate (TR), probability of detection (PD), tax penalty (TP), and tax knowledge (TK) represent the latent variable of TC, TR, PD, and TK, an exploratory study was conducted. After taking into account the extraction and rotation techniques used, the study found that just one component per construct was recovered from the linked variables, taking into account the intercorrelation between variables, eigenvalues, and factor loadings.

TC		TR		PD	
Variable	Factor Loadings	Variable	Factor Loadings	Variable	Factor Loadings
TC1	0.804	TR1	0.765	PD2	0.633
TC2	0.772	TR3	0.696	PD3	0.617
TC5	0.537	TR2	0.732	PD1	0.637
TC4	0.638	TR4	0.581	PD4	0.586
TC3	0.717	TR1	0.765		
TP		TK			

Variable	Factor Loadings	Variable	Factor Loadings
TP2	0.695	TK6	0.689
TP3	0.604	TK5	0.704
TP1	0.73	TK1	0.73
TP2	0.601	TK3	0.721
		TK2	0.726
		TK4	0.718

Table 3.0 : Factor loading for TC, TR, PD, TP and TK

Source; Field work (2023)

Principal Component Analysis is the extraction method used.

Rotation Technique: Kaiser Normalization using Varimax

For every construct, a single component was taken out of the associated variables.

There was no rotation of the solution (no rotated component matrix).

a. Results from correlation analysis

To determine how strongly independent and dependent variables are associated, correlation analysis was used. Table 4.0 presents the correlation between independent and dependent variables. It indicates that all independent factors have a significant association with the dependent variable, Tax compliance (TC), ranging from $r=-0.006$ to $r=0.383$ at $p<0.05$.

Table 4.0 Inter Correlation among Variables

Correlations Coefficients					
		TC	TR	PD	TK
Pearson Correlation	TC	1.000	.375	.383	.209
	TR	.375	1.000	-.006	.352
	PD	.383	-.006	1.000	.061
	TK	.209	.352	.061	1.000
Sig. (1-tailed)	TC	.	.000	.000	.000
	TR	.000	.	.452	.000
	PD	.000	.452	.	.113
	TK	.000	.000	.113	.
N	TC	396	396	396	396

	TR	396	396	396	396
	PD	396	396	396	396
	TK	396	396	396	396

Correlation is significant at 0.05; **Source;** Field work (2023)

4.1 Multiple Linear Regression Analysis Results

Multiple linear regression analysis was used to assess the study objectives in light of the hypothesis presented in this investigation. Table 5.0 showed an F-statistic value of 53.848, indicating the model's fitness, which was significant at $p < 0.001$. Tax compliance was explained by all components, suggesting that the model was a good match for the study dataset. The coefficient of determination (R squared) of 0.292 and the modified R squared of 0.286 indicate that the independent factors included in the study explained about 29% of the variance in the dependent variable, or tax compliance.

Table 4.0 ; Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.540 ^a	.292	.286	3.20539	.292	53.848	3	392	.000

a. Predictors: (Constant), TK, PD, TR

b. Dependent Variable: TC

Figure; Regression Coefficients

Source; Fieldwork (2023)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Partial	Tolerance	VIF

1	(Constant)	3.631	1.157		3.139	.002	1.357	5.904					
	TR	.392	.050	.356	7.833	.000	.294	.491	.375	.368	.333	.876	1.142
	PD	.522	.058	.381	8.945	.000	.407	.636	.383	.412	.380	.995	1.005
	TK	.058	.043	.061	1.334	.183	-.027	.143	.209	.067	.057	.872	1.146

Table 6.0: Multiple Regression Analysis

Source; Fieldwork (2023)

4.2 Effect of Tax Rate on Tax Compliance

According to the results, there is a 0.356 (95% CI; 0.294, 0.491) rise in tax compliance (TC) at $P < 0.000$ for every unit measure increase in tax rate (TR). As a result, tax rate (TR) significantly and favorably affects tax compliance (TC). The alternative hypothesis, according to which the tax rate has an effect on tax compliance, is supported, and the null hypothesis is rejected.

4.3 Effect of Probability of Detection on Tax Compliance

According to the results, at $p = 0.001$, a unit increase in Probability of Detection (PD) has a 0.381 (95% Confidence Interval; 0.407, 0.636) value. Because Probability of Detection (PD) influences tax compliance in a positive and significant way, the null hypothesis is disapproved and the alternative hypothesis is accepted.

4.4 Effect of Tax Knowledge on Tax Compliance

According to the results, there is a 0.061 (95% CI: -0.27, 0.143) rise in tax knowledge (TK) for every unit increase at $p = 0.183$. Because tax knowledge (TK) has no appreciable effect on tax compliance, the alternative hypothesis is rejected and the null hypothesis is accepted when the P value is greater than 0.005.

5.0 Discussion

The findings suggest that tax rates positively impact taxpayer compliance. This implies that the alternative hypothesis that there is a positive relationship between high tax rates and tax compliance in Tanzania is accepted, and the null hypothesis is rejected.

This is consistent with the expectations of the Economic Deterrence Theory, which holds that people are more likely to pay taxes when the costs of not paying them, such as higher tax rates and a higher chance of being detected, are greater than the possible rewards of not paying them (Gemmell 2016).

The results are consistent with research by Fjeldstad et al. (2020), Saka et al. (2019), and Ya'u et al. (2020) that showed tax rates have a major positive influence on tax compliance. This suggests that tax compliance rises in tandem with tax rates. This suggests that Tanzanian business owners are prepared to complete their tax returns and pay their taxes as long as the tax rate is reasonable and compliant with national legislation (URT. 2022).

These results conflict with those of the Mas'ud et al. (2014) study, which found no relationship between tax rate and tax compliance. Findings, however, also point to a strong positive influence of discovery probability on tax compliance. This suggests that the null hypothesis is rejected and that the alternative hypothesis that there is a positive link between Tanzanian tax compliance and the probability of detection is supported. These results, however, are in line with a 2019 study conducted in Nigeria by Ya'u et al., which found that the likelihood of detection significantly improves tax compliance. The results also align with a study conducted in Sri Lanka by Jayawardane (2017), which found that tax compliance is influenced by the likelihood of detection.

This is consistent with the expectations of the Economic Deterrence Theory, which holds that people are more likely to pay taxes when the costs of not paying them, such as higher tax rates and a higher chance of being detected, are greater than the possible rewards of not paying them (Gemmell, 2016). When business owners believe that they will be found out for their tax avoidance and that they must comply with tax payment, the likelihood of being caught through a tax audit eventually plays a significant influence.

The results show that tax knowledge does not significantly influence tax compliance in Tanzania; thus, the null hypothesis, which holds that there is no relationship between tax knowledge and tax compliance in Tanzania, is supported, and the alternative hypothesis is not. These results confirm that the economic deterrence theory is not supported in developing nations, even in the face of some rules and sanctions. This may not be due to a lack of awareness on the part of taxpayers (Vincent, 2021). The diffusion of innovation theory, which emphasizes the significance of knowledge on individual acceptance of the service or goods, does not align with the findings.

Nonetheless, the feeble correlation between tax knowledge and tax compliance implies that, in this particular scenario, tax knowledge might not be a potent inducement to comply. Tax compliance may also be influenced by other variables that were not taken into account in the analysis, including as societal norms, faith in the government, and the perception of the fairness of the tax system.

Overall, the results show that Tanzanian officials should think about combining higher tax rates with a better chance of detection in order to improve tax compliance. These deterrence tactics can also be strengthened by initiatives aimed at raising taxpayers' awareness and comprehension of the tax code.

6.0 Conclusion

The study rejected the null hypothesis and supported the alternative hypothesis by demonstrating that tax rates significantly increase tax compliance in Tanzania. Tax compliance and the likelihood of detection were likewise found to be positively correlated, with tax knowledge not being found to be a key determining factor. These results corroborate the Economic Deterrence Theory predictions; however, they contradict the Diffusion of Innovation Theory regarding tax knowledge. In conclusion, the study finds that Tanzanian taxpayer compliance can be improved by higher tax rates and a larger likelihood of discovery. It is recommended that policymakers take into account these findings and integrate them into their approaches to encourage voluntary tax compliance throughout the nation.

7.0 Research implications

The study's conclusions supported the economic deterrence theory of tax compliance and showed that tax rates and the likelihood of being detected had a major impact on Tanzanian taxpayers' compliance with tax laws (Chauke & Sebola, 2016). However, research using the diffusion of innovation theory (DOI) study model has shown that the added construct of tax knowledge had no effect on Tanzanian taxpayers' compliance with tax laws (Chille et al., 2021). that in order to improve tax compliance among Tanzanian business owners, tax authorities need look into other influencing factors besides tax expertise.

Therefore, in order to improve tax compliance, Tanzanian officials had to think about raising tax rates. Raising tax rates can have a more potent deterrent impact, urging citizens to pay their fair share of taxes. On the other hand, the study indicates that enhancing tax compliance may also be facilitated by raising the likelihood of detection, for example, through tax audits. Taxpayers are more inclined to comply with paying their taxes when they believe there is a greater chance, they will be caught evading taxes.

Even while this study did not find that tax knowledge was a significant impact, it is crucial to remember that increasing taxpayers' comprehension of the tax system might still be a useful addition to other deterrent strategies. Taxpayers should be given the information and education they need to fulfill their tax obligations.

The study emphasizes how crucial it is to take into account variables other than tax rates and expertise. Social conventions, faith in the government, and the perception of the tax system's fairness are a few more variables that could affect tax compliance. These elements should be considered by policymakers when creating measures that effectively encourage tax compliance.

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Factors Influencing the Community's Acceptance of Twitter (X) on Improving Information Access in Tanzania.

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Abstract

This study was conducted to investigate the acceptance of twitter(X) for improving information access in Tanzania. The specific objectives of the study were to assess the community's perceived usefulness of Twitter (X) in improving information access in Tanzania and to examine the community's perceived ease of use of Twitter (X) in improving information access in Tanzania. The study used cross-sectional research design, whereas a quantitative research approach was used, and a stratified sampling technique was used to select 154 respondents. Data were collected through a questionnaire. Data were analyzed using descriptive analysis and inferential analysis through multiple linear regression analysis. The

study found that the community's perceived usefulness and perceived ease of use of Twitter (X) plays a significant role in improving information access in Tanzania. The study concludes that perceived usefulness and perceived ease on Twitter (X) platforms are crucial for improving information access in Tanzania. The study recommends that the Tanzania Police Force should continue using the Twitter (X) platform to achieve better results.

Keywords: *Social media, Police force, Perceived Ease of use, Information access.*

1. Introduction

In recent years, social media has emerged as a pivotal tool for disseminating information swiftly and facilitating communication across various sectors, including law enforcement. Among the many social media platforms, Twitter (X) stands out for its ability to share concise textual messages, making it an effective medium for law enforcement agencies to communicate with the public. The rapid adoption of social media by police forces in countries such as the United States, the United Kingdom, and South Africa highlights its significance in enhancing information access and public engagement (Maina, 2020). This trend underscores the need for law enforcement agencies, including those in Tanzania, to leverage social media platforms like Twitter (X) to improve their operational efficiency and public interaction.

Law enforcement agencies have increasingly recognized the value of social media platforms, particularly Twitter (X), in their communication strategies. These platforms enable police departments to disseminate crucial information, ranging from emergency alerts to updates on criminal activities and public events (Harkins, 2016). The Boston Police Department's use of social media during the 2013 Boston Marathon bombing exemplifies the critical role of these platforms in crisis communication. Similarly, police departments in Australia and Canada have effectively utilized social media to enhance public relations and operational efforts during significant events (Stevens, 2017). These examples illustrate the global trend of integrating social media into law enforcement practices to improve information accessibility and public safety.

In the African context, Twitter (X) has become an essential tool for law enforcement agencies in countries such as Ghana and Zimbabwe. The Ghana Police Service, for instance, has actively used Twitter (X) to engage with the public and disseminate information, thereby enhancing the efficiency of police operations (Effah, 2021). Similarly, the Zimbabwe Republic Police has leveraged social media to improve information accessibility and public engagement (Foya, 2020).

In Kenya, the National Police Service's use of Twitter (X) has decentralized communication efforts, making information more accessible to the public and fostering greater interaction between the police and the community (Dwyer, 2020). These cases highlight the growing importance of social media in law enforcement across Africa, including Tanzania.

The Tanzania Police Force has also adopted social media platforms, particularly Twitter (X), to enhance information accessibility and public engagement. Despite these efforts, there is limited research on the extent to which the Tanzanian police utilize Twitter (X) to improve information access (Chille & Amanda, 2024). This gap in knowledge is significant, given the potential impact of social media on police operations and public safety (Issa, 2019). The current study aims to address this gap by investigating the extent to which the Tanzania Police Force, particularly at the Oysterbay Police Station, has embraced Twitter (X) as a tool for enhancing information accessibility.

The Technology Acceptance Model (TAM) provides a useful framework for understanding the adoption of new technologies, including social media platforms, within organizations. The model focuses on two key constructs: perceived usefulness and perceived ease of use, which influence users' attitudes toward technology adoption (Gao & Zhang, 2017). However, the application of TAM in the context of law enforcement's use of social media is limited, particularly in Tanzania. This study seeks to validate how major constructs of TAM, which are perceived usefulness and perceived ease of use, apply to the use of Twitter (X) by the Tanzania Police Force, with a focus on enhancing information accessibility.

While TAM offers valuable insights into technology adoption, it has certain limitations, particularly in the context of social media use in law enforcement. The model's simplicity, which focuses primarily on perceived usefulness and ease of use, may not fully capture the complexities of social media utilization in police work (Chille et al., 2021). Therefore, this study adopts a more comprehensive approach by integrating additional constructs such as perceived credibility, trust, and cultural attitudes toward social media. This approach aims to provide a more nuanced understanding of the factors influencing the acceptance of Twitter (X) by the Tanzanian police (Davis, 1989).

The current study is particularly relevant in light of the increasing reliance on social media for information dissemination and public engagement by law enforcement agencies. Understanding the community's perceived usefulness and perceived ease of use of Twitter (X) in improving information access can provide valuable insights into how the Tanzania Police Force can enhance its communication strategies. This research, focusing on the Oysterbay Police Station, aims to contribute to the broader discourse on the role of social media in law enforcement and public safety in Tanzania by assessing on the factors influencing community's Acceptance of twitter (X) on improving information access in Tanzania on assessing the two major constructs of perceived usefulness and perceived ease of use.

2. Literature Review and Hypothesis Formulation

A well-known theoretical paradigm that explains why people accept and utilize information technology (IT) solutions is called the Technological Acceptance Model (TAM). Fred Davis initially presented the idea in 1986, and in 1989, he and Richard Bagozzi improved it. The primary objective of the Technology Acceptance Model (TAM) is to interpret and predict users'

intentions about the adoption and usage of a particular technology. Perceived utility (PU) and perceived ease of use (PEOU) are the two main characteristics that impact technological acceptance, according to the paradigm. According to Vekantesh & Davis (2000), perceived utility refers to the user's subjective belief that implementing and using a certain technology would boost output or performance.

Perceived ease of use is a term that concerns the user's subjective assessment of the amount of work required to operate the technology (Rogers, 2015). It is clear from the Technology Acceptance Model (TAM) that these two factors have a significant impact on people's attitudes on using technology. As a result, this mindset eventually influences their motivation to use the mentioned technology. Scholars from a wide range of disciplines have widely adopted and improved the Technology Acceptability Model (TAM) to study the acceptability and adoption of different technological forms, including mobile devices, websites, software applications, and other information technology systems (Rogers, 2013).

The extent to which police officers adopt and efficiently utilize social media as a means of getting information is heavily influenced by the level of technological acceptability. The concept of perceived usefulness refers to the subjective evaluation of the extent to which a certain entity or system is believed to enhance an individual. It is imperative for law enforcement officials to recognize the utility of social media platforms in getting pertinent information that is applicable to their professional responsibilities. There is merit in recognizing the use of social media platforms such as Twitter (X), Facebook, or Instagram for the purpose of gathering intelligence, monitoring public sentiment, identifying potential threats, or collecting evidence. Law enforcement personnel are more inclined to embrace and use social media in their operations if they perceive it as a tool that can augment their capabilities. It is imperative that social media sites be designed to be user-friendly and straightforward for police officers. If law enforcement personnel perceive these platforms as user-friendly and conducive to effective communication, they are more inclined to adopt and utilize them. It is imperative to establish training programmes and support systems that facilitate officers' comprehension of the functionality, privacy settings, and optimal use of social media technologies. Technological acceptance pertains to an individual's disposition towards embracing and utilizing novel technology. Police officers who possess a favourable disposition towards technology are more inclined to exhibit familiarity with various social media platforms and demonstrate a higher level of comfort in their utilization. The presence of familiarity and comfort plays a crucial role in facilitating the effective and efficient retrieval of information on social media platforms.

2.1 Perceived Usefulness

Several studies have explored the perceived usefulness of social media platforms like Twitter (X) in enhancing information access for law enforcement agencies. For instance, Smith et al. (2017) investigated the perceived usefulness of Twitter (X) among police officers in the United States. Applying the Technology Acceptance Model (TAM), the study employed survey methodology to assess officers' perceptions. Findings indicated a generally positive perception of Twitter (X)'s usefulness for accessing information related to law enforcement activities.

However, a gap exists in applying these findings directly to the Tanzanian context, warranting further investigation into the community's perceptions in this specific context.

Similarly, Jones and Johnson (2018) examined the perceived usefulness of Twitter (X) for law enforcement agencies in the UK. Drawing on TAM and diffusion of innovations theory, the study utilized both qualitative interviews and quantitative surveys to gauge perceptions among police personnel. Results suggested that Twitter (X) was perceived as a valuable tool for accessing information relevant to policing activities. Nonetheless, the study's focus on the UK police may limit the generalizability of findings to the Tanzanian context, highlighting the need for research tailored to local circumstances.

In a study by Kim et al. (2019), the perceived usefulness of Twitter (X) in law enforcement was explored within the context of South Korea. Employing TAM and social exchange theory, the researchers conducted surveys among police officers to assess their perceptions. Results indicated that Twitter (X) was considered a useful platform for accessing information crucial to police operations. However, the applicability of these findings to Tanzania remains uncertain, necessitating research specific to the Tanzanian community's perceptions.

Contrarily, Wang and Zhang (2020) investigated the perceived usefulness of Weibo, a microblogging platform similar to Twitter (X), in Chinese law enforcement. Utilizing TAM and social cognitive theory, the study surveyed police officers to evaluate their perceptions. Results revealed a positive perception of Weibo's usefulness in accessing information for policing purposes. Nonetheless, the cultural and contextual differences between China and Tanzania underscore the importance of conducting localized research to understand the Tanzanian community's perceptions accurately.

Despite these studies, a gap remains in understanding the Tanzanian community's specific perceptions regarding the usefulness of Twitter (X) for improving information access. Therefore, our study aims to fill this gap by investigating the community's perceptions within the Tanzanian context, providing insights tailored to local circumstances. Therefore, the following hypothesis was developed

H1a1 perceived usefulness of Twitter (X) has a significance influence on improving access by the police force in Tanzania

2.2 Perceived Ease to Use

Research examining the perceived ease of use of social media platforms like Twitter (X) for law enforcement purposes offers valuable insights into the community's attitudes. For example, Brown and Green (2016) investigated the perceived ease of use of twitter(X) among police officers in Canada. Applying TAM, the study utilized surveys to assess officers' perceptions of twitter(X)'s usability. Results suggested that officers generally found twitter(X) easy to use for accessing information relevant to their duties. However, the study's focus on Canadian police officers may limit the generalizability of findings to the Tanzanian context, necessitating localized research.

In a similar vein, Lee and Park (2017) explored the perceived ease of use of twitter(X) for law enforcement in South Korea. Employing TAM and user experience (UX) design principles, the

study surveyed police officers to evaluate their perceptions. Results indicated that twitter(X) was perceived as user-friendly and easy to navigate for accessing information crucial to police work. Nonetheless, cultural and contextual differences between South Korea and Tanzania emphasize the need for research tailored to the Tanzanian community's perceptions.

Furthermore, White and Black (2018) examined the perceived ease of use of twitter(X) for law enforcement agencies in the United States. Drawing on TAM and usability testing methods, the study assessed officers' experiences with twitter(X) through interviews and usability tests. Findings suggested that officers generally found twitter(X) intuitive and straightforward to use for accessing information related to their duties. Nevertheless, the study's focus on US law enforcement may limit the applicability of findings to Tanzania, necessitating context-specific research.

However, a gap remains in understanding the Tanzanian community's perceptions regarding the ease of use of twitter(X) for improving information access by the police force. Therefore, our study aims to address this gap by investigating the community's attitudes within the Tanzanian context, providing insights tailored to local circumstances. Therefore, the following Hypothesis was developed.

H1a2 perceived ease of use of twitter(X) has significance influence on improving access by the police force in Tanzania

3.0 Methods

The study employed a cross-sectional research design, which provides a snapshot of a population or phenomenon at a specific point in time. This design, as defined by Saunders et al. (2019), allows for the examination of various variables simultaneously without considering temporal changes, making it a cost-effective and efficient approach for gathering data from a large sample. The research utilized a quantitative approach to objectively measure variables, particularly focusing on the acceptance of Twitter (X) for improving information access in Tanzania. This approach enabled the identification of trends, correlations, and patterns in Twitter usage and acceptance, providing a basis for generalizing findings to a broader population.

The study was conducted at Oysterbay Police Post, selected due to its strategic location within Kinondoni Municipal Council, which facilitated efficient data collection and access to relevant information. The population comprised 250 Tanzania Police Officials, from which a sample size of 154 respondents was determined using Yamane's (1967) formula, ensuring a 95% confidence level and a 5% margin of error. Data collection was carried out using a structured questionnaire, employing a 5-point Likert scale to measure responses. Stratified and purposive sampling techniques were used to ensure representativeness and reduce bias. Data were analyzed using multiple linear regression analysis with the assistance of SPSS version 24, which provided tools for data cleaning, transformation, and analysis, allowing the researcher to align the findings with the study objectives.

The reliability and validity of the data collection instruments were ensured through the use of Cronbach's Alpha and Exploratory Factor Analysis (EFA). Cronbach's Alpha values across all constructs were above 0.7, indicating strong internal consistency. Validity was assessed through EFA, which helped establish construct validity by identifying meaningful dimensions within the data. Ethical considerations were strictly adhered to, including obtaining approval from the relevant board, ensuring participants' consent, maintaining anonymity and confidentiality, and avoiding any form of harm or deception. These measures ensured the integrity and credibility of the research process and its findings.

4.0 Findings and Discussion

4.1 Demographic Information of the Respondents.

These characteristics included sex, age and education level. Characteristics of respondents involved age and sex so as to determine the influence of demographic variables on the acceptance of Twitter (X) (X) for improving information access by the police force in Tanzania. The study findings are presented in Table 4.1.

Table 4.1: Demographic Information

	N Statistic	Frequency Statistic	Percentage Statistic
Respondent Sex	100		
Male		75	75%
Female		25	25%
Respondent Age	100		
12-19 years		27	27.0%
20-40 years		50	50.0%
41-60 years		23	23.0%
60 and above years			
Respondent education level	100		
Secondary education		49	49.0%
Certificate		29	29.0%
Diploma		12	12.0%
degree		10	10.0%

Source: Field data, (2024)

The survey revealed that the majority of the respondents were male, comprising 75% of the sample, while female respondents made up the remaining 25%. This distribution suggested a significant gender disparity among the participants, which might reflect broader societal trends or specific characteristics of the community being studied. Similar gender disparities in technology use and perception studies have been documented in various contexts, indicating potential differences in access and engagement with digital platforms between men and women (Wilson & Lankton, 2017).

4.2 Analysis of Correlation

Correlation analysis was performed to determine how strongly the variables were associated. According to Table 4.2, the results showed that there is a correlation between the independent factors and the dependent variable under investigation (Kothari & Garg, 2014), ranging from $r = 0.654$ to $r = 0.775$ at $p < 0.01$.

Table 4. 2: Inter Correlation (N=100)

Variable	Perceived usefulness	Perceived ease of use	Acceptance of twitter (X)
Perceived usefulness	1	.0.748	0.691**
Perceived ease of use	0.748	1	0.604**
Acceptance of twitter(X)	0.691	0.604	1
Number of respondents	100	100	100

Source; Field Work (2024)

** At the 2-tailed (0.01) threshold, the correlation is significant; Source; Fieldwork (2024)

The analysis of the variable correlations in the study revealed several significant relationships. Perceived usefulness was found to have a strong positive correlation with perceived ease of use (0.748), attitude (0.775), and acceptance of twitter(X) (0.691), indicating that as the perceived usefulness of twitter(X) increased, so did the perceived ease of use, positive attitude, and acceptance of the platform. Similarly, perceived ease of use showed a positive correlation with attitude (0.654) and acceptance of twitter(X) (0.604), suggesting that ease of use influenced both the attitude towards and acceptance of the platform. These correlations, supported by 100 respondents, underscore the interconnectedness of these variables in shaping the overall acceptance of twitter(X) for improving information access by the police force.

4.3 Multiple Linear Regression Analysis and Model Summary Table 4. 3

Table 4.3 Model Summary

Variable	Tolerance	VIF	R	0.965
Perceived usefulness	.472	2.067	R squared	0.931
Perceived ease of use	.438	2.441	Adjusted R squared	0.929
			SE	.223
			ANOVA summary	

	F (p-value)	432.662 (<0.001)
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The multicollinearity analysis of the study's independent variables showed acceptable levels of tolerance and Variance Inflation Factor (VIF). The tolerance values for the variables ranged between 0.438 and 0.472, indicating no severe multicollinearity issues. Similarly, the VIF values, which ranged between 2.067 and 2.441, were well below the common threshold of 10, further confirming that multicollinearity was not a significant concern in this analysis. These results suggested that the independent variables were sufficiently distinct from one another to provide reliable estimates in the regression model.

The model's overall explanatory power was substantial, as reflected by the high R-squared value of 0.931. This indicated that approximately 93.1% of the variance in the dependent variable, which in this case was the acceptance of twitter(X), was explained by the independent variables included in the model. The adjusted R-squared value of 0.929, slightly lower than the R-squared value, accounted for the number of predictors in the model, suggesting a robust fit with a minimal loss of explanatory power when adjusting for the number of variables.

The Standard Error (SE) of the estimate was 0.223, indicating the average distance that the observed values fell from the regression line. This relatively low value suggested that the model's predictions were close to the actual data points, reinforcing the model's accuracy. The ANOVA summary further supported the model's validity, with an F-statistic of 432.662 and a p-value of less than 0.001. This highly significant p-value indicated that the regression model was a good fit for the data and that the relationships between the independent variables and the dependent variable were statistically significant.

Overall, the regression analysis demonstrated that the perceived usefulness and perceived ease of use, significantly contributed to the acceptance of twitter(X) for improving information access by the police force in Tanzania. The lack of multicollinearity, high R-squared values, and significant F-statistic collectively reinforced the robustness of the model, highlighting the substantial influence of these factors on the community's acceptance of twitter(X).

Table 4. 4: Multiple Linear Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.073	.128		-.574	.568
	Perceived ease of use	.288	.093	.282	3.081	.003
	Perceived usefulness	.246	.068	.236	3.625	.000
a. Dependent Variable: Acceptance of Twitter(X)						

Source: Field Work (2024)

The regression analysis revealed significant relationships between the independent variables (perceived ease of use, perceived usefulness and the dependent variable (acceptance of twitter(X)). The unstandardized coefficient for the perceived ease of use was 0.288 with a standard error of 0.093, resulting in a t-value of 3.081 and a p-value of 0.003. This indicated that perceived ease of use had a positive and statistically significant effect on the acceptance of twitter(X). Specifically, for every unit increase in perceived ease of use, there was an expected increase of 0.288 units in the acceptance of twitter(X), all else being equal.

The analysis also showed that perceived usefulness had a substantial impact on the acceptance of twitter(X). The unstandardized coefficient for perceived usefulness was 0.246, with a standard error of 0.068, leading to a t-value of 3.625 and a highly significant p-value of less than 0.001. This demonstrated that perceived usefulness positively influenced the acceptance of twitter(X), suggesting that as the perceived usefulness of twitter(X) increased, so did its acceptance among the community. For each unit increase in perceived usefulness, the acceptance of twitter(X) was expected to increase by 0.246 units.

The constant term, which represents the expected value of the acceptance of twitter(X) when all independent variables are zero, had an unstandardized coefficient of -0.073 with a standard error of 0.128, yielding a t-value of -0.574 and a p-value of 0.568. This result was not statistically significant, indicating that the baseline acceptance of twitter(X) without considering perceived ease of use and perceived usefulness was not different from zero. Overall, the regression coefficients highlighted the significant and positive effects of perceived ease of use and perceived usefulness on the acceptance of twitter(X). Therefore, the study confirmed the two hypotheses that perceived ease of use and perceived usefulness were significant in the acceptance of Twitter by the community.

5.0 Discussion

The findings of the study are similar to the Technology Acceptance Model (TAM), which was propounded by Davis *et al.* (1989) and Vanketesh *et al.*, 2003 which indicated that *Perceived usefulness by the community on the Twitter (X) platforms have an influence on acceptance of Twitter (X) platforms*. There is a need of practitioners and academicians to insist on better usefulness of the digital platforms so as to enhance more acceptance of the technology gadgets

The study revealed that majority of respondents agreed that they would continue accepting twitter(X) Platforms in collecting information for their police activities while majority of respondents agreed that they intend to use twitter(X) Platforms in the future for gathering information about criminality in Tanzania and majority of respondents strongly agreed that they would always access twitter(X) Platform in their daily life for information accessibility. The study revealed that the majority of respondents agreed they would continue accepting twitter(X) platforms for collecting information relevant to their police activities. This finding aligns with the high beta coefficient for perceived usefulness (0.236), which significantly predicted the acceptance of twitter(X) ($p < 0.001$). These results indicate that the community perceives twitter(X) as a valuable tool for enhancing their law enforcement activities. The mean

score of 4.40 for the item "it is very easy and affordable to use twitter(X) platforms" and 4.12 for "I intend to gather information through twitter(X) platforms in the future" further emphasize the perceived benefits. Such findings are consistent with previous research by Hu (2018), who found that social media platforms significantly contribute to information gathering and operational efficiency in law enforcement.

The findings of the study are also consistent with the study done by Lailat & Chille (2023) that perceived usefulness has an influence on the adoption of technology. However, the study highlighted a gap in understanding the full potential of twitter(X) for police activities, suggesting further exploration into how different features of twitter(X) can be optimized for law enforcement purposes.

Findings indicated that the majority of respondents strongly agreed that use of twitter (X) platforms would assist in their activities to accomplish more tasks quickly, majority of respondents strongly agreed that the twitter(X) platforms would assist in increasing productivity at their activities while majority of respondents strongly agreed that twitter(X) platforms would make them easily in efficient planning of their daily and weekly activities and majority of respondents strongly agreed that twitter(X) platforms would make police officers easily in efficient collecting information. Findings indicated that the majority of respondents strongly agreed that the use of twitter(X) platforms would assist them in accomplishing more tasks quickly. The regression analysis showed a significant effect of perceived ease of use on the acceptance of Twitter (X) ($\beta = 0.282$, $p = 0.003$). This result suggests that the easier the community finds twitter(X) to use, the more likely they are to adopt it for police information access. This is consistent with the Technology Acceptance Model (TAM) framework, which posits that perceived ease of use directly influences technology acceptance (Davis, 1989). The study's implication is that enhancing the user interface and providing adequate training can further increase twitter (X)'s adoption among police officers. Nevertheless, the study pointed out the need for continuous assessment of user experience to address any usability issues that may arise.

6.0 Conclusion and Recommendation

Based on the community's perceived usefulness of twitter(X) is significant on improving information access in Tanzania, the study concludes that community's perceived usefulness of twitter(X) plays significant role on improving information access in Tanzania since police offices use twitter(X) platforms in collecting information for their police activities and various information regarding police force in Tanzania are offered through twitter(X) platforms. Furthermore, perceived ease of use has an unstandardized coefficient of 0.288 and a standardized coefficient of 0.282. This suggests that perceived ease of use has a moderate positive impact on the acceptance of twitter(X).

The results indicate that boosting Tanzanian police force access to Twitter (X) is significantly influenced by perceived ease of use. Law enforcement officials are using the platform more frequently as it gets easier to use and more intuitive. The police force's communication, crime

reporting, and public participation are all made possible by this improved access.

Furthermore, the study demonstrates that there exists a strong relationship between Twitter's perceived usefulness (X) and acceptance of twitter use by the police community because of the simplicity of use. Officers view a platform as more helpful for important activities like communicating with the public, coordinating emergency responses, and sharing information when they find it straightforward to use. The relationship between usability and simplicity of use indicates that streamlining the user interface and features of the digital platforms are important factors in technological acceptance as the Technology Acceptance Model contends. Therefore, the Tanzanian police force may be better able to engage with and use Twitter (X) more effectively if its interface and functionalities are made simpler. This is because the simplicity of use and usefulness of Twitter (X) are correlated.

Based on the community's perceived usefulness of twitter(X) in improving information access in Tanzania, the study recommends that the police officers should continue using twitter(X) platform so as to continue accessing the information since it was established that there is significant relationship between perceived usefulness of twitter(X) and acceptance of twitter(X) for improving information access of Tanzania.

7.0 Limitations and Need for Further Research Studies.

There are a few limitations to the study that should be noted. First off, the sample size was tiny and restricted to a few Tanzanian municipalities, which may have left out important perspectives from the general populace. Furthermore, the study used self-reported data, which is subject to biases and errors in response. Because the study was cross-sectional, it was only able to record respondents' opinions at one particular moment in time, failing to take into consideration shifts over time or the long-term effects of law enforcement using Twitter(X) to obtain information.

To improve the generalizability of the results, it would be advantageous to increase the sample size and include a wider variety of locales in subsequent research. Longitudinal studies could provide deeper insights into how perceptions and attitudes evolve over time with continued use of twitter(X). Other constructs could future be incorporated, such as attitude, behavior intention, market characteristics, in assessing the factors influencing acceptance of Twitter in the police communities

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The Determinants of Stock Market Performance among Registered Companies in Tanzania. A Case of Dar Es Salaam Stock Exchange

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Abstract:

This study aims to determine the influence of sales growth on the stock market performance of companies registered on the Dar es Salaam Stock Exchange (DSE), more specific the study determined the correlation between sales growth and stock market performance. A quantitative method was used to analyze the secondary data from 14 companies out of 28 registered to DSE. Furthermore, the analysis of quantitative data using the Generalized Linear Equation Model (GLM), Mixed Generalized Linear Regression Model (MGLM), and Panel Regression Model (PRM) helped to obtain the results for generalization. Findings indicated that sales growth had a statically significant negative impact on firm's performance by 0.01 according to pooled GLM in Tanzania. Notwithstanding the unbalanced panel effects, the fixed and random effect

model indicated a non-statistically significant effect, thus sales growth had negative impact on firm performance by 0.516. Therefore, there was an inversely proportional between sales growth and organizational financial performance. The study recommended that companies registered to DSE should well leverage so as to benefit from the performance competitiveness of the DSE public market.

Keywords: *Sales growth, Stock market performance, Dar es Salaam Stock Exchange (DSE).*

1.0 Introduction

Sales growth is a crucial determinant of stock market performance, as it reflects a company's ability to generate revenue and expand its market share. In Tanzania, the relationship between sales growth and stock market performance is particularly significant, as it can indicate the overall health of listed companies on the Dar es Salaam Stock Exchange (DSE) (Doe, 2024). Companies experiencing robust sales growth often see increased investor confidence, which can drive up stock prices and enhance overall market performance (Doe, 2024). However, sales growth is one of the indicators of stock market performance and investment success of the previous years that can be used to forecast future growth and the company's ability to grow is demonstrated by its increase in sales, which leads to great revenue as well as the company profits (Dewi, 2019).

Globally, the stock market performance was affected by 2009 economic crash, corona virus that caused Covid-19 pandemic as far as affecting the emerging stock markets (Karanasos, Yfanti and Hunter, 2021; Endri et al. 2021; Sareen, 2020). In the study by Xu (2021), it was proved that the Canadian stock market experienced a decline as a result of an increase in confirmed COVID-19 cases, while in Australia, the performance of the stock exchange has improved due to the COVID-19 infection. COVID -19 period can seem to retarding calamity in the stock market by measuring investment opportunities and potential losses in general.

In Africa, the Efficient performance of commercial banks listed on the Nairobi Securities Exchange (NSE) in Kenya was reported to be influenced by effective net asset management (Stephen, 2024). Also, this study highlights the critical role of managing assets efficiently, and proper net assets can lead to improved profitability, better liquidity and overall financial stability for banks. However, according to Doe, J. (2024), Investment is still the key driver of economic growth although resources allocation and mobilization are essential pre-requisites for investments, the stock exchange market and other financial intermediaries play a crucial role in ensuring liquidity for long term investors in Nigeria.

Comprehending the factors that influence the performance of registered firms on the stock market and their interplay enables investors, analysts and the general public to make well-informed judgements regarding stock market investments. The stock market is regarded as a marketplace dealing with stock market assets, where traders purchase and sell commodities, derivatives, foreign exchange, stocks and bonds. Tanzania, a diverse and rapidly growing East

African economy, has been attracting increasing attention from investors and corporations, both domestic and international (Mwandu, Msofe, Mwiru & Marwa, 2024). The study of Dickson and Marobhe, (2019) found that, the Stock Exchange in Dar es Salaam (DSE) Tanzania is a fastest growing economic section in Africa in securities exchange. The exchange market became operationalized in 1998 after being incorporated in 1996 as a private company limited. Principally, the Capital Markets and Securities Act of 1994, amended in 1997, 2000 and 2010, govern the securities industry in the country. The ability to develop an effective and efficient stock market could impede the empirical growth of a healthy economy, as stock market expansion is beneficial for both short and long-term resource mobilization (Kamazima and Omurwa, 2018).

Prior research has shown that sales growth can positively influence stock prices by indicating robust business operations and future profitability (Smith & Brown, 2020; Johnson, 2021). However, the relationship between sales growth and stock market performance varies based on market conditions and company-specific factors (Lee, 2022; Ahmed & Kumar, 2023). Thus, the study wanted to answer the research question: *“What is the influence of sales growth on the stock market performance of registered companies in the Dar es Salaam Stock Market (DSE) in Tanzania?”*.

2. Literature Review

In its wide context, sales involve various activities such as prospecting, lead generation, pitching, negotiating, and closing deals (Batchimeg, 2017). In that fact, effective sales include strong, convincing strategies and techniques that are essential for businesses to attract customers, drive revenue growth, and achieve their stock market goals (Babarinde et al., 2024). The influence of sales growth on the stock market performance of registered stock market exchange companies is a critical factor to consider. Sales growth is a key performance indicator for businesses, often seen as a measure of a company's ability to increase revenue over time. Prior research has shown that sales growth can positively influence stock prices by indicating robust business operations and future profitability (Smith & Brown, 2020; Johnson, 2021).

Companies with strong sales growth typically experience higher levels of revenue, which can lead to increased profitability and shareholder value; however, the stagnant or declining sales growth may indicate underlying issues that could negatively impact stock market performance, such as market saturation, competitive pressures, or operational inefficiencies (Babarinde et al., 2024). According to Widiastari (2018), "the company's increased profits would indicate that the company's financial performance was getting better and the company's prospects going forward became promising." However, the relationship between sales growth and stock market performance can vary based on market conditions and company-specific factors (Lee, 2022; Ahmed & Kumar, 2023).

The study deployed the Capital Pricing Model (CAPM), which emphasizes " how risk and expected return are related to each other when pricing riskier assets." Its predictions are based on the notion that investors should be compensated for the risk they take on when making investments in particular assets and the concept of the time value of money. By using CAPM,

investors can determine whether a company's stock is priced appropriately given its level of risk compared to the overall market.

The implications of the Capital Asset Pricing Model (CAPM) to the performance of registered companies in the stock market lie in its ability to help investors and analysts assess the expected return of a company's stock based on its risk profile.

3. Methodology

The positivism approach with a quantitative case study design was employed involving secondary data from 14 OUT OF 28 registered companies to DSE. The study used random sampling in selecting 14 companies from DSE. Additionally, sales growth (x2) was an independent variable while stock market performance among registered firm were dependent variable (Y). This study deployed inferential analysis, namely, the generalized linear model (GLM), the mixed generalized linear model (MGLM) as well as the panel linear regression models (PLRM). All analysis were conducted using STATA version 15.

The mathematical model specification delineating the relationship between independent variables and the dependent variable was structured into two components. The initial component pertained to the execution of pooled cross-sectional while the subsequent component pertained to the execution of panel data analysis. The model is articulated as follows: the Generalized Linear Model (GLM) serves as an extension of the Linear Regression Model, presuming that the predictors exhibit a linear relationship in instances where certain predictors do not demonstrate a linear relationship with the dependent variable. GLM was employed utilizing the Poisson distribution and the log link functions. It was assumed that the dependent variable (Return on Assets – ROA) adheres to the Poisson distribution. The mathematical representation is as follows;

$$y_i = 0 + 1x_1 + 2x_2 + 3x_3 + 4x_4 + 5x_5 + 6x_6 + 7x_7 + e_i$$

Where: 0 as the intercept

1, 2, 3, ..., 7 Are coefficient

x1 as the leverage, x2 as sales growth, x3 as firm size, x4 as firm age, x5 as assets tangibility, x6 as liquidity and x7 as corporate tax ratio. The e_i represents the error term showing the effect of variables not accounted in the model.

Ever since the dependent variable Y may be restricted and the variance may not necessarily depend on the mean, the GLM was introduced to relax these weaknesses. The corresponding equation, expressed as a link function, is presented below.

$$\eta_i = 0 + 1x_{1i} + 2x_{2i} + 3x_{3i} + 4x_{4i} + 5x_{5i} + 6x_{6i} + 7x_{7i} + e_i$$

Where: $e_i \sim N(0, \sigma^2)$

Based on the MGLM, we assumed that observations were nested within companies. Therefore, the mathematical representation corresponding to this MGLM was as follows:

$$Y_{ij} = 0_j + 1x1_j + 2x2_j + 3x3_j + 4x4_j + 5x5_j + 6x6_j + 7x7_j + \epsilon_i$$

Where: the intercept 0_j is allowed to vary across companies $j=1, 2, 3, \dots, 14$

The PRM with fixed and random effect model was also constructed. The fixed effect model works under the assumption that the differences between cross section/individuals may be assessed using an intercept. This is accommodated when the dummy variable approach is adopted. In the random effect model, normally the difference observed between intercepts of companies is accommodated by the error terms of each corresponding company. The model is presented as follows.

The fixed effect model is stipulated as follows:

$$y_{it} = \alpha_i + X_{it} + \epsilon_{it}$$

Where: $i=1, 2, 3, \dots, N$ for companies and $t=1, 2, 3, \dots, T$ for time periods

Then, the random effect model also known as the error component model (ECM) was stipulated as follows:

$$y_{it} = \beta + X_{it} + u_i + \epsilon_{it}$$

Where: u_i is the individual company residual and ϵ_{it} is the overall residual combining cross sectional and time series.

4. Results and Discussion

In this study, the data comes from 14 companies namely CRDB Bank, Dar es Salaam Commercial Bank (DCB), Maendeleo Bank, Mkombozi Bank, Mwalimu Commercial Bank, National Microfinance Bank (NMB), Swala Gas and Oil Company Ltd (SWALA), Precision Air Services PLC (PAL), Tanzania Cigarette Co. Ltd. (TCC), Tanzania Breweries Ltd. (TBL), Tanzania Portland Cement Co. Ltd. (TWIGA), SWISSPORT Tanzania Ltd. (SWISSPORT), Tanzania Tea Packers Ltd. (TATEPA) and TOL Gases Ltd. (TOL).

This research examined the factors influencing firm performance by utilizing Return on Assets (ROA) as the dependent variable and three primary independent variables: sales growth, firm size and leverages. Additionally, control variables such as firm age, corporate tax ratio, liquidity and assets tangibility were included in the analysis. The study progressed from descriptive to inferential methodologies. The findings are presented in a sequential manner as follows: the sample consisted of 14 companies, each with 8 observations, resulting in a total of 112 observations. The minimum ROA observed was -163.77 while the maximum ROA recorded was 84.42. The Mean ROA was 9.17, indicating that, on average, company performance was 9.19; however, some companies exhibited negative ROA, indicating poor

performance. The mean value of within-firm ROA was 20.78 and the mean between-firm ROA was 19.84. Please refer to Table 4:1 for detailed information's.

Table 4:1 Descriptive Analysis of Study Variables

Variable	Mean	Std. Dev.	Min	Max	Observations		
ROA overall	9.170	28.292	-163.770	84.420	N	=	112
Between	19.837	-17.433	50.705	n	=		14
Within	20.779	-	111.022	T	=		8
		137.168					
Corporate. Overall	0.224	0.202	-0.300	1.134	N	=	112
Between	0.098	0.048	0.333	n	=		14
Within	0.179	-0.190	1.259	T	=		8
Liquidity overall	6.818	10.785	.04	67.690	N	=	112
Between	7.547	0.248	19.251	n	=		14
Within	7.934	-9.244	60.850	T	=		8
Leverage overall	2.856	9.944	-25.900	96.411	N	=	112
Between	3.943	-2.442	12.607	n	=		14
Within	9.183	-20.602	86.660	T	=		8
Asset overall	0.407	0.321	0.007	0.911	N	=	112
Between	0.308	0.027	0.860	n	=		14
Within	0.117	0.231	1.151	T	=		8
Sales grow overall	1.519	12.630	-0.999	132.525	N	=	112
Between	5.136	-0.033	19.355	n	=		14
Within	11.610	-18.771	114.689	T	=		8
Firm size overall	7.826	1.143	4.679	9.734	N	=	112
Between	0.803	6.377	8.887	n	=		14
Within	0.839	5.295	10.316	T	=		8
Firm age overall	26	18.636	0	68	N	=	112
Between	19.106	3.5	64.500	n	=		14
Within	2.302	22.500	29.500	T	=		8

In serving the purpose of this study sales growth were used as the main determinants of stock market performance among registered Companies in Dar es Salaam Stock Exchange.

4.1 Influence of Sales Growth on Stock Market Performance

The study revealed that sales growth had a negative effect on company's stock market performance using the pooled cross-sectional analysis as presented in table 4:2. Considering only independent variables (model 1), revealed that for each unit increase in sales growth, firms' stock market performance had a statistically significant decrease of 0.007 at $p < 0.001$. A

similar statistically significant decrease of 0.011 and 0.0108 were revealed when adjusting for other independent variables including company name (model 2) and year (model 3) respectively.

Table 4:2 Pooled Analysis Using GLM

	Model 1	Model 2	Model 3
Corporatetaxratio	2.678*** (12.55)	-0.0447 (-0.12)	0.0277 (0.07)
Liquidity	-0.0313*** (-5.24)	0.0240** (2.72)	0.0203* (2.30)
Leverage	-0.373*** (-20.51)	-0.147** (-2.77)	-0.142** (-2.63)
Asset tangibility	-0.864*** (-5.69)	0.277 (0.82)	0.104 (0.29)
Sales growth	-0.00680*** (-3.71)	-0.0111*** (-5.22)	-0.0108*** (-4.06)
Firm size	0.0611* (2.43)	0.239*** (5.97)	0.213*** (3.75)
Firm age	-0.00284 (-1.73)	-0.0622*** (-4.16)	-0.0801*** (-3.36)
1.Company_new			
CRD		1	1
2.Company_new		-0.591 (-1.47)	-0.690 (-1.62)
3.Company_new		-1.632** (-3.14)	-1.869** (-3.09)
4.Company_new		-0.451 (-1.05)	-0.649 (-1.28)
5.Company_new		0.156 (0.52)	0.151 (0.50)
6.Company_new		-0.112 (-0.12)	-0.0678 (-0.07)
7.Company_new		2.133*** (4.40)	2.517*** (4.16)
8.Company_new		1.894** (3.14)	1.533* (2.13)
9.Company_new		3.411*** (7.55)	3.629*** (7.14)
10.Company_new		-0.240 (-0.37)	-0.0824 (-0.12)
11.Company_new		1.792*** (3.76)	1.881*** (3.79)
12.Company_new		4.079*** (7.36)	4.638*** (5.86)
13.Company_new		3.839*** (5.50)	4.703*** (4.27)
14.Company_new		3.863*** (6.22)	4.574*** (4.88)
Year			
2011			1

2012.Year			0.132(1.42)
2013.Year			-0.108(-1.09)
2014.Year			0.270**(2.60)
2015.Year			0.171(1.34)
2016.Year			0.0586(0.40)
2017.Year			0.200(1.44)
2018.Year			0cdssddsds
_cons	2.875*** (15.22)	0.616(0.87)	1.106(1.18)
N	89	89	89
t statistics in parentheses			
="* p<0.05 ** p<0.01 *** p<0.001"			

Similarly, the MGLM revealed that sales growth had a statistically significant negative effect of 0.01 at $p<0.001$ as presented in table 4:3.

Table 3: Mixed Generalized Linear Model

Mixed-effects GLM		Number of obs		=	89
Family:	Poisson				
Link:	log				
Group variable:	Company_new	Number of groups		=	14
		Obs per group:			
		min		=	2
		avg		=	6.4
		max		=	8
Integration method: mvaghermite		Integration pts.		=	7
		Wald chi2(7)		=	117.77
Log likelihood = -311.77845		Prob > chi2		=	0.0000

ROA_new	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
corporatetaxratio	-.0123178	.371509	-0.03	0.974	-.7404621	.7158264
Liquidity	.0217495	.0086712	2.51	0.012	.0047543	.0387448
Leverage	-.1792324	.0496853	-3.61	0.000	-.2766139	-.0818509
Assettangibility	.2223485	.3323006	0.67	0.503	-.4289488	.8736458
Salesgrowth	-.0120542	.0021046	-5.73	0.000	-.0161791	-.0079292
Firmsize	.2619019	.039213	6.68	0.000	.1850459	.338758
Firmage	-.039562	.0147326	-2.69	0.007	-.0684374	-.0106867
_cons	1.286684	.6895076	1.87	0.062	-.0647259	2.638094
Company_new var(_cons)	2.213396	1.067529			.8600456	5.696352

LR test vs. Poisson model: chibar2(01) = 456.99		Prob >= chibar2 = 0.0000	
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Additionally, the fixed and random effect models as presented in table 4:4 revealed that sales growth had a positive, however being non-statistically significant at 5% level using the xtreg command. Using the xtregar command, we revealed that sales growth had a negative effect on the stock market performance of stock market exchange companies at $p < 0.001$ as evidence by a reduction of 0.52 on stock market performance for each unit increase of sales.

Table 4:4 Fixed and Random Effect Modelling of the Determinants of Stock Market Performance

Variables	Estimates from Xtreg		Estimates from Xtgar
	Fixed	Random	
corporatetaxratio	-0.326(-0.03)	11.85(1.01)	-0.873 (-0.08)
Liquidity	-0.0437(-0.18)	-0.298(-1.10)	-0.0901(-0.81)
Leverage	-0.129(-0.65)	-0.129(-0.56)	-0.0812(-0.09)
Asset tangibility	-84.07***(-4.93)	-41.10***(-3.35)	10.34(0.89)

Sales growth	0.220(1.30)	0.0815(0.44)	-0.516***(-5.60)
Firm size	-0.375(-0.15)	3.077(1.31)	3.248**(2.91)
Firm age	-1.354(-1.54)	0.738*** (3.42)	-2.105**(-2.99)
_cons	81.98*(2.42)	-17.72(-0.94)	53.26**(3.28)
Sigma_u	57.3533	7.95	45.029
Sigma_e	18.9788	18.9788	7.26
rho	0.9013	0.1493	0.975
Rho_ar			0.3302
Test that all u_i=0:	F(13,91)=8.13, F=0.000		F(13,54)=12.48, F=0.000
Modified Bhargava et al. Durbin-Watson			1.3579
Baltagi-Wu LBI			1.9948
N	112	112	75
t statistics in parentheses			
="* p<0.05 ** p<0.01 *** p<0.001"			

The results on the influence of sales growth on the stock market performance of registered stock market exchange companies are inversely proportional to Batchimeg (2017) who found the regression results of stock market ratios ROA, ROE, and ROS on earnings per share and return on costs. The regression results shown a significant positive relation on stock market performance of an organization. In addition, Babarinde et al. (2024) revealed that ATM, POS, mobile based, and web-based digital finance transactions had a positive and significant impact on the stock market capitalization ratio in Nigeria. Nevertheless, Ozturk and Karabulut (2020) revealed the earnings per Share (EPS) and Price-to-Sales ratios to have significant effects on technology and telecommunication companies' stock returns. This kind of analysis bare a crucial importance that companies need to analyze the beneath underlying reasons for the negative relationship of sales growth on stock market performance as summarized in figure 4.3. Nevertheless, appropriate measures should be taken to challenge this relationship.

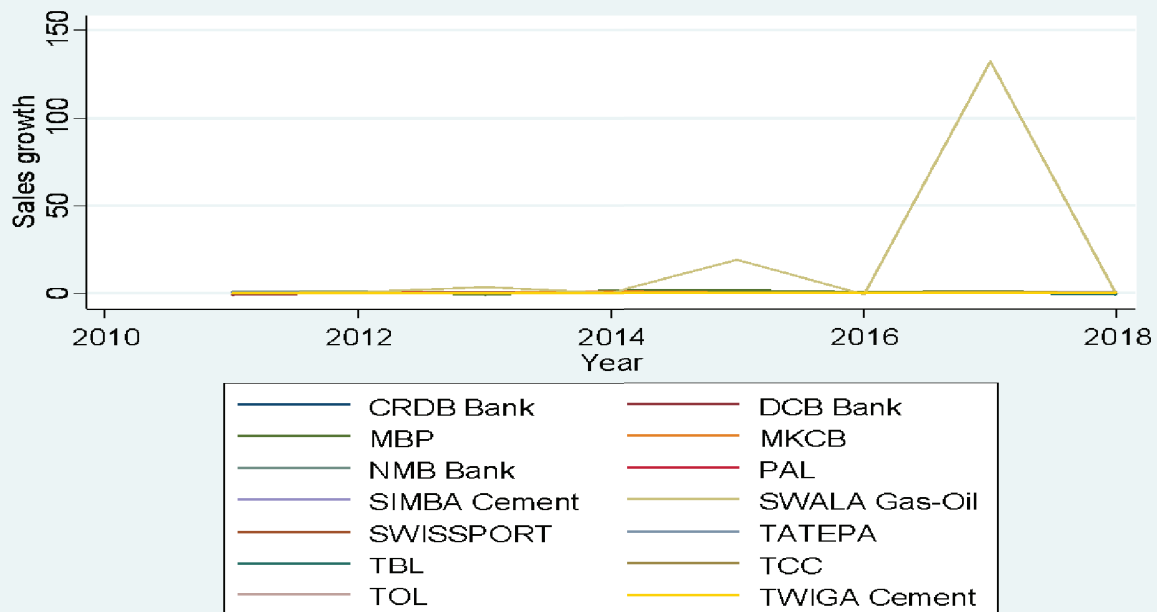


Figure 1: Sales Growth

When sales growth suggest the negatively impacts on companies' stock market performance, it typically means that despite an increase in sales revenue, the company is experiencing challenges that are affecting its overall stock market health. The challenges such as declining profit margins, increased operating expenses, inefficient cost management, poor inventory management or any other competent reason. In that regard, this negative relation reveal inability of a company to translate its sales growth into improved cash flow, which in turn impact its stock market performance in a negative way.

5. Conclusion and Recommendation

Based on empirical evidence derived from studies employing statistical analysis and the discourse presented in the preceding chapter, it was deduced that a negative correlation exists between sales growth and a company's stock market performance. This was substantiated by the results of the pooled cross-sectional analysis indicating that for each incremental unit increase in sales growth there was a statistically significant decline in firms' stock market performance at a certain level of significance. The research implications concerning the assessment of stock market performance in Tanzania, with a specific focus on companies listed on Dar es Salaam Stock Exchange (DSE), encompasses both practical and policy considerations. From a policy perspectives, the research outcomes offer valuable insights for policymakers and regulators in Tanzania to make informed decisions pertaining stock market regulations, investor protection, and initiatives aimed at market development for both domestic and foreign concerns.

Practically, the research findings shed light on the role of the stock market in the Tanzanian economy, its contribution to economic growth, job creation, and wealth generation, providing a broader understanding of the market's impact on the overall economy.

Based on the findings, I suggest that in order to obtain a better understanding of the relative performance and competitiveness of the market, the next study looks into comparing the performance of the registered firms with other East African stock exchanges. Also, the next study should consider qualitative factors and other research may focus on the impact of digital trading platforms and algorithmic trading and their influence on stock market performance in Tanzania. Some challenges this research study faced included selecting data analysis methods and the researcher's limited knowledge of STATA and related models.

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Examining E-Recruitment Implementation Challenges in Tanzania's Public Sector: “A Case of Public Service Recruitment Secretariat”

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Abstract

Purpose- The use of electronic recruitment in Tanzania public services was to solve the challenges initiated by traditional recruitment such as cost and time, corruption, unqualified employees, limited access to talented candidates and diversity. With all efforts made by the government, its survival still has not met its intended objectives. Thus, this study aimed to examine setbacks of e-recruitment implementation in Tanzania Public Service.

Methodology. Data were - with the existing gap this study paid a specific focus in the Public Service Recruitment Secretariat. The study employed a qualitative approach to collect data from 15 key informants who were purposively and conveniently sampled to inform the study through interviews and focused group discussion analyzed qualitatively using thematic analysis.

Findings- The study findings revealed that proper maintenance of Applicants' Information, Transparent and Fair Recruitment Process, User Friendly, and Cost and Time Optimization are the reasons for e-recruitment adoption. Challenges facing e-recruitment implementation are technological issues, costs, user resistance, and lack of personalization. Training programs to users, establishing and enforcing regulations as the option to maintain change sustainability.

Recommendations- Improve internet and technology infrastructure, enhance digital literacy, build user-friendly platforms, increase trust and transparency, address the digital divide, government and policy support, collaboration with the private sector and continuous improvement and innovation are advised to stabilize effective implementation of e-recruitment in Tanzania public service.

Keywords; *E-recruitment, E-recruitment implementation, public sector*

1. Introduction

The increasing of technological advancement in running organization activities has stimulated the adoption of e-recruitment in both private and public organizations, (Saini, and Tarkar, 2024). E-recruitment has enabled the organizations' employment opportunities being accessible to the high population of young individuals searching for jobs, (Alzhrani, 2020). Hence, the rise of the internet on the other hand, has revolutionized manual recruitment methods, thus e-recruitment is the most modern trend in which both large and small businesses have adopted it (Smythe, *et al* 2021). The introduction of New Public Management (NPM) in the Public Sector was designed to address institutional and structural concerns affecting public bureaucracies in both developed and developing nations, concurred with the emergence of e-recruitment as a cost and time-saving strategy (Cavaliere, *et al* 2021).

In Malaysia the application of the nation's most widely used e-recruitment tools, such as business web pages and job sites verified that the country employs e-recruitment more often than manual recruitment methods, it has increased its capacity to attain highly skilled and talented staffs (Barkat and Mohamed, 2024). Also, in Nigeria e-recruitment was introduced in 2005 with the purpose of hiring employees for the public sector thus stimulated its adoption in most of Nigerian organizations in both private and public organizations and it is complemented as effective and efficient way of recruitment (Oyuru, 2023). Tanzania established Public Service Recruitment Secretariat (PSRS) in 2007 with the aim of running all recruitment processes and procedures in public service (Mshanga, 2020). The establishment of the Public Service Recruitment Secretariat was a result of the Public Service Act no.18 of 2007, section 29 (1), the goal of its establishment is to undertake recruitment procedures using modern tactics by adhering to principles of equity and transparency (Mshanga, 2020). In 2014, the public service automated its recruitment processes by introducing an online recruitment portal known as (*Ajira* portal) (Sikawa, 2023). The aim of the changes is to make the public sector more open to the interests of citizens by increasing transparency, productivity and efficiency as well as saving cost and time (Mkongo and Macha, 2023). Even with the Tanzanian government's endeavors, the public service has yet to fully embrace e-recruitment, particularly given the amount of time since its inception. Examining the obstacles to e-recruitment in Tanzania's public sector is the main goal of this study, which aims to answer the following key question: *Why has the full adoption of electronic recruitment in Tanzania's public service been delayed?* The study is directed by the following research questions in order to accomplish this goal:

- i. What are the main reasons for the use of e-recruitment?

- ii. What obstacles stand in the way of effective e-recruitment implementation?
- iii. How can the obstacles to e-recruitment implementation be addressed?

2.0 Literature Review

2.1 Theoretical Premises

Force Field Analysis as a decision making tool was developed by Kurt Lewin in the 1940s, it is used to analyze the factors that influence a situation, particularly in the context of organizational change (Cummings and Worley, 2014). The tool helps to identify the forces that either drive or resist change, enabling leaders and managers to make informed decisions about how to proceed with change initiatives. The key components of force field analysis are,

- a. Driving forces; these are the factors that push towards change and they are positive forces that support the desired change and help to move the organization or situation towards a new state (Lewin, 1951). In relevance to the study this stands for the reasons of e-recruitment in Tanzania public service. This guides the study in finding out what has driven Tanzania public service to adopt e-recruitment.
- b. Resisting forces are the factors that resist change, they are negative forces that hinder the progress of change and work to maintain the status quo, this can be employee resistance due to fear of the unknown, organizational culture that favors stability, lack of resources or budget constraints, inadequate training or skills (Lewin, 1951). This guides the study on finding out what are the challenges facing e-recruitment implementation thus leads to its delay in fully adoption.
- c. Equilibrium stands for the current state of affairs or the status quo, where driving and resisting forces are in balance (Lewin, 1951). Change occurs when this equilibrium is disrupted, either by increasing the driving forces or reducing the resisting forces (Cummings and Worley, 2014). In this study the researcher focused on measures to overcome the challenges facing the implementation of e-recruitment in Tanzania public service. Thus provides a clear visual representation of the forces impacting change, helps decision-makers understand the factors at play and develop effective strategies for managing change and focus that allows organizations to focus on key areas where interventions can have the most impact.

2.2 Empirical Reviews

Fernandes and Machado, (2022) described e-recruitment as the use of web-based technology to run recruitment process, including attracting, assessing, selecting, and onboarding job candidates. The concept of e-recruitment in other words may be explained as online process of hiring, interviewing and evaluating employees (Gupta and Bhosale, 2023). In the context of e-recruitment, reasons for change are based on the challenges of traditional recruitment and the benefits of adopting e-recruitment (Hashiyana, *et al* 2021). When an organization fails to clearly articulate the reasons for change, its implementation becomes uncertain (Hariharan, *et al* 2023). Hegazy and Elsayed, (2022) argued that the adoption of an ICT system would face

challenges if the intended user populations were not adequately prepared for the reasons behind its adoption. To address the challenges associated with bureaucratic paperwork in the recruitment process, countries like Nigeria and Mali witnessed setbacks in private multinational corporations, leaving local indigenous people from those countries at a disadvantage due to their insufficient ICT knowledge for accessing employment opportunities (Hosain, *et al* 2020). However, studies by Koman, *et al.* (2024); Koech, Kirui, and Langat, L. (2022); Malki, & Atlam, (2021); Mamatha, *et al* (2022) and Mashayekhi, *et al* (2022) highlighted internet connectivity issues as a challenge for the successful implementation of e-recruitment. Thus, its absence posed further obstacles to workforce management development. Although e-services in the public sector have reduced corruption, increased information sharing and improved accountability, their persistence remains limited due to factors such as inadequate integration between government systems, the urban-rural ICT divide, insufficient financial support, limited directed ICT education, and a shortage of centers providing equitable ICT knowledge to human capital. In order to have effective and efficient e-recruitment implementation it is emphasized the organizations has to equip themselves with ICT knowledge to thrive in the global digital economy (Leonidas & Tibuhinda 2023). To ensure the success of any organizational change, (Sikawa, 2023); Buhari, *et al* (2021); Mkongo & Macha (2023); Mosonik, *et al* (2022); Msacky, & Mwangata (2023); Nazreena, (2023) argues that there is a need to clearly explain the reasons behind the change so as to facilitate a smoother and more rapid transition to new practices thus allows all members of the organization to embrace the change.

3.0 Methodology

The study explored how e-recruitment adoption enhance effective recruitment procedures, by gathering contributors' views, proficiencies, beliefs, insights, attitudes, feelings and behaviors in natural settings through interviews and focused group discussion.

3.1 Study Area

This study focused on the Public Service Recruitment Secretariat (PSRS) to obtain reliable and meaningful statistics on the deployment of e-recruitment in Tanzanian public service. This is because, as stated in section 29(1) of the Public Service Act No. 8 of 2002, revised by Act No. 18 of 2007, the Public Service Recruitment Secretariat is authorized to oversee the recruitment process in the public sector. As a result, this study was carried out in Dodoma, Tanzania, at the Public Service Recruitment Secretariat.

3.2 Sample Size and Sampling Procedures

Purposeful sampling technique was employed to gather responses from the five (5) key informants that were interviewed. The respondents included the Director of the PSRS, Principle Human Resource Officer, Head Monitoring & Evaluation Unit, Head of ICT, Head of Recruitment and Selection in LGAs, and Head of Recruitment and Selection in MDAs. The

rationale behind the technique selection is that the ICT department has concrete data on the use of electronic technology in the recruitment process, while the director and PHRO have detailed information about the administration at the PSRS and the practice of HR as the center unit in which recruitment is to be initially developed. Since the head of the recruitment and selection unit in both LGAs and MDAs has direct experience with hiring and selecting personnel for the public sector, it makes sense for them to supply information for this study. As a result, every inquiry unit had the appropriate responder to collect pertinent data for this research. Conveniently, ten respondents from the recruitment section were included in the convenience sample technique, which was dependable in capturing the availability, accessibility, and willingness of the determined respondent to create two groups to form the focused group discussion (FGD) with five members each. In this way, 15 key informants provided responses for the study's sample.

3.3 Data Collection

The triangulation approach of data collecting, which relies on focused group discussions and interviews was employed, in order to generalize the data collection and conclusions. Initially, while gathering data the researcher conducted in-person interviews with the Director of the PSRS, Principle Human Resource Officer, Head of Recruitment Monitoring & Evaluation Unit, Head of ICT, Head of Recruitment and Selection in LGAs, and Head of Recruitment and Selection in MDAs in order to gain an inside look at the e-recruitment implementation challenges in the public service. Second, the study included focused group discussions (FGDs) with people who shared similar characteristics in order to capture the controversies and similar views on the implementation of e-recruitment among the respondents' experiences. Respondents were expected to promptly express their opinions during these FGDs.

3.4 Data Analysis

The researcher utilized thematic analysis to match patterns and create compelling descriptions. Consequently, the data were categorized into themes and examined in light of them. To ensure a thorough grasp of the conclusions drawn about the transformation of e-recruitment, data were sorted and transcribed from Swahili to English. The researcher included quotes from the interviewees to get a true sense of the respondents' feelings. In order to understand the respondents' experiences, the data were also categorized and put into narratives. Ultimately, all results were presented in line with the goal and the specified parameters.

4.0 Result and Discussions of the Findings

The main objective of the study was to examine the challenges facing e-recruitment implementation as well as suggesting measures to overcome the challenges. The researcher focused on the advantages of e-recruitment, challenges facing e-recruitment implementation as well as way out to overcome the challenges so as to have effective and efficient e-recruitment in Tanzania public service.

4.1 Advantages of E-Recruitment

In this parameter the question asked was “what is the driving force for the adoption of e-recruitment in public service?” the key informants were the employees from the administration and human resource division and their responses based on the advantages of e-recruitment as quoted from some of the respondents;

E-recruitment helps in the storage of applicants' information due to the use of modern technologies such as computers (servers) where applicant's information is stored safely. Also, it promotes Transparency as well as a friendly environment for both applicants and the public staff since the use of computers has minimized diseases caused by dust from papers, simplifying the work of accessing applicants' information as well as completing the recruitment activities on time. (Interview, Key informant a)

The PSRS no longer incur a cost for paying overtime thus e-recruitment does not spend a lot of time in operating also the cost for buildings to store the applicant's information is avoided (FGD 1)

The findings relates to the study done by Koman, et al. (2024) in their study on the importance of e-recruitment within a smart government the study revealed that e-recruitment enables the government and applicant to save cost and time by eliminating the use of paper that consumed a lot of time, also Kuchеров and Tsybova, (2022) on the study contribution of e-recruitment practices to e-recruitment outcomes in Russian the study revealed that e-recruitment promotes transparency by enabling all applicants with qualifications to apply for job thus stimulates a large pool of applicants and gives room for an organization to select the best and qualified talented employees. Kumari and Dutta, M. (2024), in their study of e-recruitment revolution and Sikawa (2023), in their study of e-recruitment and merit employee selection, provided that e-recruitment is user-friendly since it is flexible; thus, applicants can be able to look for a job at any time and any environment. The findings compliment the theory on the assumption “driving forces” by emphasizing on the benefits of e-recruitment as forces pushing the public service toward e-recruitment so as to align with broader goals of modernization and accountability in public service.

4.2 Challenges Facing E-Recruitment Implementation

The finding revealed that despite the advantages that e-recruitment offers to the government and the applicants still it faces challenges that hinders its development hence some of the strategies takes time to be fulfilled. The question asked was “what challenges hinder the implementation of e-recruitment?” the key informants were the employees from the administration and human resource management division. The key informants provided challenges as quoted;

We facet technical issues such as server downtime, software glitches, or compatibility problems with existing systems, Costs of

running the e-recruitment systems in initial setup including software purchase, customization, and training. Also ongoing costs for maintenance and upgrades are very expensive thus leads to delay due to lack of enough funds. (Interview, Key informant b)

The emergence of resistance among users since we faced resistance to some of stakeholders, including recruiters and applicants who resisted to change due to unfamiliarity with new systems or perceived complexities. (Interview, Key informant a)

Skill gaps among users has occurred to some of our applicants thus require training to effectively use new e-recruitment tools, potentially causing productivity dips during the learning curve. (FGD 2)

Force field analysis shows that negative forces that leads to delay changes in the organization may be due to fear of unknown, budget constraints or limited skills, from the findings these have been among the challenges hindering the implementation of e-recruitment. The findings are complimented Sikawa, (2023) as one of the challenges that threaten the survival of e-recruitment is the potential exclusion of candidates who lack the necessary technical skills on application of e-recruitment systems. In the same manner, the findings concur to the analysis done by Leonidas and Tibuhinda, (2023) on effectiveness of digital platforms in promoting recruitment in public entities under the e-government whereby the study found out that there are no clear application guidelines that provides the procedures on system usage for customers on how to use e-government systems in accessing public services since most of users lack skills in information communication technology. Also, the study by Anguche, *et al* (2024) on e-government services and performance of county governments in Kenya supports the findings by exploring that among the challenges hindering e-recruitment implementation is cost in maintaining and affording the advanced technology that enables recruitment process in electronic bases.

4.3 Measure to Overcome the Challenges of E-Recruitment

Since e-recruitment faces some challenges that hinder its implementation, the management should find solutions to eliminate these challenges. In this parameter the question asked in this section was “What should be done to overcome challenges facing e-recruitment implementation?” The key informants provided solutions to overcome the challenges facing e-recruitment implementation, such as the provisions of advanced ICT equipment, integrating PSRS systems with other organizations, creating online recruitment portal, linking employment related information to mobile phones as well as the use of social Medias. As quoted;

Improve internet and technology infrastructure by expanding internet access through enhancement of internet coverage, particularly in rural and remote areas, enhancing digital literacy by conducting training

programs to teach job seekers how to use e-recruitment platforms effectively also conducting campaigns to inform both job seekers and employers about the benefits and functionalities of e-recruitment. (Interview, Key informant a)

Build user-friendly platforms so as to simplify application processes by developing intuitive, easy-to-navigate e-recruitment platforms that minimize complexity in the application process. As well as mobile optimization to ensure that e-recruitment platforms are optimized for mobile devices, given the high penetration of mobile phones in Tanzania. (FGD 1)

Address digital divide to support for disadvantaged groups, Government and policy support, by establishing and enforce regulations that support the use of e-recruitment, Collaboration with private sector such as partnerships with technology companies to provide affordable and innovative solutions for e-recruitment and continuous improvement and innovation. (FGD 2)

The findings complemented Saini and Tarkar (2024) in their study on e-recruitment globally. The findings suggested that the government should enforce regulatory frameworks that support the implementation of e-recruitment in both private and public sectors, thus providing guidelines on the implementation of e-recruitment so as to obtain qualified employees. Deogratias and Tefurukwa, (2024) in their study Regulatory Frameworks for E-Recruitment and Selection Effective in Public Service complement the findings by recommending that the public service recruitment secretariat as the government organ dealing with recruitment and selection should have their own regulatory frameworks governing the changes that are taking place without relying on e-government regulatory frameworks only. Alahmadi (2024), in his study exploring the impact of e-recruitment on the performance of human resource departments in multinational organizations, suggested that there should be collaboration among the organizations by creating partnerships with technology companies to provide affordable and innovative solutions for e-recruitment thus enabling effective and efficient recruitment process. Kowo, *et al* (2019) on the study efficacy of e-recruitment practices on employee retention in multinational corporations, the findings complemented the study by suggesting that the organizations should create mechanisms for continuous feedback from users to improve e-recruitment systems based on their needs and experiences thus enables the management to find a best way to improve it operations and simplifying the task to know what to do based on a problem that has arisen. The study done by Alibegović, *et al* (2023); Tiru and Mohorâta, (2020); Hegazy and Elsayed, (2022); Dragusha and Ukaj, M. (2021); Dokey and Abunar, (2021) and Malki and Atlam, (2021) provided that e-recruitment systems should be user friend so as to simplify application processes by developing intuitive and easy way to navigate e-recruitment platforms that minimize complexity in the application process. Also, the findings provided that there should be mobile optimization to ensure that e-recruitment platforms are

optimized for mobile devices, given the high penetration of mobile phones to the candidates. In relevance to the theory, force field analysis shows that there should be equilibrium that means the change management should create strategies that allows the organization to focus on changes by eliminating negative forces that can be obstacles for its development.

5.0 Conclusion

E-recruitment is a viable change management strategy that not only improves recruitment in the public service but may also lead to budget efficiency. Despite showing a move to transition from manual to electronic recruitment system and having more than a success rate of 98% among users of the PSRS recruitment portal (Ajira Portal), the usage of e-recruitment system is still facing challenges that hinder it to be as successful as intended. The implementation of training and regulatory frameworks governing e-recruitment as well as support from the stakeholders can facilitate effective adoption of e-recruitment. Thus, great awaken on its implementation should be not a rest option for modern fashion but a strategic reason for the growth of young people and the whole society of Tanzania.

6.0 Recommendations

In order for e-recruitment process to be complete, the public service has to find ways of collecting fund that will be enough to afford the cost of e-recruitment technologies, that can be through partnerships as well as hiring more ICT expert for more innovation and stable systems.

Decentralization of recruitment procedures in zonal and local authorities' centers will be productive so as to avoid the PSRS being overloaded with recruitment activities.

Stabilizing networks in rural areas for better penetration of information and training job seekers on the use of e-recruitment as well as provision of technical support to the stakeholders still remain a waited agenda for the sustain of employment in the Tanzania public service.

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**Evaluating the Impact of External Property Management on Organizational Efficiency:
A Comparative Study of Standard Chartered Bank and Citibank in Tanzania**

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Abstract

This study evaluated the operational performance of Evaluating the Impact of External Property Management on Organizational Efficiency, focusing on Standard Chartered Bank and Citibank in Tanzania. The primary objective was to analyze how outsourcing property management functions influenced overall efficiency within these financial institutions. Employing a cross-sectional research design and a quantitative approach, the study targeted a population of 195 employees across both banks, with a sample size of 130 respondents selected through stratified random sampling. Data were collected via structured questionnaires and analyzed using statistical software. The findings indicated that outsourced property management significantly enhanced operational efficiency by optimizing resource allocation, reducing operational costs, and improving service quality. The study concluded that effective outsourcing strategies could lead to improved performance metrics in the banking sector. Based on these findings, recommendations included the adoption of tailored outsourcing strategies and continuous performance monitoring to maximize the benefits of outsourced property management functions, ultimately enhancing organizational efficiency in Tanzanian banks.

Keywords: *Outsourcing, Organizational Efficiency, Property Management, Comparative Analysis*

1. Introduction

External property management, commonly referred to as outsourced property management within organizations, has become a crucial strategy for businesses worldwide. This approach has gained particular significance in the financial sector, where companies strive to improve efficiency by concentrating on their core competencies while outsourcing non-core functions to specialized third-party providers (Domberger, 2018). This approach is prevalent in Europe and the United States, where financial institutions have extensively outsourced operations such as technology services, customer support, and property management to reduce costs and access advanced technological skills (Deloitte, 2020; Ventresca, 2018). The global banking industry has embraced outsourcing as a means to remain competitive in a rapidly evolving financial environment, particularly with the rise of digital transformation, necessitating specialized knowledge in areas such as cybersecurity and data analytic (EY, 2021).

In Africa, outsourcing has similarly gained traction, with banks increasingly adopting this strategy to streamline operations and respond to market demands (Ajayi, 2019). The banking sector in countries like Nigeria, Kenya, and Uganda has seen significant growth, prompting financial institutions to outsource various non-core functions, including property management, to enhance operational efficiency (BOU, 2019; Kamau, 2020). For instance, the United Bank for Africa in Nigeria has outsourced its property management to optimize the management of its extensive real estate portfolio, highlighting the continent's growing reliance on outsourcing

to improve service delivery and meet regulatory requirements (CBN, 2019). This trend reflects a broader shift in African banking towards more flexible and cost-effective operational strategies.

Tanzania, as an emerging economy with a rapidly expanding banking sector, presents a unique case for studying the impact of outsourcing on organizational efficiency, particularly in property management. The local banking industry, while experiencing growth, operates within a different regulatory and economic context compared to its global and regional counterparts, making it crucial to explore how outsourcing affects banks in Tanzania (EADB, 2021). The outsourcing of property management functions, such as facility maintenance and space utilization, is particularly relevant for banks with extensive physical infrastructures like Standard Chartered Bank and Citibank (Mwambene & Katanga, 2021). However, there is a notable lack of localized research examining the specific impact of outsourcing on property management within banks operating in Tanzania, necessitating a study that addresses this gap and offers insights into how these institutions can optimize their operations in a competitive environment (BOT, 2019). This study aims to fill this void by comparing the operational performance of outsourced property management in Standard Chartered Bank and Citibank, thereby contributing valuable knowledge to the understanding of outsourcing practices in Tanzania.

2.0 Literature Review

2.1 Organizational Efficiency

The term "Organizational Efficiency" refers to the organization's ability to achieve its goals by effectively utilizing resources, enhancing productivity, and optimizing processes (Al-Eisawi et al., 2021). Focusing specifically on operational performance, this term highlights how outsourcing property management functions can enhance efficiency by improving resource allocation, streamlining workflows, and optimizing operational processes. The study examines whether outsourcing contributes to better utilization of resources, enhances day-to-day operations, and improves performance metrics, thus directly impacting organizational efficiency (Al-Eisawi et al., 2021). This operational perspective underscores the importance of evaluating how well outsourcing supports effective management and operational improvements.

2.2 Outsourcing

The term "outsourcing" is essential to this study as it involves contracting out property management functions to external third-party vendors (Nyameboame & Haddud, 2022). The practice aims to enhance organizational efficiency by leveraging specialized expertise, reducing costs, and allowing the organization to concentrate on core competencies (Domberger, 2018). This study evaluates whether outsourcing property management tasks results in cost savings, impacts daily operations, and affects the effectiveness of property

management functions, thereby providing insights into how this practice influences overall organizational efficiency.

2.3 Operational Performance

The term "Operational Performance" is crucial to this study as it pertains to the effectiveness and efficiency of property management tasks post-outsourcing (Nchimbi et al., 2019). It involves evaluating how well these outsourced tasks meet predefined standards, including responsiveness to maintenance requests, accuracy in financial reporting, and adherence to regulations. The study assesses the speed and punctuality of property management activities, the efficiency of resource allocation, and the ability of external providers to adapt to changing demands and conditions. Understanding these aspects provides insights into the overall impact of outsourcing on operational performance and organizational efficiency.

2.4 Theoretical Review

Resource Based View Theory

The Resource-Based View (RBV) theory, founded by Jay Barney in 1991, posits that organizations gain a competitive advantage by leveraging their unique resources and capabilities, which are valuable, rare, inimitable, and non-substitutable (Barney, 1991). According to this theory, a firm's internal resources, such as skilled personnel, proprietary technology, or efficient processes, are key to achieving and sustaining competitive advantage. In this study, the RBV theory suggests that the operational performance of outsourced property management tasks can significantly impact organizational efficiency if these outsourced services are well-aligned with the bank's core capabilities and strategic goals. By focusing on the strategic use of external resources (i.e., third-party property management services), the study aligns with assessing how outsourcing influences organizational efficiency, particularly in optimizing non-core functions to maintain competitive advantage.

2.5 Empirical Literature Review

A study by Kialyulo & Kinyua, (2021) investigated the relationship between strategic outsourcing and the performance of Kenya Commercial Bank (KCB) in Kenya. Utilizing quantitative methods, such as surveys and statistical analyses, the study explored how strategic outsourcing impacts various performance metrics. Findings indicated correlations between outsourcing initiatives and improved performance indicators at KCB, suggesting that outsourcing can enhance operational efficiency and financial performance. The study concluded that while strategic outsourcing benefits organizational performance, it did not directly address property management outsourcing or stakeholder satisfaction, indicating a gap that this study aims to fill.

The study by Nyameboame & Haddud, (2022) examined the impact of outsourcing on organizational performance, drawing on stakeholder theory and strategic management. Using quantitative research methods, including surveys and archival data, it assessed performance

metrics before and after outsourcing implementation. The results showed correlations between outsourcing practices and improved organizational efficiency, operational performance, and stakeholder satisfaction. However, the study lacked specificity regarding property management outsourcing within the banking sector, highlighting a gap that this study addresses by focusing on the nuanced effects of property management outsourcing on stakeholder satisfaction and organizational efficiency.

3.0 Methodology

This study utilized a Comparative Research Design to evaluate the impact of outsourced property management on organizational efficiency at Standard Chartered Bank and Citibank in Tanzania. The rationale behind this design, as noted by Lelissa (2018), is its ability to allow for a direct comparison of property management functions across the two banks, focusing specifically on operational performance. A quantitative research approach was adopted to collect numerical data that quantitatively assesses various efficiency metrics, including cost efficiency, operational performance, and stakeholder satisfaction. This methodological framework enables a structured assessment of the relationship between outsourcing and organizational performance, providing a clear snapshot of how each bank manages its property management functions.

The study targeted employees involved in property management functions at both banks, constituting a population of approximately 500 individuals. Using a probability stratified random sampling technique, the researcher divided the population into strata based on job roles, departments, and stakeholder involvement. A total sample size of 100 respondents was determined, with 40 from the Outsourcing Management Department, 10 from the Property Management Department, and 50 stakeholders. This approach ensured a representative sample that reflects the perspectives of various groups within each bank, allowing for a comprehensive understanding of operational performance.

Data were collected using structured questionnaires designed to gather quantitative insights into property management functions. These questionnaires included closed-ended questions addressing cost efficiency, operational performance, and stakeholder satisfaction. The data analysis involved both descriptive and inferential statistics which involve for Correlation analysis was employed to determine the strength and direction of relationships between outsourced property management tasks and organizational efficiency. Regression analysis, on the other hand, was utilized to predict the extent to which these tasks impacted overall efficiency, allowing for a more nuanced understanding of the influence of external property management on organizational outcomes, with the Statistical Package for the Social Sciences (SPSS) version 26 employed to manage and analyze the data effectively. To ensure the validity and reliability of the instruments, content validity was established through careful item selection, and a Cronbach's alpha of 0.782 indicated satisfactory internal consistency. This rigorous methodology facilitated the robust assessment of the operational performance of outsourced property management, providing meaningful insights into the impact on organizational efficiency.

4. Results

4.1 Response Rate and Demographic Profile of the Respondents

The study achieved high response rates of 98% for Standard Chartered Bank and 97% for Citibank, reflecting substantial engagement and interest from the participants. At Standard Chartered Bank, 98 out of 100 questionnaires were completed, with only 2% missing responses, while Citibank had 97 completed responses and 3% missing. This strong response rate enhances the reliability and representativeness of the data. Demographically, the sample from both banks was fairly balanced in gender, with females slightly outnumbering males. Age distribution revealed that most respondents were between 26-35 years old, followed by those aged 36-45 years. In terms of education, the majority of participants held bachelor's degrees, with a smaller proportion having diplomas or master's degrees. Experience in the banking sector varied, with a notable number having 6-10 years of experience, while others had 1-5 years or more than 10 years. Employment tenure data showed that most respondents had been with their banks for 1-5 years, with fewer having over a decade of service. This demographic profile provides a comprehensive view of the participants' backgrounds, contributing to a nuanced understanding of the impact of outsourced property management on organizational efficiency in both banks.

4.2 Descriptive Statistics

4.2.1 Operational Performance of Outsourced Property Management Tasks

The study presents the findings on the operational performance of outsourced property management tasks at Standard Chartered Bank and Citibank in Tanzania, using a Likert scale from 1 (very efficiently) to 5 (inefficiently).

Table 1: Operational Performance of Outsourced Property Management Tasks (195)

	N	Min	Max	Mean	Std. Deviation
Standard Chartered Bank					
Consistently Meet Deadlines for Maintenance and Repairs	98	1.00	5.00	2.3469	1.03647
Quality of Property Management Services	98	1.00	5.00	2.3265	1.04315
Outsourced Property Management optimizes resources and time effectively	98	1.00	5.00	2.3265	1.04315
Citibank					
Consistently Meet Deadlines for Maintenance and Repairs	97	1.00	5.00	1.8866	.84009
Quality of Property Management Services	97	1.00	5.00	1.8969	.83522
Outsourced Property Management optimizes resources and time effectively	97	1.00	5.00	1.9072	.86702

Source: Field data, 2024

Table 1 presents the comparative findings of operational performance in outsourced property management tasks for Standard Chartered Bank and Citibank. Standard Chartered Bank's mean scores for consistently meeting deadlines (2.35), quality of property management services (2.33), and optimizing resources and time effectively (2.33) indicate moderate performance with relatively high variability (standard deviations around 1.04). In contrast, Citibank shows lower mean scores for the same tasks: meeting deadlines (1.89), quality of services (1.90), and resource optimization (1.91), accompanied by lower variability (standard deviations between 0.84 and 0.87). This suggests that Citibank's outsourced property management performs more consistently and effectively compared to Standard Chartered Bank, whose performance, while more variable, is generally less favorable.

4.2.2 Organizational Efficiency at Bank after Outsourced Property Management

Table 2: Organizational Efficiency at Bank after Outsourced Property Management (N=195)

Performance	N	Min	Max	Mean	Std. Deviation
Organizational Efficiency through Resource Utilization at Standard Chartered Bank	98	1.00	5.00	2.0612	.88302
Organizational Efficiency through Resource Utilization at Citibank	97	1.00	5.00	2.1856	1.08330

Source: Field data, 2024

Table 2 reveals the organizational efficiency regarding resource utilization at both banks after outsourcing property management. Standard Chartered Bank has a mean score of 2.06 with a standard deviation of 0.88, indicating lower efficiency and less variability. Citibank shows a slightly higher mean score of 2.19 and a standard deviation of 1.08, reflecting a somewhat higher but still modest level of efficiency with greater variability. These results suggest that while both banks experience limited improvements in organizational efficiency from outsourcing, Citibank's performance is marginally better and more variable compared to Standard Chartered Bank's relatively stable but lower efficiency.

4.3 Inferential Statistics

4.3.1 Normality Distribution of the Data

Tables 3 and 4 present the normality distribution of data for both Standard Chartered Bank and Citibank.

Table 3: Outliers Normality Distribution of Data for Standard Chartered Bank

		Statistic	Std. Error
Consistently Meet Deadlines for Maintenance and Repairs	Mean	2.3469	.10470
	Skewness	1.016	.244

	Kurtosis	.765	.483
Quality of Property Management Services	Mean	2.3265	.10537
	Skewness	1.031	.244
	Kurtosis	.778	.483
Outsourced Property Management optimizes resources and time effectively	Mean	2.3265	.10537
	Skewness	1.031	.244
	Kurtosis	.778	.483
Organizational Efficiency through Resource Utilization	Mean	2.0612	.08920
	Skewness	1.713	.244
	Kurtosis	3.811	.483

For Standard Chartered Bank, the data exhibits positive skewness and kurtosis values, indicating a right-skewed distribution with a tendency towards heavier tails for variables like deadline adherence and quality of services. Notably, organizational efficiency shows extreme skewness (1.713) and kurtosis (3.811), suggesting significant deviations from normality.

Table 4: Outliers normality distribution of data for Citibank

		Statistic	Std. Error
Consistently Meet Deadlines for Maintenance and Repairs	Mean	1.8866	.08530
	Skewness	1.510	.245
	Kurtosis	3.448	.485
Quality of Property Management Services	Mean	1.8969	.08480
	Skewness	1.512	.245
	Kurtosis	3.509	.485
Outsourced Property Management optimizes resources and time effectively	Mean	1.9072	.08803
	Skewness	1.455	.245
	Kurtosis	2.916	.485
Organizational Efficiency through Resource Utilization	Mean	2.1856	.10999
	Skewness	1.227	.245
	Kurtosis	1.024	.485

Source: Field data, 2024

Conversely, Citibank's data also displays positive skewness and kurtosis, but with less extremity compared to Standard Chartered Bank. Particularly, Citibank's efficiency measure shows lower skewness (1.227) and kurtosis (1.024), reflecting a more moderate deviation from normality. Overall, while both banks' data suggest deviations from a normal distribution, Citibank's data appears somewhat less skewed and kurtotic than that of Standard Chartered Bank.

Then, Tables 5 and 6 show the results of normality tests for Standard Chartered Bank and Citibank using the Kolmogorov-Smirnov and Shapiro-Wilk tests.

Table 5: Tests of Normality for Standard Chartered Bank

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Consistently Meet Deadlines for Maintenance and Repairs	.315	98	.000	.828	98	.000
Quality of Property Management Services	.317	98	.000	.825	98	.000
Outsourced Property Management optimizes resources and time effectively	.317	98	.000	.825	98	.000
Organizational Efficiency through Resource Utilization	.395	98	.000	.687	98	.000

a. Lilliefors Significance Correction

For both banks, the Kolmogorov-Smirnov and Shapiro-Wilk tests yield significant results ($p < 0.05$) across all variables, indicating that the data for all measures significantly deviates from a normal distribution. Standard Chartered Bank's statistics reveal high p-values for all measures, suggesting non-normal distributions. Similarly, Citibank shows significant deviations from normality, though slightly less pronounced.

Table 6: Tests of Normality for Citibank

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Consistently Meet Deadlines for Maintenance and Repairs	.333	97	.000	.736	97	.000
Quality of Property Management Services	.337	97	.000	.734	97	.000
Outsourced Property Management optimizes resources and time effectively	.334	97	.000	.745	97	.000
Organizational Efficiency through Resource Utilization	.352	97	.000	.779	97	.000

a. Lilliefors Significance Correction

Given these results, which indicate non-normality in the data for both banks, the study undergoes non-parametric tests (Mann-Whitney U Test) for more appropriate for analyzing the data. These tests do not assume a normal distribution and would provide more reliable results in this context.

4.3.2 Non-Parametric Test

Table 7 presents the Mann-Whitney U test results for Standard Chartered Bank as reveal that the performance metrics related to meeting deadlines for maintenance and repairs, quality of property management services, and the effectiveness of optimizing resources and time all have the same test statistics: Mann-Whitney U = 24.000, Wilcoxon W = 214.000, and Z = -1.339. The asymptotic significance (2-tailed) for each measure is 0.180, and the exact significance is 0.286.

Table 7: Mann-Whitney U test for Standard Chartered Bank^a

	Consistently Meet Deadlines for Maintenance and Repairs	Quality of Property Management Services	Outsourced Property Management Team Optimizes Resources and Time Effectively
Mann-Whitney U	24.000	24.000	24.000
Wilcoxon W	214.000	214.000	214.000
Z	-1.339	-1.339	-1.339
Asymp. Sig. (2-tailed)	.180	.180	.180
Exact Sig. [2*(1-tailed Sig.)]	.286 ^b	.286 ^b	.286 ^b

a. Grouping Variable: Organizational Efficiency through Resource Utilization

b. Not corrected for ties.

These results indicate that there is no statistically significant difference between the groups based on the measures of organizational efficiency. Specifically, the p-values (both 0.180 and 0.286) exceed the common alpha level of 0.05, suggesting that the differences in performance metrics are not significant. This implies that, within the Standard Chartered Bank, the outsourced property management tasks are perceived similarly across the different metrics tested, and there is no significant difference in their effectiveness or quality as perceived by respondents.

Table 8 presents the Mann-Whitney U test results for Citibank indicate that the performance metrics regarding the consistency in meeting deadlines for maintenance and repairs, the quality of property management services, and the optimization of resources and time by the outsourced property management team show similar statistics: Mann-Whitney U values are 55.500, 55.500, and 55.000, with Wilcoxon W values of 331.500, 331.500, and 331.000, respectively. The Z-scores are -0.824, -0.824, and -0.834, and the asymptotic significance (2-tailed) values are 0.410, 0.410, and 0.404. The exact significance values are 0.477 for all tests.

Table 8: Mann-Whitney U test for Citibank

	Consistently Meet Deadlines for Maintenance and Repairs	Quality of Property Management Services	The Outsourced Property Management Team Optimizes Resources and Time Effectively
Mann-Whitney U	55.500	55.500	55.000
Wilcoxon W	331.500	331.500	331.000
Z	-.824	-.824	-.834
Asymp. Sig. (2-tailed)	.410	.410	.404
Exact Sig. [2*(1-tailed Sig.)]	.477 ^b	.477 ^b	.477 ^b
a. Grouping Variable: Organizational Efficiency through Resource Utilization			
b. Not corrected for ties.			

These results suggest that there are no significant differences between the groups based on the three metrics in Citibank. The p-values (all greater than 0.05) indicate that the perceived performance of outsourced property management tasks is consistent across the metrics tested. Thus, within Citibank, the outsourced property management team's effectiveness and quality are viewed similarly, with no statistically significant differences in their performance as perceived by the respondents.

4.3.3. Correlation Analysis

The correlation analysis for Standard Chartered Bank and Citibank, Tables 9 and 10, highlights distinct patterns in the relationship between outsourced property management tasks and organizational efficiency.

Table 9: Correlation Analysis for Standard Chartered Bank

		Consistently Meet Deadlines for Maintenance and Repairs	Quality of Property Management Services	The Outsourced Property Management Team Optimizes Resources and Time Effectively	Organizational Efficiency through Resource Utilization
Consistently Meet Deadlines	Pearson Correlation	1	.991**	.991**	-.001

for Maintenance and Repairs	Sig. (2- tailed)		.000	.000	.993
	N	98	98	98	98
Quality of Property Management Servicess	Pearson Correlation	.991**	1	1.000**	.000
	Sig. (2- tailed)	.000		.000	.996
	N	98	98	98	98
The Outsourced Property Management Team Optimizes Resources and Time Effectively	Pearson Correlation	.991**	1.000**	1	.000
	Sig. (2- tailed)	.000	.000		.996
	N	98	98	98	98
Organizational Efficiency through Resource Utilization	Pearson Correlation	-.001	.000	.000	1
	Sig. (2- tailed)	.993	.996	.996	
	N	98	98	98	98

** . Correlation is significant at the 0.01 level (2-tailed).

For Standard Chartered Bank (Table 9), the performance metrics related to meeting deadlines, service quality, and resource optimization are all highly correlated with each other ($r \approx 0.991$), yet none show a significant relationship with organizational efficiency ($r \approx -0.001$). Similarly, for Citibank (Table 10), while there are high correlations among performance metrics ($r \approx 0.993$ to 0.965), the correlation with organizational efficiency remains very low ($r \approx 0.023$ to 0.007). These findings suggest that while the outsourced property management tasks are closely related to each other, they do not significantly impact organizational efficiency in either bank.

Table 10: Correlation Analysis for Citibank

Consistently Meet Deadlines for Maintenance and Repairs	Quality of Property Management Services	The Outsourced Property Management Team Optimizes	Organizational Efficiency through Resource Utilization
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				Resources and Time Effectively	
Consistently Meet Deadlines for Maintenance and Repairs	Pearson Correlation	1	.993**	.958**	.023
	Sig. (2-tailed)		.000	.000	.820
	N	97	97	97	97
Quality of Property Management Services	Pearson Correlation	.993**	1	.965**	.021
	Sig. (2-tailed)	.000		.000	.835
	N	97	97	97	97
The Outsourced Property Management Team Optimizes Resources and Time Effectively	Pearson Correlation	.958**	.965**	1	.007
	Sig. (2-tailed)	.000	.000		.942
	N	97	97	97	97
Organizational Efficiency through Resource Utilization	Pearson Correlation	.023	.021	.007	1
	Sig. (2-tailed)	.820	.835	.942	
	N	97	97	97	97

** . Correlation is significant at the 0.01 level (2-tailed).

4.3.4 Regression Analysis

Table 11 presents the model summary for regression analyses conducted for Standard Chartered Bank and Citibank.

Table 11: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.010 ^a	.000	-.021	.89222
2	.057 ^a	.003	-.029	1.09882

a. Predictors: (Constant), The Outsourced Property Management Team Optimizes Resources and Time Effectively, Consistently Meet Deadlines for Maintenance and Repairs. 1=Standard Chartered Bank, 2=Citibank

For Standard Chartered Bank, the model has an R-square of 0.000, indicating that the outsourced property management metrics do not explain any variance in organizational efficiency. Similarly, Citibank's model shows a slightly higher R-square of 0.003, but it still suggests that the outsourced property management performance metrics have minimal explanatory power regarding organizational efficiency. The negative adjusted R-square values further confirm that the models do not fit the data well, indicating that other factors might be influencing organizational efficiency.

4.3.5 Analysis for Variance

Tables 12 presents the ANOVA results for Standard Chartered Bank and Citibank, respectively.

Table 12: ANOVA

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.008	2	.004	.005	.995 ^b
	Residual	75.625	95	.796		
	Total	75.633	97			
2	Regression	.371	3	.124	.103	.958 ^b
	Residual	112.288	93	1.207		
	Total	112.660	96			

a. Dependent Variable: Organizational Efficiency through Resource Utilization

b. Predictors: (Constant), The Outsourced Property Management Team Optimizes Resources and Time Effectively, Consistently Meet Deadlines for Maintenance and Repairs

1. Model for Standard Chartered Bank; 2. Model for Citibank

From table 12 presents ANOVA For Standard Chartered Bank, the F-value of 0.005 with a significance level of 0.995 indicates that the regression model is not significant, suggesting that the predictors (outsourced property management team effectiveness and meeting deadlines) do not significantly contribute to explaining organizational efficiency through resource utilization.

Similarly, Citibank's ANOVA results show an F-value of 0.103 with a significance of 0.958, further indicating that the model, which includes additional predictors like quality of property management services, also does not significantly explain variations in organizational efficiency. These findings highlight that outsourced property management metrics have a negligible impact on organizational efficiency in both banks.

4.3.6 Coefficient Analysis

Table 13 presents the coefficient analysis for Standard Chartered Bank and Citibank, respectively.

Table 13: Coefficient Analysis for Standard Chartered Bank

	Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.064	.224		9.205	.000
	Consistently Meet Deadlines for Maintenance and Repairs	-.063	.642	-.074	-.098	.922
	The Outsourced Property Management Team Optimizes Resources and Time Effectively	.062	.638	.074	.098	.922
2	(Constant)	2.136	.278		7.678	.000
	Consistently Meet Deadlines for Maintenance and Repairs	.193	1.105	.150	.175	.862
	The Outsourced Property Management Team Optimizes Resources and Time Effectively	-.239	.492	-.191	-.485	.629
a. Dependent Variable: Organizational Efficiency through Resource Utilization						
1. Standard Chartered Bank; 2. Citibank						

For Standard Chartered Bank, the coefficient analysis shows that the variable "Consistently Meet Deadlines for Maintenance and Repairs" has an unstandardized coefficient of -0.063, with a t-value of -0.098 and a significance level of 0.922, indicating no significant impact on organizational efficiency. Likewise, "The Outsourced Property Management Team Optimizes Resources and Time Effectively" has a positive coefficient (0.062), but it is also statistically insignificant, with a t-value of 0.098 and a significance of 0.922. These results suggest that both variables do not have a meaningful influence on the bank's organizational efficiency.

For Citibank, the variable "Consistently Meet Deadlines for Maintenance and Repairs" shows a positive coefficient (0.193), but it remains statistically insignificant, with a t-value of 0.175 and a significance of 0.862. Similarly, "The Outsourced Property Management Team Optimizes Resources and Time Effectively" has a negative coefficient (-0.239) with a t-value of -0.485 and a significance level of 0.629, also indicating no significant contribution to organizational efficiency through resource utilization. These findings are in line with those observed at Standard Chartered Bank.

5.0 Discussion of the Findings

5.1 Finding for Cost Efficiency of Outsourced Property Management Functions

The results indicate that cost efficiency from outsourcing property management functions has shown a marginal impact on organizational efficiency at both Standard Chartered and Citibank. According to the Transaction Cost Theory (TCT), outsourcing is expected to reduce operational costs by minimizing transaction costs such as search, negotiation, and monitoring expenses. However, the findings suggest that the cost advantages anticipated through outsourcing were

not fully realized. This aligns with the empirical study by Muo and Ochieng (2023), which found that while outsourcing can improve cost efficiency, the impact varies depending on the alignment of the outsourced services with the firm's internal processes. Contrarily, a study by Mabonesho (2022), which focused on Tanzania's public sector, reported significant cost reductions due to outsourcing, highlighting a potential sectoral difference. These variances could be attributed to the complexities in monitoring costs associated with external property management, as emphasized by TCT, or differences in the internal cost structures of the banks.

5.2 Findings for the Operational Performance of Outsourced Property Management Tasks

The analysis shows that the operational performance of outsourced property management functions has not substantially improved organizational efficiency in either bank. According to the Resource-Based View (RBV), firms can achieve superior performance by leveraging unique resources and capabilities. In this case, the limited improvement suggests that the outsourced services may not have fully integrated with the firm's internal capabilities, as posited by the RBV. This is consistent with the study by Nyameboame and Haddud (2022), which found that outsourcing only enhances operational performance when external services complement the firm's core competencies. However, Kialyulo and Kinyua (2021) presented a different outcome, finding that outsourcing led to significant operational improvements in Kenya Commercial Bank, likely due to better alignment with the firm's internal processes. The difference in findings may stem from the varying expertise of the external service providers, or how well the outsourced tasks were adapted to the banks' internal workflows.

5.3 Findings for Stakeholder Satisfaction with Outsourced Property Management Services

Stakeholder satisfaction with outsourced property management services showed mixed results, with neither bank reporting significant increases in satisfaction. According to Stakeholder Theory, considering and addressing the needs of all stakeholders is crucial for organizational success. The findings suggest that the outsourced services may not have fully met stakeholder expectations, resulting in moderate satisfaction levels. This aligns with Johnson and Smith (2021), who found that while outsourcing in the Nigerian banking sector enhanced some aspects of organizational efficiency, it did not consistently improve stakeholder satisfaction. Conversely, the study by Chen and Wang (2022) in the Chinese real estate sector indicated that stakeholder satisfaction increased significantly with outsourcing, potentially due to more specialized and tailored services. The differing outcomes could be attributed to the nature of the services being outsourced and the stakeholders' expectations, which may vary across industries and regions. This highlights the importance of ensuring that external service providers can deliver services that align with both operational goals and stakeholder needs, as emphasized by Stakeholder Theory.

6.0 Conclusion and Recommendation

6.1 Conclusions

The study aimed to investigate the impact of outsourcing on organizational efficiency by comparing property management functions at Standard Chartered Bank and Citibank in Dar es Salaam. The findings reveal that outsourcing property management tasks does not significantly correlate with enhanced organizational efficiency in either bank. For Standard Chartered Bank, there were no significant relationships between the efficiency of outsourced property management tasks and organizational performance. Similarly, at Citibank, while there were slight positive correlations in some areas, the relationships were not statistically significant. The results indicate that the operational performance of outsourced property management tasks did not substantially impact organizational efficiency in the banks studied. Therefore, the effectiveness of outsourcing property management in improving organizational efficiency appears limited based on the data collected from these two institutions.

6.2 Recommendations

Based on the findings, it is recommended that both Standard Chartered Bank and Citibank reassess their outsourcing strategies for property management. Emphasizing better alignment of outsourced services with organizational goals and monitoring performance metrics more closely could enhance efficiency. Both banks should also consider more robust evaluation criteria and periodic reviews to ensure that outsourced property management tasks contribute meaningfully to overall operational effectiveness. Additionally, exploring alternative outsourcing partners or adjusting service agreements may help in achieving the desired improvements in organizational efficiency.

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Effects of Supplier Relationship Management Strategy on the Performance of Public Organizations in Tanzania: A Case of MSD-Headquarter

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Abstract

Despite the importance of the Supplier Relationship Management strategy MSD still faces challenges. According to the Controller and Auditor General (CAG) report of 2020/ 2021), MSD had expired drugs worth TZS 4.43 billion the figure represents 3.4 percent of the cost of sale, which is higher than the acceptable ratio of 1 percent highlighting inefficiencies in MSD's procurement and supplies management practices in terms of communication, and coordination between MSD and its suppliers, which ultimately affect the performance of the organization. The persistent issue of excess expired drugs not only strains the department's financial resources but also affects the availability of medical supplies, potentially endangering public health. Supplier relationship management strategy is one of the crucial mechanisms in which both public and private organizations strive to improve performance, this study is going to assess the effect of Supplier relationship management strategy on organizational performance at MSD Head quarter. The study used Relational Governance Theory to explain the significance of Supplier relationship management strategy on performance of MSD. Mixed research approach was used, a cross-sectional research design was employed, and a stratified random sampling was used to obtain a sample of 87 respondents from MSD headquarters staff, questionnaire and interview methods were used to collect data. Descriptive analysis was carried out using mean and multiple linear regressions were adopted to analyze the effects of supplier relationship management on organization performance. The findings revealed that the supplier relationship management have a positive significant influence on organizational performance at MSD headquarters this shows that trade discount, Specification of a product/service, Joint Problem-solving and Information sharing is a significant component of supplier relationship management affecting the organization's performance. The researcher recommends that the Government should put more emphasis on the application of Supplier Relationship management strategy in procurement, in conclusion MSD should emphasize the implementation of Supplier Relationship management strategy in public procurement by formulating the policies and regulations that allow easy implementation on developing and managing suppliers in the public organizations while working on improving its weak points that affect the performance. Also, MSD should work in hand with government to enact policies that put more emphasis on the application of Supplier Relationship Management strategy

Keywords; *Supplier Relationship Management Strategy, organization performance, procurement,*

1.0 Introduction

One way to improve organizational performance is to identify the major categories of corporate expenditures and devise strategies to enhance value through procurement processes (Emon M, Khan T & Siam S 2024). This can be achieved by selecting and negotiating with suppliers, as well as by selecting and evaluating vendors in accordance with the business's current spending and procurement requirements (Mburu D, Karanja P & Ali F, 2021).

(Emon et al., 2024), a basic component of supplier relationship management (SRMS) is the development and management of significant suppliers, the internal functioning of the procurement function and the synchronization of purchasing with other company operations, to fulfill or surpass consumer expectations. Among many advantages of SRMS are lower costs, more operational effectiveness, easier access to dependable suppliers, higher-quality products and services, and the sharing of best practices. It is considered to be one of the most significant organizational functions. (Kimario & Mwangike, 2021). Supply chain management has received more attention than ever before because of the enormous potential for improvement in establishing a Supplier Relationship management strategy, thus obtaining a competitive advantage and lowering costs while improving the performance of products and services (Sadiqeen, 2023).

In industrial organizations, SRM is crucial for cost reduction and performance optimization? cite. There hasn't been a significant shift on what?? in the healthcare industry despite massive investments in innovation (Kuwawenaruwa A, Mkawia S & Manzi F, 2022) However, health service providers will be forced to optimize cost structures as well as the efficacy and efficiency of business interactions due to growing market dynamics and the application of economic principles (Emon et al., 2024), several studies have demonstrated that the presence of buyer-supplier interactions greatly improves the flow of corporate operations by mitigating a variety of uncertainties (Mburu Kiarie et al., 2021). Organizations can reduce their supplier base, improve delivery performance, accurately estimate demand, and achieve higher levels of organizational excellence by establishing buyer-supplier relationships (Mushi et al., 2021). It is noteworthy that associations with suppliers facilitate the acquisition of accompanying inventory and enhance an organization's operational capability if other suppliers are unable to fulfill their obligations (Kisinga et al., 2024). Procurement strategies that are strategic are essential for the public sector as well as for all other economic sectors, this is because spending on procurement has a big financial impact and needs to be properly managed (Ismail & Chagalima, 2022).

In Africa, almost every public organization needs to procure work, consultancy, non-consultancy services, or goods competitively for its operations (Ivambi, 2016). Supplier relationship management remains the main criterion in the performance of the organization (Mburu Kiarie et al., 2021).

In Tanzania Supplier Relationship Management can be a tool for improving social outcomes and promoting social responsibility (Mu & Wang, 2022). For the company to achieve its goals, there should be a SRMS that matches the organization's objectives and procurement plan

(Changalima et al., 2020). In most public institutions, implementing Supplier Relationship management has become an important approach given the increasing tendency for organizations to acquire supplies and other vital items (Maagi & Mwakalobo, 2023). Effective Supplier Relationship Management (SRM) is crucial for ensuring the performance of public organizations, particularly in sectors like healthcare, where timely and accurate procurement of essential goods such as medicines is critical (Mburu Kiarie et al., 2021).

1.1 Statement of the Problem

SRMS help organization to maximize its performance through attainment of the right materials or products at the right price, quality, quantity and at the right time through information sharing, joint problem solving, assistance on specification from the developed or managed supplier (Sadiqeen, 2023). Despite the importance of the Supplier Relationship Management strategy MSD still faces challenges. According to the Controller and Auditor General (CAG) report of 2020/ 2021), MSD had expired drugs worth TZS 4.43 billion the figure represents 3.4 percent of the cost of sale, which is higher than the acceptable ratio of 1 percent highlighting inefficiencies in MSD's procurement and supplies management practices in terms of communication, and coordination between MSD and its suppliers, which ultimately affect the performance of the organization The persistent issue of excess expired drugs not only strains the department's financial resources but also affects the availability of medical supplies, potentially endangering public health(Meyer et al., 2021). Therefore, the study seeks to examine the effects of Supplier Relationship Management strategy on performance at MSD, with the aim of identifying areas for improvement to enhance operational efficiency and service delivery.

1.2 General Research Objective

This study investigates the effects of the Supplier Relationship Management Strategy on public organizations' performance in Tanzania at MSD.

1.3 Null Hypothesis

Ho: Supplier relationship management has a positive significant effect on public organization performance at MSD headquarters.

2.0 Theoretical Literature Review

2.1 Definition of Key Terms

2.1.1 Procurement

A procuring entity may lease, buy, rent, or acquire works, goods, and services in any other way. This process is known as procurement, and it includes all activities related to obtaining works, goods, and services, such as narrating requirements, preparing, selecting, and inviting tenders, awarding contracts, and managing them (URT, 2019). Procurement, according to (Chenini et al., 2021), is the process of locating, deciding upon, and obtaining goods and

services from an outside source authorized by pertinent directives. This study is an acquisition of medical items through procedures without affecting the intended objective including economy, efficiency, and effectiveness.

2.1.2 Supplier Relationship Management Strategy

Supplier Relationship Management is a thorough method of handling how a company deals with the companies that provide the goods and services it needs (Mushi et al., 2021). A company's supplier relationship management is the process that establishes the terms of their interactions with suppliers. Supplier relationship management refers to setting up the supplier management system and designing strategic and operational procurement processes using sourcing policies (Kisinga et al., 2024). In order to continuously lower total ownership costs, manage risks, and improve performance (quality, responsiveness, reliability, and flexibility). purchasing and supply management is defined as a strategic, enterprise-wide, long-term, multi-functional, dynamic approach to choosing suppliers of goods and services and managing them as well as the entire value network from raw materials to final customer use and disposal (Okong'o Nichodemus Nyabuto, 2016)

2.1.3 Organization Performance

A more specific definition of procurement performance is an idea related to resource allocation in connection to the achievement of some expected output values (Matto & Nsimbila, (2021). On the other hand (Matto et al., 2021) assert that a qualitative and quantitative evaluation of the resource's use and management is conducted in addition to a breakdown of the values obtained and the costs of the inputs. Thus, apart from the acquisition price or expenditure (economic efficiency), procurement performance depends on the transaction's maximum efficiency and effectiveness. (Sadiqueen, 2023). In addition to the purchase price/cost. Procurement performance in this study refers to the deliverables related to procurement, such as economy, effectiveness, and efficiency (Kiplel, 2018).

2.2 Relational Governance Theory

The Relational Governance Theory (RGT) is a method developed as a specific form of interorganizational strategy that is distinct from traditional modes of markets and hierarchies, according to A Zaheer & N Venkatraman (1995). Although it also incorporates elements from other literary works, the relational governance paradigm presented here is mostly grounded in traditional Chinese philosophy. It has three main pillars or dimensions that are drawn from Confucianism: relationship, morality, and trust, which are to understand the factors pertaining to inter-organizational interactions in determining organizational performance, relational governance theory was implemented. The majority of business transactions include embodied interpersonal connections. (Mushi et al., 2021). Relational governance promotes exchange based on the preexisting relationships between suppliers and buyers as they collaborate to achieve mutual benefits. (Changalima et al., 2020) The current interaction between buyers and suppliers toward reciprocal advantages is connected to the buyer-supplier relationship. One

relational tool utilized in relational governance theory, for example, has been thought to be information exchange. (Grandia & Warsen, 2023) In order to further clarify the interactions between buyers and suppliers, further techniques might be information sharing, supply base reduction, and cooperative issue resolution cite. This implies that companies who have linked better with their suppliers could generate a more sustainable competitive advantage cite. In general, public procurement policies are associated with discriminatory actions that impede the opening up of domestic markets, restrict entry to international markets, increase the expense of the budget, and eventually reduce the competitiveness of the national economy (Bayo, 2021).

2.3 Empirical Review

Rany et al, (2018) investigated the actual link between organizational success in East Java, Indonesia, and strategic purchasing. The outcome shows that the relationship between the buyer and supplier as well as negotiating approach influence the effect of strategic purchasing on the productivity of a company. Furthermore, there is a clear correlation between strategic purchasing and organizational performance. Additionally, a company's performance is affected by its negotiation strategy as well as the relationship between its suppliers and buyers, with the former having a greater effect than the latter.

Salema (2019), on her study investigated the relationship between purchasing companies and function integration, buyer-supplier integration, logistics effectiveness in buyer-supplier relationships, and the impact of buyer-supplier integration on Tanzania's healthcare sector's logistic performance. Strong buyer-supplier integration is shown to dramatically improve performance through empirical analysis. The results also assert that a purchasing company's deep cross-functional integration creates an administrative framework that enhances the success of the company's deep supplier-buyer integration.

Due to the effects of globalization and heightened competition in commercial ventures, numerous companies have turned to enhancing their product delivery capabilities, enhancing quality and responsiveness to clients, and cutting costs (Mushi et al., 2021) In order to achieve a competitive edge, organizations must collaborate in order to reap the benefits of reduced competition, combined strategic resources, increased resource availability, and increased creativity and innovation. Finally, the enterprises will perform better by generating greater major profit (Mburu Kiarie et al., 2021).

Strategic procurement includes supplier relationship management as one of its constituents practices when the supplier relationship is well established and managed well it increases and improves the quality of services provided by the organization also it reduces cost overruns hence the organization to operate while cost saving, and improve the quality of service provided but when the relationship is not well established and managed the organization costs might increase, longer lead time might occurs during the provision of services also the poor quality of service might occur (Kisinga et al., 2024)

3.0 Research Methodology

3.1 Research Approach

The study examined the impact of Supplier Relationship management strategy on the performance of procurement at MSD by using a mixed research design to look on Procedures, elements from both qualitative and quantitative research are combined into a single study in a mixed-approach research study Harrison R, Reilly T & Creswell J, (2020).. Combining quantitative and qualitative methodologies can counter balance their respective limitations. It might provide stronger evidence and increase confidence in judgments and it can give results that are more accurate

3.2 Research Design

The research design serves as the framework or methodology for the study, acting as a sort of glue to hold all the necessary components of the research thesis together and provide the researcher with a tangible report (Saunders et al., 2017.). A cross-sectional research design was used for this case study in order to describe the current condition of affairs. This type of study design can be applied to gather data on people's beliefs, behaviors, attitudes, or any number of social or educational concerns at a single point of view.

3.3 Area of the Study

This study assesses the effects of Supplier Relationship Management strategy as a procurement practice on organization performance case of MSD Headquarters, Medical Store Department (MSD) as a case study, which is a government organization involved in a significant amount of procurement transactions (PPRA 2022-23) Therefore, MSD used as the area of this study so as to get valid information. Hence, MSD headquarters function as a useful criterion for this investigation improve

3.4 Population of the Study

Cooper and Schindler, (2014) describe the individuals, occasions, or documents that can provide the necessary data and provide answers to the research questions as the study population. The Medical Store Department (MSD), which employs a management team and an estimated 124 procurement professional specialists, was the site of this investigation (URT, 2023).

3.5 Sample and Sample Size

3.5.1 Sample

A sample is the number of representatives under which the groups of people or events are selected to represent the population as a whole. This is the small group of people where a researcher collects the required information for the intended study (Saunders et al., 2017.) The researcher selected a sample that was able to provide intended data as a representation of the

population of a relevant study. Under this study, a sample was comprised of heads of departments, managers, PMU members, and other staff who implemented the formulated strategies.

3.5.2 Unit of Analysis

The unit of analysis in this study was individuals who are 124 workers of the Medical Store Department (MSD), such as procurement professionals.

3.5.3 Sample Size

A sample is a subset of the intended population that the researcher will examine in order to draw broad conclusions about the population (Harrison et al., 2020), (Creswell, 2012). The number of components in a sample drawn from a big population is referred to as the sample size (Chileshe et al., 2023; Harrison et al., 2020). Every member of the selected sample should have an equal chance of getting chosen for this matter. The Yamane (1967) formula is used to determine the study's sample size.

$$n = N / \{1 + N(e)^2\}$$

Where:

n = Sample size

N = Population = 124

e = error estimates = 0.05

$$n = 124 / \{1 + 124(0.05)^2\} = 95$$

Therefore, the sufficient sample size for this study will be 95 respondents hence the provision of accurate information or data to the research study. In this study 18 staffs from the Procurement management unit, 9 staff from the Planning and coordination Unit, 9 warehouse keeper, 9 finance and accounting, 20 ICT department, 20 user department and the last 10 were drawn from the contract compliance unit. Also, the study comprises 10 head of departments as the key informants who were interviewed in this study.

3.6 Sampling Procedures

(Saunders et al., 2017.) Sampling procedures are the steps involved in selecting a sample to represent additional elements with comparable characteristics from the target population. As mentioned by, selecting a predetermined number of individuals to represent a particular group is known as sampling (Harrison et al., 2020).

3.6.1 Stratified Sampling

Selecting a sample to represent additional elements with comparable characteristics from the target population. As mentioned by, selecting a predetermined number of individuals to represent a particular group is known as sampling (Kothari, 2014). By analyzing the data separately for each stratum, researchers can identify unique trends, preferences, or behaviors that may exist within demographic or behavioral segments. Therefore, the study used stratified random sampling in order to distribute departments to get equal representation.

3.6.2 Purposive Sampling Techniques

It is also known as Judgmental or (Purposive) sampling. This is the method which requires the researcher to use their own rational judgments in selecting the kind of respondents depending on the research study and the nature of the data required. Under this research study researcher selected respondent's base on his own rational. Judgments mean that the chosen respondent was suitable to provide the preferred data, researcher respondents were coming from PMU and Head of departments and other related departments.

3.7.1 Primary Data

These are the data that was collected fresh from the field and for the first time, the researcher collected the primary data through semi-structured questionnaires, unstructured questionnaires, and interviews (Kothari, 2014)

3.7.2 Secondary Data

This is the kind of data that was collected based on the information obtained in the organization's textbooks, magazines, encyclopedias, articles, professional journals, trade journals, reports, and other information. (Kothari, 2014) said these are previously collected data that have already undergone statistical analysis by another party. They are kept on the office premises as a means of achieving a wide range of information.

3.8 Data Collection Methods

For the findings to be obtained data must be accumulated to provide the required information, to confirm or deny a claim, precise information must be gathered, a process known as data collection (Harrison et al., 2020). The research involved commonly primary data. The basic data are raw facts that are gathered from the field for the first time, they are also referred as "Original data" since they are not copied from any other sources of information, as per this study primary data were collected through questionnaires and interview.

3.8.1 Questionnaire

The benefits of this strategy include avoiding interviewer bias and making it convenient to meet with respondents who are difficult to contact (Harrison et al., 2020)(Kothari, 2019). The study

reduces the possibility of interviewer bias by using a self-administered survey including a Likert scale of one to five points. It also offers respondents convenience.

In this study, 87 respondents were given the questionnaires. Participants can independently and objectively rate their agreement or disagreement with each claim, guaranteeing more objective and precise data gathering. Additionally, the self-administered questionnaire format permits flexibility in data collection, which facilitates communication with and accommodation of respondents who might have restricted availability or schedule conflicts. Through the integration of these advantages into the research framework, the investigation seeks to optimize involvement, uphold impartiality, and get significant perspectives from the intended participants (Gupta and Gupta, 2011).

3.7.2 Structured Interview

The interview is a method of collecting data in which communication emphasizes questions and answers (Kothari, 2014). One-on-one interview with the researcher was conducted by the identified respondents of PMU departments and heads of other departments according to the sample from the population. The interview guide was used to guide the interviewer systematically. This technique was adopted due to its flexibility in investigating in-depth detail from the respondent. A sample of the interview guide (Appendix II). The approach allowed for systematic data gathering and facilitated the comparison and analysis of responses. By focusing on structured interviews, the study aims to gather valuable insights.

3.9 Data Analysis

The data analysis for this study included both qualitative and quantitative techniques. The quantitative information from the questionnaire was evaluated using multiple regression analysis and descriptive statistics. Although the associations between the variables were analyzed and their predictive ability evaluated using multiple regressions, descriptive statistics provide a summary of the results.

On the other hand, content analysis was used to examine the qualitative information gathered from the interview. This approach involves organizing, evaluating, classifying, and recoding the information gathered from the respondents to identify and explain themes or patterns. Content analysis enabled the researchers to derive meaningful insights and interpretations from the qualitative data.

Data analysis, according to (Lyimo & Mrema, 2022) is the act of organizing and cleansing data so that it may be readily understood and utilized to assist in decision-making. In order to guarantee proper interpretation and generate reliable results, the researchers in this study adhered to a strict data analysis procedure.

In order to examine the associations between the variables, the study also developed an equation model for regression analysis. This model was beneficial assess the impact of different

factors on the implementation of audit recommendations and contributed to a deeper understanding of the research topic.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where:

Y = Organization Performance

X₁ = Supplier Relationship Management

X₂ = Electronic Procurement

X₃ = Outsourcing strategy

ε = error term or residual

The coefficients β_0 , β_1 , β_2 , and β_3 represent the intercept and the slopes associated with each predictor variable.

3.10 Reliability and Validity of Data

3.10.1 Reliability

(Kothari, 2014) suggests that a study should demonstrate consistent findings if it were replicated with a similar group of participants in a comparable setting. To assess reliability, the researcher used Cronbach's alpha, a widely used reliability coefficient. According to (Lyimo & Mrema, 2022) Cronbach's alpha evaluates internal consistency by examining the relationships between individual test items and the overall test (internal coherence of data). A Cronbach's alpha coefficient above 0.9 is considered very good, above 0.8 is good, above 0.7 is tolerable, above .6 is uncertain, below 0.5 is poor, and below 0.5 is unacceptable. In this study, the Cronbach's alpha coefficient, ranging from 0 to 1, was used to assess reliability. The closer the coefficient is to 1.0, the higher the internal consistency of the scale's items.

3.10.2 Validity

The validity of a research study refers to how well the results among the study participants represent true findings among similar individuals outside the study (Harrison et al., 2020). To ensure the validity of the research instrument for assessing the effect of strategic procurement on achieving performance in Public Organizations specifically at the Medical Store Department, a pilot test was conducted with a selected group of staff members from MSD. Participants provided feedback on the questionnaires, allowing for necessary adjustments to improve content validity. This process enhanced the instrument's alignment with factors specific to MSD and contributes to the overall validity of the study's findings.

3.11 Ethical Consideration

The researcher prioritized the respect for respondents' autonomy by allowing them to decide when to participate in the study and obtaining informed consent before their voluntary participation. The confidentiality of the participants was strictly upheld during and after the research activity. Additionally, the researcher is committed to providing feedback to all stakeholders regarding the findings of the study, ensuring transparency and sharing valuable insights with the involved parties.

4.0 Findings and Discussion

4.1 The Effects of Supplier Relationship Management on Organization Performance at MSD Headquarters

Mean and standard deviation calculations were made as part of the descriptive statistics used in the investigation. Table 3 below displays the distribution of the outcomes for each item related to supplier relationship management.

The results in Table 3 indicate that the overall results for means score for all items included in supplier relationship management are above 3.00. This implies that, trade discount, product specification, problem solving and information sharing are important factors that can affect the organization execution. The findings are in harmony with those of are consistent with ours, which discloses that a supplier and buyer's relationship acts as a mediator between strategic purchasing and organizational success. Additionally, strategic purchasing has a direct impact on organizational performance. These conclusions were corroborated by qualitative research showing:

“...To enable real-time adjustments, the supplier's performance as well as the strategy's performance in preserving the supplier relationship are regularly assessed. As a result, in MSD, we developed KPIs and certain success measures to compare performance. Nevertheless, given the current state of the supply chain disruptions, port traffic, chip shortages, geopolitical concerns, and other supply chain stresses, the requirement for efficient supplier relationship management may be higher than ever...”(Key Informant Interview).

... At our institution, Supplier Relationship strategy enhances organizational performance by streamlining procedures, promoting the integration with supplier throughout the entire procurement process, and so on. For example, Supplier Relationship management enhances the effectiveness of the procurement process, management, and strategies development by collaborating with supplier from the initiation stage to finalizing the contract... (Key Informant Interview)

Table 4:1 Mean & SD of Supplier Relationship Management

Statement	N	Mean	Std. Deviation
Effective supplier relationship helps in trading discounts to a wholesaler or retailer	87	3.89	1.185
The supplier relationship helps the supplier and clients towards the specification of a product/service	87	3.71	1.130
The buyer-supplier relationship enables problem-solving arriving during procurement processes and negotiations	87	3.94	.969
Through the buyer-supplier relationship, there is a sharing of information between buyers and suppliers about strategic procurement	87	3.95	.975
Valid N (listwise)	87		

4.2 Inferential Statistics

The Effects of Supplier Relationship Management on Organization Performance At MSD Headquarters

The multiple regression analysis was used to show the effect of supplier relationship management on organization performance in MSD headquarters. Trade discount, product specification, problem solving, and information sharing were used as the variables to predict the supplier relationship management in organization performance at MSD headquarters.

4.2.1 Regression Model Goodness of Fit

Table 6 shows that the explained variation from the overall variance is shown by the coefficient of determination (R square), which is 0.749 (74.9%). Based on the explained variation exceeding the unexplained variation from the total variation, these results imply that the model has a strong match.

Table 4:2 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.865 ^a	.749	.736	.38084

Additionally, the analysis showed a residual of 11.893 and a regression of 35.397, as shown in Table 4.3below. These findings show that the model fits data well, which explains why regression results outperform residual data.

Table 4:3 ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	35.397	4	8.849	61.011	.000 ^b

Residual	11.893	82	.145
Total	47.290	86	

4.2.2 Variables in Equation

Inferential statistics were used to analyze the effect of supplier relationship management on organization performance in MSD headquarters. Hence the dependent variable (organization performance) is continuous variable the study adopted a multiple regression. Table 8 presents the information which is drawn in the following below mathematical equation of the multiple regression models.

$$Y = 0.911 + 0.262X_1 + 0.300X_2 + 0.303X_3 - 0.050X_4 + \varepsilon$$

Where:

X_1 = Trade discounts

X_2 = Specification of a product/service

X_3 = Problem-solving

X_4 = Information sharing

ε = Error term

Y = Organization performance

Table 4:4 Effects of supplier relationship on organization performance

Model	B	Std. Error	Beta	T	Sig.
(Constant)	.911	.284		3.211	.002
Trading discounts	.262	.036	.418	7.304	.000
Specification of a product/service	.300	.039	.457	7.768	.000
Problem-solving	.303	.045	.396	6.795	.000
Information Sharing	-.050	.043	-.065	-1.143	.256

The results in Table 4.4 reveal that trade discount has the p-value of 0.000. Since the p-value is below the significance level of 0.05, it can be revealed that trade discount is a significant component of supplier relationship management affecting the organization performance in MSD headquarters. Further, the trade discount has a positive regression coefficient (B=0.262) which implies that improvement in the trade discount will result in an increase in the performance of MSD The findings align with those of (Rany et al., (2018).) who demonstrated that both negotiation strategy and the buyer-supplier relationship have an impact on

organization performance. However, negotiation strategy has a greater influence on performance than the buyer-supplier relationship cite.

The results in Table 4.4 reveal that the specification of a product/service has the p-value of 0.000. Since the p-value is below the significance level of 0.05, it can be revealed that the specification of a product/service is a significant component of supplier relationship management affecting the organization performance in MSD headquarters. Further, the specification of a product/service has a positive regression coefficient ($B=0.300$) which implies that improvement in the specification of a product/service will result to an increase in the performance of MSD. The findings align with those of (Maranga & Nyambura, 2019) who demonstrated that there is a statistically significant positive relationship between tender document specification and procurement performance.

The results in Table 4.4 reveal that problem-solving has the p-value of 0.000. Since the p-value is below the significance level of 0.05, it can be revealed that problem-solving is a significant component of supplier relationship management affecting the organization's performance in MSD headquarters. Further, the problem-solving has a positive regression coefficient ($B=0.303$), which implies that improvement in joint problem-solving will result in an increase in the performance of MSD. These results were in harmony with those of (Kiplel, 2018) who revealed that procurement planning as a problem-solving technique encourages suppliers' performance in procurement processes.

The results in Table 4.4 reveal that information sharing has a p-value of 0.256. Since the p-value is above the significance level of 0.05, it can be revealed that information sharing is not a significant component of supplier relationship management affecting the organization's performance in MSD headquarters. Further, the information sharing has a negative regression coefficient ($B= -0.050$) which implies that improvement in the information sharing will result in a decrease in the performance of MSD by 5.0%. These results were supported by those of (Kimario & Mwangike, 2021) since too much sharing of information could lead to delays in the implementation of the contracts

5.0 Conclusion and Recommendation

5.1 Conclusion

A successful supplier relationship management facilitates the exchange of discounts to a retailer or wholesaler, which enhances organizational performance. The buyer-supplier relationship facilitates problem-solving during procurement processes and negotiations, which influences organizational performance. The supplier-client relationship aids in the specification of a good or service hence MSD to procure right medication and medical tools hence the performance to improve. Through joint problem solving between MSD and suppliers the solutions of the problems can be early obtain hence the performance of the organization to be improved. The exchange of information regarding strategic procurement between buyers and suppliers does impact the performance of the business through the buyer-supplier relationship.

Through strategic procurement, purchasing and disposal expenses are reduced, improving organizational performance.

5.2 Recommendations

The study's conclusions demonstrated the urgent need for MSD headquarters to enhance its performance through the Supplier Relationship Management Strategy, as indicated by the respondents' assessments of the role that Supplier Relationship management strategy plays in improving organizational performance. Procurement performance may be influenced by factors other than only supplier relationship management strategy, but since it has a direct impact on procurement performance, MSD head office must thoroughly examine their current procurement systems to find any weak points and make the necessary corrections. The following recommendations are made in light of the findings.

5.2.1 The Government

The report suggests that the government should prioritize the use of supplier relationship management strategy practices in the public sectors.

5.2.2 Policy Markers

The study suggests that more focus should be placed on the public sectors' use of supplier relationship management strategy by policy makers through the implementation of policies.

5.2.3 To the Organization

The MSD headquarters should set up a unit to assess its supplier relationship management strategy and the difficulties in putting them into practice in order to devise appropriate solutions. The unit should be staffed by qualified, experienced, and knowledgeable individuals who will lead the supplier relationship management strategy operations and streamline the majority of the current flaws in supplier relationship management strategy controls.

Market capability analysis ought to be a component of MSD headquarters' procurement management process. As a result, MSD headquarters will be able to evaluate the market's capacity to provide the goods and services it needs in the appropriate amounts, at the appropriate rates, and of the appropriate quality.

Additionally, MSD headquarters should focus on securing trustworthy suppliers with reasonable delivery dates that meet MSD headquarters' specifications. This will reduce the need for emergency purchases, which are typically costly and have a detrimental effect on MSD headquarters' performance.

6.0 Areas for Further Studies

The Effects of Supplier Relationship Management Strategy towards organizational performance at the MSD headquarters was examined in this study. The researchers recommend that more research be done on the evaluation of the challenges in implementing Supplier Relationship Management Strategy practices in the public sectors

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Economic Synergies of Conditional Cash Transfers and Public Works Programs: Evaluating their Combined Impact on Household Resilience

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Abstract:

Rural poor communities often face frequent economic shocks, prompting them to adopt various coping strategies. Safety net programs like Tanzania's Productive Social Safety Net (PSSN) can mitigate these impacts and build resilience. However, a baseline report showed that many households in the Conditional Cash Transfers (CCTs) and Public Works (PWs) programs still used negative coping strategies. This study intended to evaluate whether the Integration of both CCTs and PWs reduced the impacts of economic shocks and reduced negative coping strategies among poor households under the program. With the use of the Propensity Matching method (PSM) to estimate the program impacts, households increased resilience by reducing food shortage, health shocks, dwelling problems, distraction of crops and other miscellaneous shocks. Also, the programs reduced negative coping strategies, most of the households under the programs used their savings (mostly engaged in saving groups) to overcome the arisen shocks. However, the impact of the programs on economic shock management is very small; poor households use the little saved to insure themselves, hence disturbing investments for future consumption. Boosting households' self-insurance against economic shocks may require continuous participation in the program over multiple years.

Keywords: *CCTs and PWs programs, economics shocks, coping strategies, poor households, PSM*

1. Introduction

Poor people in rural communities tend to be exposed to a broad array of shocks. Poor rural households particularly are vulnerable to economic shocks because they rely on low returns economic activities, such as farming, casual labour, petty business, for which their returns are also highly variable and uncertain (Börner et al., 2015; Madzivhandila & Niyimbanira, 2020; Tiwari et al., 2022). Natural shocks such as droughts, floods, and earthquakes affect incomes from economic activities, either directly in self-employment, or indirectly as workers in activities (Bakhtiar & Rabbani, 2022; Macours et al., 2022). Climate change presents significant shocks, resulting in crop failures and declining agricultural productivity, which in turn worsens poverty and unemployment (Madzivhandila & Niyimbanira, 2020). Moreover, unemployment and illness of an adult member can imply loss of income (Cirillo and Tebaidi, 2016; Maluccio, 2010; Zhou, et al., 2023). It is true especially in rural areas that, illness or death of any family member requires unexpected expenditures. Economic shocks affect the extremely poor households particularly in rural areas. They result into consumption fluctuations (food shortage) hence deteriorates the household welfare, which necessitate the appropriate coping strategies (Abay et al., 2022).

However, households opt for coping strategies relevant to the occurred economic shocks (Yang et al., 2021). Reduction of household members by sending them away to other relatives and other people in the community or reducing number of meals, have been the major coping strategy for shortage of food. Social safety nets also help build household strength to economic shocks through increased savings and investments in productive assets, especially livestock holdings (Andrews et al., 2018). They also limit unfavorable coping strategies among households, including the use of child labor (Berdegue et al., 2024). Households tend to accumulate savings and assets in order to safeguard against economic shocks. However, coping strategies against economic shocks through sales of assets could deplete the household's already scant resources and future reduces their earnings capacity and productivity (Anderson, 2010; Ferreira & Schady, 2009). Asset depletion includes selling farming tools (e.g. Farm animals used in agricultural production), livestock, seeds, reserved food, harvesting premature crops, renting out land and other assets, as well as spending savings (Börner et al., 2015). Asset depletion is a very serious problem if the shocks re-occur, after a vast period it becomes difficult to rebuilt the asset levels and thus affect future savings and investment. Assets take the role of self-insurance and households with high asset wealth tend to cope with shocks in a more proactive way than those with low average asset wealth (Berdegue et al., 2024; Kassaw & Worku, 2023; Tadesse & Gebremedhin Zeleke, 2022). Therefore, the protection of assets and the use of non-negative coping strategies for poor households are important, necessitating government interventions through safety nets.

Safety net programs among welfare protecting programs have been found to mitigate the negative effects of economic shocks on households. These programs aim to protect the poor and vulnerable populations during periods of economic difficulties (Abay et al., 2022; Bowen et al., 2020; Kiendrebeogo et al., 2017). In Sub-Saharan Africa, agricultural and weather shocks were found to have a negative impact on household welfare status, highlighting the need for targeted policies to address these specific shocks (Amolegbe et al., 2022). Similarly, in the United States, more generous social welfare programs were associated with better administrative performance in delivering benefits to families in need, indicating that the capacity of public organizations to provide economic security is important (Compton, 2021). In South Africa, government social protection interventions, such as COVID-19 grants and unemployment insurance, were found to significantly reduce the likelihood of a decrease in household income or consumption, demonstrating the effectiveness of these programs as safety nets for low-income groups (Zhou et al., 2023). In Ethiopia, participation in the Productive Safety Net Program (PSNP) offset the adverse impacts of the COVID-19 pandemic on household food and nutrition security, highlighting the protective role of social protection programs, particularly for poorer households (Abay et al., 2023). In Niger, social transfers were found to be effective in dampening the impact of shocks on household consumption and vulnerability, contradicting the notion that social assistance is a disincentive for households to engage in coping strategies (Amolegbe et al., 2022). Economic shocks threatening Nigerian household sustenance include Agricultural and weather shocks which negatively affects household welfare. Additionally, social protection programs can enhance resilience against

shocks, as seen in the case of Ethiopia's Productive Safety Net Program, which reduced the adverse impact of drought shocks on household food security (Abay et al., 2022).

Safety nets are delivered to the target household either through conditional cash transfers (CCTs) or public works programs (PWs) while, in some programs both are integrated. Both CCTs and PWs are implemented as safety nets programs helping extremely poor household improve their living standard and reduce poverty, while attaining the sustainable development goals 2030 (SDGs). Many governments in the World have been implementing safety net programs, executed through various programs and systems including cash transfers intending to provide support to individuals or groups who are extremely in need (Amolegbe et al., 2022; Andrews et al., 2018; Bowen et al., 2020). The purpose of safety nets is to ensure that people have access to basic necessities, such as food, shelter, healthcare and financial assistance when they are unable to meet these needs on their own.

Tanzania's social safety net programs, particularly the Productive Social Safety Nets (PSSN), are essential in building household resilience against poverty and food insecurity. While the PSSN has been effective in reducing household vulnerability to poverty by 13.4%, a notable 13.9% of participants remain highly vulnerable (Msuha & Kissoly, 2024). Households affected by shocks, such as climate change and rising food prices, often resort to harmful coping mechanisms like child labor, which negatively impacts children's educational outcomes (Kauky, 2024). Although social safety nets can alleviate these pressures, combining them with productive investments has shown greater potential for resilience by helping households diversify income sources and better manage climatic variability (Emmanuel & Hepelwa, 2024; Macours et al., 2022). Additionally, the integration of land tenure formalization with PSSN participation has significantly improved farm productivity and food security, suggesting that standalone programs may be less effective than integrated approaches (Msangi et al., 2024). However, persistent challenges highlight the need for ongoing research to explore how best to adapt and integrate complementary strategies to maximize the effectiveness of social safety nets in addressing household vulnerability. Therefore, provision of both CCTs and PWs to the poor households one would expect not to trade off self –insurance but rather strengthen them (World Bank, 2020).

This study is built on the hypothesis that, integrated CCTs and PWs program has strengthened the self – insurance among the poor households along with smoothening consumption through non-negative coping strategies. Although there is limited evidence of the impact of the integrated programs in Tanzania, specifically linking the programs and the economic shocks as well as the opted coping strategies. Whereas, evidence from the baseline report for the Productive Social Safety Net (PSSN) program in Tanzania; identified that, a large proportion of households under the CCTs and PWs program were using negative coping strategies (NBS, 2016). Moreover, some studies show the impact of safety nets on social economics issues including education, health, gender and youth issues (Chzhen et al., 2021; Myamba & Grimard, 2017). Moreover, most of the studies have analysed the impacts of the programs separately (CCTs or PWs), leaving aside the integrated programs. This study intended to evaluate whether

Integration of both CCTs and PWs reduced the impacts of economics shocks and reduced negative coping strategies among poor households under the program.

After this introductory section, the remainder of the paper is structured as follows. Section two briefly reviews both theoretical and empirical evidences on impacts of CCTs and PWs programs in linkage to economic shocks management. Section three presents the methodology of this study; section four provides the estimated results and discussion of the findings. Section five provides conclusion in policy implication of this study.

2.0 Literature Review

2.1 Theoretical Framework for Economic Shocks and Coping Strategies

The Economic Theory of Risk and Insurance suggests that risk impedes capital accumulation because as capital increases, the marginal productivity and reward per unit diminish (Walleit, 2016). To mitigate risk, individuals save as a form of self-insurance, balancing the sacrifice of saving against its rewards. This saving continues until the perceived sacrifice equals the benefit, at which point saving halts. Reducing risk encourages higher savings and investment. Insurance transfers risk, reducing uncertainty, thus fostering capital accumulation and economic growth. Only the portion of accumulated funds meant to cover uncertain losses is included in insurance funds (Willett, 1951; Walleit, 2016). Government safety nets, such as CCTs and PWs programs, act as forms of insurance due to market failures that make household consumption smoothing inefficient (Gruber, 2016). However, the economic theory of “safety net expenditure allocation” posits that these programs should provide marginal benefits, such as improving equity, enhancing household welfare through investment, or improving risk management (Grosh et al., 2008). CCTs and PWs insure poor households against food insecurity, and health and education costs. However, these programs can lead to moral hazard, where individuals covered by unemployment benefits may be less motivated to seek new jobs. This can result in reduced self-insurance, lower labor supply, and decreased productivity, as fewer goods are produced (Willett, 1951). Despite this, it is hypothesized that CCTs and PWs strengthen self-insurance among poor households by helping them save, accumulate assets, and balance labor supply. Savings from these programs provide a financial buffer during difficult times, such as food shortages or illness (Liu & Hu, 2013), and can be measured in assets or cash held by households.

2.2 Empirical Evidence for CCTS and PWS Impacts on Economic Shocks and Coping Strategies

Recent empirical studies emphasize the vital role of safety nets in reducing food insecurity and enhancing resilience, especially among vulnerable populations and coping strategies. These programs have been particularly effective during economic shocks and crises, such as the COVID-19 pandemic globally. In developing countries, Ethiopia’s Productive Safety Net Program (PSNP) has also been effective in reducing seasonal hunger (Berhane et al., 2020). Cash transfers in Malawi have improved household food access, particularly during lean

seasons (Devereux & Sabates-Wheeler, 2021). Brazil's emergency cash transfers during the COVID-19 pandemic prevented large-scale food insecurity (Barbier et al., 2021) and also in Philippines (Guirindola et al., 2024). In Kenya, national cash transfers-maintained household food consumption levels during pandemic disruptions (Egger et al., 2021). These programs also improve diet quality. In Niger, cash transfers increased dietary diversity and children's micronutrient intake (Aker et al., 2020). School feeding programs in Ghana enhanced both food security and nutrition for students and their families (Aurino et al., 2020). Programs targeting women, such as Mexico's PROGRESA, improved child nutrition and household food consumption (Skoufias et al., 2019). Similarly, cash transfers in sub-Saharan Africa have been linked to increased household food security and dietary diversity (Slater & Holmes, 2020). In Malawi, Safety nets significantly enhance household resilience by increasing reliance on assistance from friends and family, reducing food consumption, and decreasing reliance on savings during economic shocks. Safety nets in Zimbabwe prevented the dissolving of savings (Manyanga et al., 2022). Graduation programs combining short-term safety nets with long-term livelihood support have significantly reduced poverty and improved resilience in countries like Ethiopia and India (Banerjee et al., 2019). Research in sub-Saharan Africa has consistently found that safety nets reduce the need for negative coping strategies, such as selling off productive assets or cutting back on meals. In Zambia, a study reported that cash transfer programs allowed households to maintain food security without resorting to harmful strategies, thereby improving their long-term resilience (Chiwona-Karlton et al., 2021). These programs demonstrate that safety nets can be a powerful tool not only for immediate food security but also for fostering long-term economic stability and resilience.

However, the effectiveness of safety nets on resilience is associated with other factors. (Macours et al., 2022) suggested that, safety nets combined with productive interventions can enhance household resilience by facilitating income diversification, smoothing and better protections against climatic shocks. Other scholars revealed that wealth level determined by asset ownership significantly impacts food security and coping strategies for rural households facing various shocks, including economic uncertainties (Berdegúe et al., 2024). Safety net programs in Bangladesh improved access to basic needs, thereby enhancing economic resilience, although the amounts provided were often insufficient for significant long-term impacts (Hasan et al., 2018). Similarly, in sub-Saharan Africa, targeting women through cash transfers has been linked to increased food security and household dietary diversity (Slater & Holmes, 2020). (Emmanuel & Hepelwa, 2024). Whereas, in Ethiopia, Participation in the PSNP is positively associated with household resilience, particularly when transfers are substantial and sustained over time. Continuous participation enhances resilience more effectively than sporadic support (Abay et al., 2022). Safety nets significantly improved food security and asset accumulation (Tadesse & Gebremedhin Zeleke, 2022) and increased income diversification (Emmanuel & Hepelwa, 2024). Boosting asset accumulation and income generation through diverse farming practices and better dietary diversity enhances household resilience (Manyanga et al., 2022).

Empirical findings from Tanzania demonstrate that Safety Nets have a significant positive impact on reducing household vulnerability. The Productive Social Safety Net (PSSN) program, for example, has successfully reduced household vulnerability to poverty by 13.4% (Msuha et al., 2024). Additionally, the combination of Conditional Cash Transfers (CCT) and Public Works (PW) programs has shown an even greater impact, further protecting households from economic shocks. Despite these successes, 13.9% of households remain highly vulnerable to poverty, and 20.6% are highly vulnerable to food insecurity (Msuha & Kissoly, 2024). These findings highlight the need for more comprehensive evaluations to better understand and address persistent gaps in reducing vulnerability to poverty and food insecurity. Research from Rwanda indicates that cash transfers do provide benefits to households in response to economic risks, although they may not succeed in lifting them above national poverty lines (Nirere, 2022). This highlights the ongoing need for research to elucidate the effectiveness of safety net programs in mitigating the adverse impacts of economic shocks on vulnerable households.

The previous studies provide comprehensive insights into the coping strategies employed by households facing economic shocks and the role of safety net programs in mitigating their adverse effects. Studies reveal that households' resort to various coping mechanisms, including reducing consumption, reallocating labor, seeking outside help, and employing child labor, particularly in rural areas (Bellon et al., 2020; Cirillo & Tebaldi, 2016). In India, poor rural households rely on government help during shocks (Pradhan & Mukherjee, 2018). CCTs and public works programs, have emerged as vital tools in enhancing households' resilience to shocks by smoothing consumption, reducing negative coping strategies, and improving financial stability (Daidone et al., 2019; Kabeer & Waddington, 2015; Zimmermann, 2023). However, the effectiveness of these programs hinges on factors such as program design, implementation, and individual characteristics (Green, 2021; Yang et al., 2021). Furthermore, studies emphasize the importance of social spending in reducing poverty during financial crises, highlighting the need for expanded social protection programs to strengthen household welfare and resilience (Chishimba et al., 2021; Kiendrebeogo et al., 2017; Premand & Stoeffler, 2022). Adaptive social protection programs have also been proposed as a means to address idiosyncratic shocks by providing targeted support to affected individuals or households, aiding in their recovery and building resilience (Bowen et al., 2020; Yang et al., 2021).

The literature extensively explores the vulnerability of poor rural households to economic shocks and their coping strategies, yet gaps persist in understanding the long-term efficacy and sustainability of safety net programs, particularly in mitigating shock impacts on household welfare. While acknowledging the short-term benefits of programs like CCTs and public works, research is limited on their lasting impacts on poverty graduation and resilience building. Moreover, challenges in program design and implementation are recognized, but further investigation into factors influencing effectiveness, including community dynamics and targeting strategies, is needed in Tanzania (Green, 2021; Msuha et al., 2024; Msuha & Kissoly, 2024). Understanding how these programs interact with socioeconomic factors to influence long-term household welfare is also crucial for informed policy decisions aimed at supporting vulnerable households in the face of economic shocks. This study had to deeply explain the

impact of the combined CCTs and PWs program on both the economic shocks and the coping strategies at household level. Previous studies on the impact of safety nets and resilience have employed various evaluation approaches, including randomized controlled trials (RCTs), quasi-experimental designs, and longitudinal surveys. RCTs, such as those used in evaluations of cash transfer programs, provide robust evidence of causality by comparing outcomes between treated and control groups (Egger et al., 2021). Quasi-experimental methods, like propensity score matching and difference-in-differences, have been frequently applied in contexts where randomized assignment is not feasible, helping to estimate the effect of programs such as Ethiopia's PSNP (Berhane et al., 2020).

3. 0 Methods for Data Analysis

3.1 Propensity Score Matching (PSM) Approach

Using PSM approach we examined whether households under CCTs and PWs programs experience different economic shocks (health, food shortage, dwelling, distraction of crops and death of livestock) from those of control households. We also assessed whether program beneficiaries' households opted non negative coping strategies or whether they relied more on borrowing or selling assets for financing the shocks compared to control households. The variables used here were adopted from the Coping Strategy Index (CSI) model. The CSI is a tool developed in Uganda, Ghana, and Kenya but has now been used for early warning and food security monitoring and assessment in at least nine other African countries and several in the Middle East and Asia (Anderson, 2010). The basic idea is to measure the frequency of these coping behaviors (how often is the coping strategy used?)

PSM comprises a two-stage process: in first stage, propensity scores for the treated and control samples are estimated using pre-treatment covariates in a logit model. In the second stage, treated households are matched to control households with similar propensity scores using a matching algorithm. For balance checking, for each covariate used in the regression model that generated the propensity scores, we compared the means between the treated households and matched control households using t-test. We performed analysis by using STATA software.

3.2 Measures of Treatment Variables

We consider households that benefited from both CCTs and PW programs as treated and non-beneficiaries to be control households. The Matching variables used to construct propensity scores included; Age (in age groups), indicator of sex (1 if respondent was female, 0 otherwise), indicator of marital status (1 if respondent is currently married, 0 otherwise) and multiple indicators for education of the respondent (1 if primary school completed, 0 otherwise; 1 if secondary school completed, 0 otherwise; 1 if high school completed, 0 otherwise; and 1 if college completed, 0 otherwise). Also, the social economic variable recorded before launch of the programs were household size, multiple indicators for living conditions were also used: improved drinking water sources (1 if the household had access to water from piped sources, 0 otherwise) and improved toilets (1 if the household has toilet facilities with flush or piped sewage system, or flush to septic tank, or poor flush latrine, 0 otherwise), lighting energy (1 if the household used solar or electricity, 0 otherwise); improved cooking stove (1 if the

household used open fire/stove with chimney or hood, or closed stove with chimney, 0 otherwise); floor type (1 if the floor of the household was hard floor such as tile, cement, brick or wood, 0 otherwise); and wall type (1 if the wall of the household residence was cement, brick, stone or wood, 0 otherwise).

3.3 Robustness Checks

Multiple matching algorithms were used, including nearest neighbour, stratification, radius and kernel matching, to compare outcomes for CCTs and PWs-treated households and controls.

3.4 Impact Results and Discussion

Challenges experienced in the study area included death of livestock, crop losses, destruction of dwellings, shortage of food, climatic issues (including drought and floods), health problems among household members and other miscellaneous shocks. Table 1 indicated the frequency of the shocks between the two groups, program beneficiaries against non-beneficiaries.

Livestock keeping, farming and labour mainly determine the economy of households in rural area. Looking at all the activities mentioned, they are subjected to economic risks. Table 1 indicates the distribution of economic shocks experienced by households of both Treated and control groups in the CCTs and PWs programs under TASAF in the study area. Both groups seem to suffer from the same shocks but with different magnitude. However, both groups responded to the occurrence of shortage of food 49.71 percent and 62.86 percent by treated and control respectively. Although the problem is high on the control group compared to the treated, but both faced high magnitude centrally the objective of the program. CCTs and PWs are carried out with main objective smoothening consumption, the study findings expected to measure the difference between the two groups. There is evidence of the positive impact for the safety nets on solving the problem of food shortage among the beneficiaries (Bastagli et al, 2016), also seen in this study findings, however the magnitude of the problem between the two groups is high. Next shock shown is health problem, which included, sickness of household members as well as death. However, the shocks affected both groups with only a small pace between the two groups. The CCTs and PWs program beneficiaries are expected to get access to healthcare services compared to the control group (Palermo et al., 2018). Therefore, there should be a big difference in terms of the response to health risks. However, table 1 indicates that, treated group responded by 41.71 percent to 49.14 percent responded by the households in the control group. The difference is very small compared to the expectation of the study as the program puts more emphasize on health issues by even getting them insurance cards (Mussa et al., 2022).

Table 1: Frequently Experienced Economic Shocks at Household Level

Economic shocks	Treated group (Percent %)	Control group (Percent %)
Death of livestock	15.43	3.43
Crops losses	22.26	25.14
Dwells destroyed	8	12.57
Shortage of food	49.71	62.86

Climate challenges	9.14	13.71
Health problems	41.71	49.14
Other challenges	1.71	3.43

The differences are well illustrated on Figure 1, Households under the program were in better position to reduce the hit of economic shocks compared to non beneficiaries. This could be attributed to the impact of the programs as they receive cash and get access to services like medical care, buy food and pesticides for crop production. The earning received from the programs helped beneficiaries to build improved houses compared to mad houses, which were easily destroyed. These impacts also could be supported by the results in previous empirical chapters that, program beneficiaries allocated they earnings on building materials.

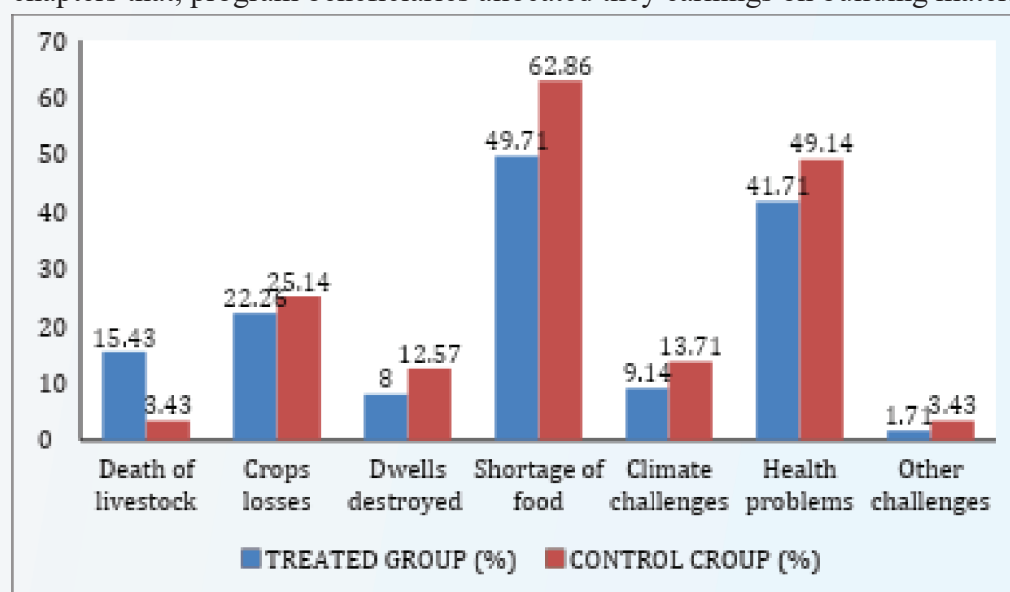


Figure 1: Economic shocks between treated and control groups
Authors' findings;

3.5 Econometric Results for the Impacts of CCTS And Pws On Economic Shocks

The PSM results, the ATT were derived from the nearest neighbor Matching logarithm (NNM). ATT coefficients are used to interpret the impact of the CCTs and PWs programs on household experienced shocks within six months. Table 2 shows the ATT results after PSM, that to some shocks there is a significant difference between the households under the program compared to households not in the program, while the programs did not affect other shocks. The CCTs and PWs programs significantly reduced the incidence of dwelling shocks by 11.1% to the households under the program. It also, very important to note that, PWs beneficiaries are paid lump sum amount of cash as wages, which allow them to buy housing materials like, bricks, iron sheets and cement while CCTs provides consumables such as food, clothes, health and education facilities. Thus, most of program beneficiaries owns improved houses compared to non beneficiaries.

Livestock death has been termed as a serious shock, that program beneficiaries reported many cases (14.9%) compared to non-beneficiaries. These results, although they are significant

indicating that CCTs and PWs programs increased the incidence of livestock death, it was due to the fact that, households under the programs owned more livestock compared to non-beneficiaries. However, it is true that, a household might overcome more than one shock in a period of six months. Households under the program significantly experienced differences in combined shocks compared to non-beneficiaries. Table 3, shows a decrease of 24.2% of both crop distraction and livestock death at 10% level of significance; Both shortage of food and crop distraction shocks decreased by 17.1%; health and food shortage shocks decreased by 10.8%; dwelling and food shortage shocks decreased by 27.8%; while food shortage and livestock death decreased by 25.8% all at 10% level of significance. For the economic theory of risks and insurance, both CCTs and PWs have impacted significantly on some risks such as dwellings, food shortage and distraction of crops and other shocks. These results support the theory behind the goals of the CCTs and PWs programs.

Table 2: Differences in Shocks Between Treated and Control Groups

Economic shocks	ATT	t-test
Shortage of food (%)	-0.9	0.10
Health shocks (%)	-2.3	0.27
Dwelling shocks (%)	-11.1*	1.95
Distraction of crops (%)	-5.1	0.72
Livestock death (%)	14.9**	4.64
Whether shocks (%)	-2.1	0.59
Both foods shortage and distraction of crops (%)	-17.1*	1.97
Both food shortage and health shocks (%)	-10.8*	1.52
Both food shortage and dwelling shocks (%)	-27.8*	2.22
Both food shortage and livestock death (%)	-25.8*	2.10
Both food shortage and whether shocks (%)	2.6	0.18
Both health and crops distraction shocks (%)	3.3	0.38
Both health and livestock death shocks (%)	6.1	0.48
Both health and whether shocks (%)	4.3	0.30
Crops distraction and livestock death shocks (%)	-24.2*	2.24
Both crops distraction and whether shocks (%)	-17.1*	1.59
Both crops distraction and dwelling shocks (%)	-11.1*	1.95

Author's computations using **nearest neighbor matching** approach for ATT between control and treated groups; Note: * P<0.1 **P<0.05 ***P<0.001

3.6 Impacts of CCTs And PWs on Coping Strategies

Descriptive findings of response to shocks by different coping strategies are shown in Table 3. There is small difference in the coping strategies opted between the treated and control groups under the CCTs and PWs programs. The study was done on several coping strategies including selling of durable assets, renting out land, use of savings made in terms of cash, drop out of children from school, child labour, borrowings, reducing the number of meals, selling livestock, sell of crops and seeking for help from either friend/neighbour/ organization. The

results on the response presented in Table 3 indicated that treated 22.29 percent of households use more of savings to solve economics shocks compared to 8.57 percent of households in the control group.

Table 3: Descriptive Results on Responses to Coping Strategies

Response to Coping strategies	Treated group (%)	Control group (%)	P-value	Mean diff (%)
Selling of Asset	0.001	2.29	0.02	-2.3**
Renting land	1.71	2.86	0.23	1.1
Use of savings	22.29	8.57	0.00	13.7***
Drop out of school	5.14	6.29	0.32	1.1
Sending children away	0.01	1.71	0.04	-1.7**
Borrowing	45.14	37.71	0.07	7.4*
Reduced meals	13.71	11.43	0.26	2.3
Sell livestock	4.57	1.71	0.06	2.9*
Sell crops	1.14	1.14	0	0
Seek for help	12	49.71	0.00	-37.7***

Author's findings using t-test; Note: * P<0.1 **P<0.05 ***P<0.001

This has made possible because most of the households (70%) in the program are involved in “the group savings” compared to around 6 percent of households in the control group (Table 3). Therefore, it is easier for the household member in the saving group to borrow some cash and solve the shocks occurred at that particular moment in time. Moreover, 45.14% of households in the CCTs and PWs program used borrowing as a coping strategy compared to 37.71 percent of non-beneficiaries in the control group. This has made possible because, program beneficiaries gained credibility to pay back their loans when they receive program payments (Daidone et al, 2015). Nonetheless, CCTs and PWs programs have reduced the strategy of begging for help, which is more seen among households in the control group scoring 49.71 percent response compared to 12 percent in the treated group.

3.7 Econometric Results of the Impacts of CCTs and PWs on Coping Strategies

PSM model was applied to assess impacts of the programs on the coping strategies opted by the poor households to overcome the occurred shocks. The Nearest Neighbor Matching (NNM) algorithm was used to match the response of households in the treatment and control groups. After matching the two household groups (Treated and Control), limited impacts were found compared to the impacts presented in the baseline study. Table 4 shows that households under CCTs and PWs significantly have increased the use of savings (10.6%) to solve the shocks. The use of savings as insurance to manage the economic shocks have implied on the theory of risks and insurance (Liu and Hu, 2013). The use of savings is not among the negative coping strategies as stated by the life cycle theory. More savings are of interest to create self-insurance during economic difficulties also supported by results of safety nets in Malawi (Andrews et al., 2018). Furthermore, the results show that CCTs and PWs have reduced sending children away (4.6%) during the shocks compared to non-beneficiaries at 10% level of significance also revealed in the review study (Andrews et al., 2018). This impact of the programs on

maintaining children at school during economic shocks is very important for human capital creation. One of the achievements expected by the program planners is increasing children enrollment to schools while smoothing consumption. It is believed that, education to children creates human capital as along term impact for future welfare improvement (URT 2013). Furthermore, the CCTs and PWs programs have helped the poor household from the problem of begging and seeking for help by 35.7% compared to non-beneficiary households.

Table 4: PSM Results on Coping Strategies

Response to coping strategy (%)	ATT	Unmatched (mean difference)
Selling of durable assets (%)	-2.3 (1.377)	-2.3** (0.02)
Selling of land (%)	0.6 (0.296)	1.1 (0.23)
Use of savings (%)	10.6* (1.86)	13.7*** (0.00)
Drop out of school (%)	2.3 (0.62)	1.1 (0.32)
Sending children away (%)	-4.6* (1.61)	-1.7** (0.04)
Borrowings (%)	8.6 (1.073)	7.4* (0.07)
Reduced number of meals (%)	5.7 (1.211)	2.3 (0.26)
Selling livestock (%)	2 (0.996)	2.9* (0.06)
Selling crops in farm (%)	-4 (1.621)	0
Begging/help (%)	-35.7*** (4.57)	-37.7*** (0.000)

*Author's computations using nearest neighbor matching approach for ATT; Note: * P<0.1
P<0.05 *P<0.001*

3.8 The Results Discussion

Comparing the findings to the baseline results whereby households under the program used the negative coping strategies including reducing meals to elders, and some skipped meals for the whole day. The programs strengthen household resilience by reducing exposure to some shocks such as crop destruction and destruction of dwellings. Although, to the large extent, results of this study some indicators (children drop out from school, sending children away from home, reducing number of meals) are not significant to tell the difference between treated and non-treated households. Therefore, the results imply that, both households (treated and control) remained almost exposed to the same shocks. The gap is very small, implying a need of

continuous participation in the two programs, also revealed in Ethiopia (Abay, et al., 2022). Again, the results implied that, both groups almost use the same coping strategies with small difference. Treated group used more of savings rather than begging strategy, observed in the control group. However, despite the insignificant differences of some coping strategies between treated and control groups, beneficiaries remained advantaged in some coping strategies. Some households used their savings and others used their savings to overcome economic shocks. More importantly, beneficiaries reduced selling assets during shocks instead they sold crops and income earned from petty business. Results on the effectiveness of CCTs and PWs programs on asset ownership in chapter five, households under the programs owned more assets compared to non-beneficiaries. This could be because beneficiaries had alternative means to overcome the shocks at disposal compared to non-beneficiaries. It is the expectation of the program, that safety nets boost insurance and resilience during shocks, which was revealed by other scholars (Abay et al., 2022, 2023; Bowen et al., 2020; Kiendrebeogo et al., 2017).

4. Conclusion

Households under the program presented somehow a relief on the economic shocks and coping strategies compared to households in the control group. Therefore, the implementation of both CCTs and PWs in the poor household increases their ability not to be exposed to economic shocks such as food shortages, health shocks, dwelling problems, the distraction of crops and other miscellaneous shocks. Moreover, CCTs and PWs have helped the beneficiaries to overcome the shocks by enhancing the poor household to use non-negative coping strategies. The findings presented that; most of the households under the programs used their savings (mostly engaged in saving groups) to overcome the arisen shocks. While the programs have reduced the negative coping strategies of dropping children from school and begging or seeking help. However, the impact of the program toward economic shocks management is very small, which indicates that, much of the CCTs and PWs earnings are spent on overcoming shocks such as health issues, dwelling, food and climatic effects. Spending on all these shocks reduces savings and productive investment, which in long run could provide for future consumption and cover future shocks. Encouraging long-term participation in CCTs and PWs, along with promoting financial literacy and access to savings groups, can strengthen household resilience by enhancing self-insurance and enabling better cash flow management for unexpected expenses.

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Single Custom Territory and Market Seeking FDI Inflows: Evidence from Selected Countries in Sub-Saharan Africa

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Abstract

This study investigated the impact of Single Customs Territory (SCT) on Foreign Direct Investment (FDI) in selected countries of Sub-Saharan Africa (SSA). The study employed quantitative methods using the Difference in Difference (DID) econometric technique to establish empirical evidence. The treatment and control groups were the East African Community (EAC) member states, and the control group was the randomly selected Sub-Saharan African countries, respectively. The time series data set from the World Development Indicators (WDI) for the period of 2000 to 2019 was used. The main findings demonstrate that EAC Single Customs Territory has a significant and positive impact on Foreign Direct Inflow

(FDI). The study implies that SSA should embrace a joint effort through SCT in order to increase the market size and boost their level of economic performance through FDI inflow, cost reduction and cross-border procedures during the broader transport of goods. Also, EAC governments should invest in strengthening their cooperation by working closely to mitigate challenges in the implementation of SCT so as to reap its maximum goals.

Keywords: *Foreign Direct Investment and Single Custom Territory.*

1. Introduction

For the past quarter of a century, globalization has shown an impressive rise in global Foreign Direct Investment (FDI). Despite such growth in global FDI, Sub-Saharan Africa has recorded a declining share of global FDI from 5.1 per cent in 2009 to 3 per cent in 2012, as compared to 26.0 per cent for Asia and 11.9 per cent for Central and South America (Darley, 2012). When compared to GDP levels, this figure is far less because the regional share is just 2.44 per cent of global GDP (Juma, 2012).

Some efforts have been put forth by SSA countries to attract FDI, including creating special investment zones and Export Processing Zones (EPZs) by providing investment incentives such as tax holidays that allow for duty-free imports of capital goods, production materials, and equipment. However, despite these efforts, SSA did not benefit from FDI from the 1980s to the 1990s. For example, it received only \$256 million in 1980 and \$9 billion in 1999, whereas the other developing countries attracted FDI inflows of \$7 billion in 1980 and \$216 billion in 1999 (Ideue, 2018).

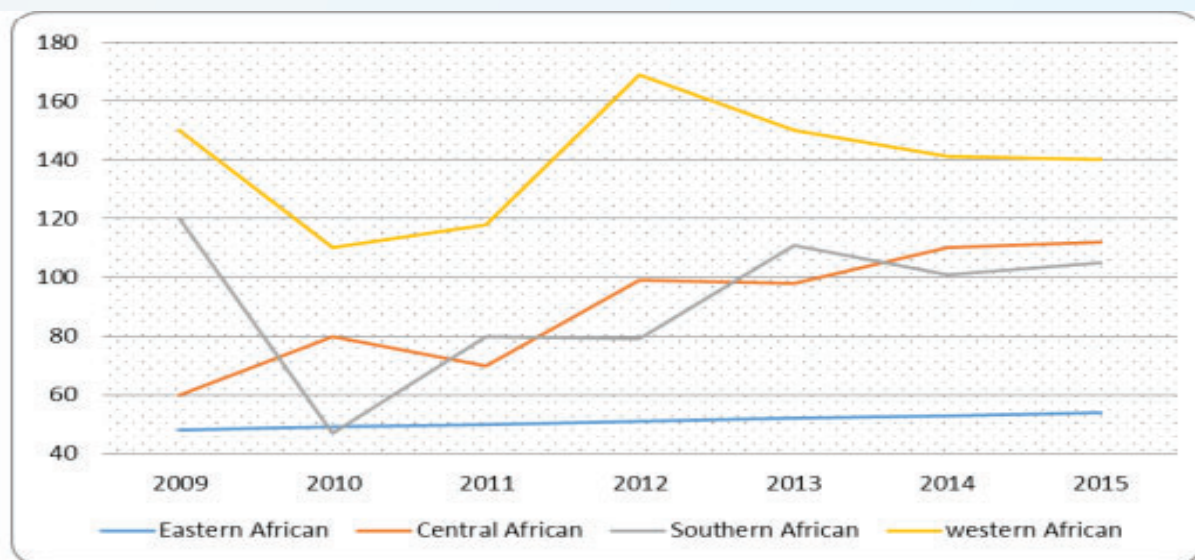


Figure 1.1: Trends of FDI inflow in SSA by sub region from 2009 to 2015(in '0' US \$ Billion)

Source: UNECA (2016)

In addressing the challenges of inadequate FDI inflows in Sub Saharan Africa some countries have embarked on joint initiatives while others continued to act independently. In 2014 for instance, the East African Community (EAC); Tanzania, Kenya, Rwanda, Uganda, and Burundi signed the treaty to implement a *Single Customs Territory (SCT)* by its member states. In a short period SCT has been impactful by the removal of restrictive regulations and minimization of internal border restrictions on goods moving between the member states with an ultimate realization of free circulation of goods.

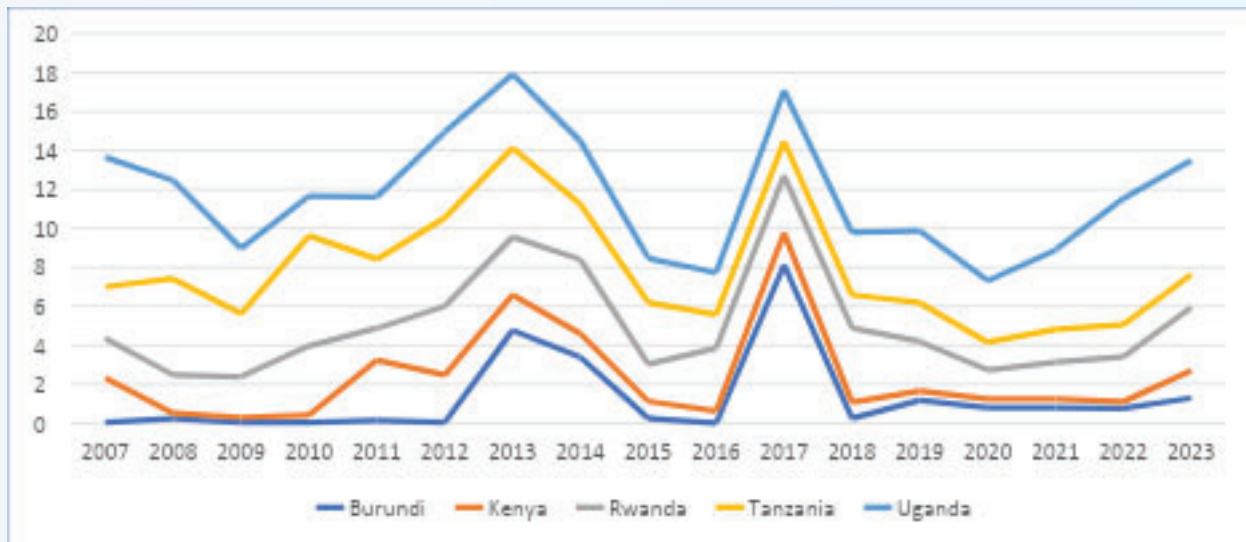


Figure 1.2: Trends of FDI inflows in EAC by country from 2007 to 2023(in % of GDP)

Source: WDI (2024)

Despite such initiatives put forth by EAC, some of the remaining states in SSA have not embraced such an approach and continue to act individually on their own perspectives in improving trade and investment inflows. This study, therefore, examines the impact of SCT on FDI inflows to countries which have adopted SCT against countries which have not adopted SCT based on EAC as a treatment case.

1.1 Objectives

1.1.1 General Objective

To explore the impact of single custom territory on Foreign Direct Investment in selected countries in SSA.

1.1.2 Specific Objectives

- i. To examine the effect of SCT adopted by EAC on FDI inflows compared to similar effects on countries which did not adopt SCT in SSA.
- ii. To examine the differences in FDI inflows to the EAC member states which adopted SCT based on market size compared to countries which did not adopt SCT in SSA; and

- iii. To examine the differences in FDI inflows to the EAC member states that adopted SCT based on access to seaports compared to countries that did not adopt SCT in SSA.

1.2 Rationale of the Study

The contribution of this proposed study stems on a novel idea on a comparative study between countries (in this case East African member states) which adopted an impactful SCT and other economies which did not in Sub Saharan Africa. SCT is believed to have increased business and investment inflows to EAC within a short period after being implemented. The achievements include but not limited to removal of hurdles to investment inflows in EAC through an agreed and recognized snap shot documentation at borders that is accepted by the rest of the members states regardless of which country approved the documents at entry point (Darley, 2012). Knowing the importance of SCT may encourage other countries to benchmark on the best practice of EAC on SCT to revamp the sluggish pace of economic development through FDI attraction especially in SSA region which experiences inadequate FDI inflows.

2.0 Related Literature

2.1 OLI Electric Theory of Market Seeking FDI

The theory underpinning this study is OLI Electric Theory of Market Seeking FDI. Dunning (1988) defined OLI as Ownership advantage, Location advantage, and Internationalization. The emphasis in the study is given to Internationalization in which; countries of FDI origin would wish to land their investments by taking advantage of the existing market niches of its prospective goods and services to be manufactured in the host countries. He further explained that internalization is preceded by realizing Ownership advantage through ownership of monopoly power, technology and economies of scale. The second to ownership is Locational advantage postulating economic, social and political advantages within the host countries which are necessary for investment decision.

The SCT implies a unified system of member states as one market; the united EAC sub-region, based on SCT terms, provides a conducive market through free movement and seamless movement of products just after entry to one of the member states border without border restrictions to other sovereign states. This removal of restrictions provides an attractive environment for Multinational Companies to invest in EAC by taking advantage of the existing market boosted by the border movement of partner state members.

2.2 Summary of Empirical Review

Little is known on the impact of single custom territory on foreign direct investment in Africa. This is because most of the studies conducted by various researchers, such as Kamau and Odongo (2020), Mbwapbo (2020), and Mpakaniye (2017), mainly focused on the SCT's effect on trade. This study explores the impact of SCT on FDI in SSA countries, which has not been conducted in the existing literature, and, therefore, gives recommendations in accordance with the revelation of the study. The study focuses on SSA states which adopted an SCT, based

on the comparative Difference in Difference (DID) approach, to provide a comparative finding between SSA countries which adopted SCT as a treatment group and SSA countries which have not adopted SCT as a control group.

3. Methodology

3.1 Research Approach

The study will employ the quantitative research approach and experimental strategy which seeks to determine if a specific treatment influences an outcome /impact by providing a specific treatment to one group and withholding it from another (Control Group), as the enquiry strategy for the study.

3.2 Econometric Model and Specification

The study employs Difference in Difference (DID) econometric technique that provides a comparative analysis between a treatment and control groups based on before and after time demarcations. Consider an experiment set to evaluate the impact of exogenous interventional shock such as policy that requires outcomes comparison between the effected/treatment group to an unaffected /control group, supported by time bound before and after the shock. In the same manner let's assume that there are two regions A and B subject to before and after shock context. Both regions are equally exposed to a shock free environment before a shock. The intervention time provides a cut off line into before and after periods. Assuming that region B is suddenly subject to shock intervention and exposed to after effects that result into a notable difference of group B relative to group A. The difference may be due to the shock intervention, but also might be due to other key characteristics that varies between the two groups which also determines the outcome differences, e.g. region A might be subject to different weather condition relative to region B which might be a contributing factor to the outcome difference in the level of business performance for instance. If the outcome is sales volume which also depends on whether that varies in the two regions, a favorable weather in region B relative to region A might also contribute to a better performance of group B apart from a shock intervention exposed to group B that needs to be evaluated. A better remedy for this overlapping is to evaluate the impact of the intervention by controlling for other characteristic difference between the two regions. It's difficult to control for unobservable characteristics, even if we have enough data to control observable ones.

However, apart from the difference in characteristics that might contribute positive changes experienced by region B, it might also be contributed by other changes in a course of intervention apart from the shock that cannot be captured. Now consider a double approach that comprises of after and before associated with the treatment and control group comparative approach.

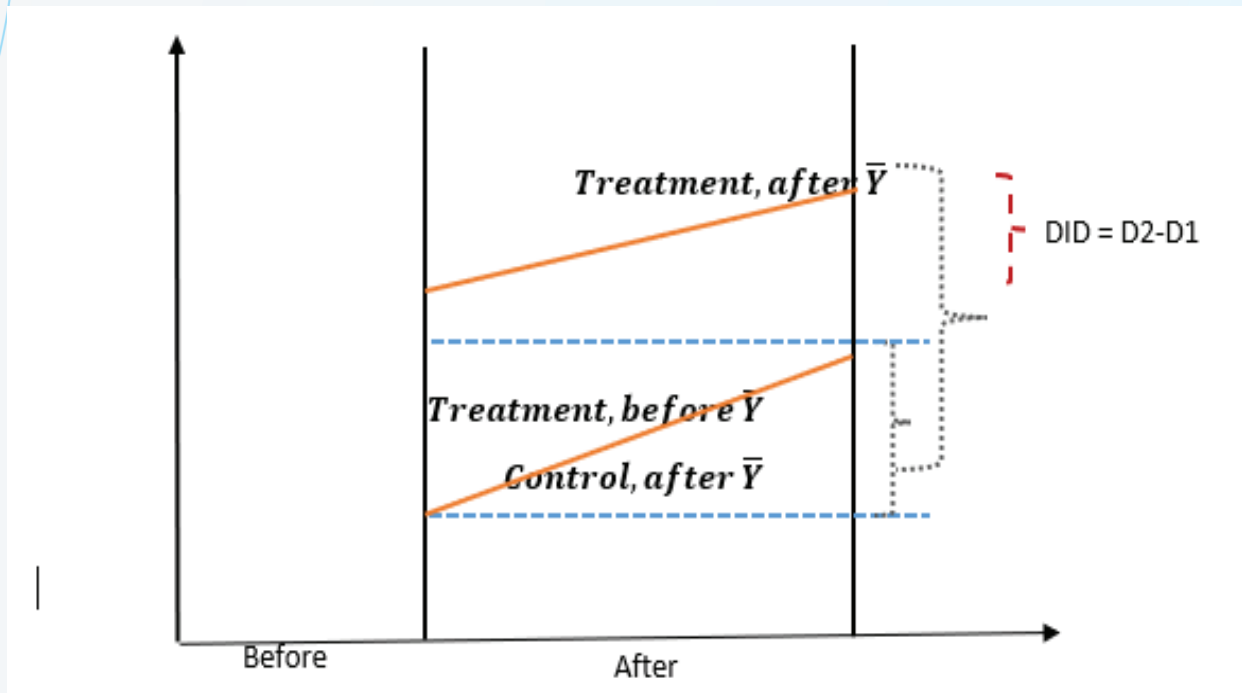


Figure 1.1: Difference in Differences Illustration

Source: Researchers' Own Construction

If the after and before difference in the control group emanates from the same difference in the treatment group, then if other changes that occur over time are also present in the control group, then these factors are controlled for when the control group after and before difference is netted out from the impact estimate.

Also, if there are important characteristics that are determinants of outcomes and that differ between the treatment and control groups, then, as long as these treatment and control group differences are constant over time, their influence is eliminated by studying changes over time so is for any time invariant unobservable characteristics which are also netted out.

Alternatively, the following mathematical equations elucidate the above pictorial presentation. Let us consider a two-group scenario $\{G=1, 2\}$ in two different periods $\{T=1, 2\}$. Initially at T_1 , both groups are exposed to control status. At T_2 is when only G_2 is exposed to treatment status, let $T_g=1$ represents a dummy variable capturing group 2 observations at T_2 while $P_t=1$ represents a dummy variable capturing treatment period 2 observations. In the two periods two groups DID, the treatment variable is simply the product of these two dummy variables: $D_{gt} = T_g \times P_t$. This is because $D_{gt} = 0$ is when both groups are exposed to the first period because $P_t=0$ and $T_g=0$; and $D_{gt} = 1$ only happens when the second group is exposed to the treatment because this is when both T_g and P_t dummies are equal to 1. Let's further assume that untreated expected outcome is given by

$$Y_{0gt} = 0 + 1T_g + 2P_t + gt \dots \dots \dots (1).$$

Before and shock intervention, the expected outcome in the first group is 0 in the first period while in the second period is $0+1$. The expected untreated outcome in the second group is equal to $0+1$ while in the second period is $0+1+2$. We assume a common trend applies where the coefficient on T_g provides a time-invariant difference in expected outcomes between the two groups. The group coefficient includes the combined effects of all the constant differences between the two groups and during the study period. Likewise, the coefficient P_t captures the changing combined effects between the two periods which also affect outcomes similarly in both cases. Practically, 1 is termed as the group effect and 2 the time trend. Basically, the model for the expected treatment outcome is the sum of untreated outcome and treatment effect, which is usually constant across observations:

$$Y(1)_{gt} = Y(0)_{gt} + 3 \dots \dots \dots (2)$$

Thus, generally the overall outcome is expressed as;

$$Y_{gt} = Y(0)_{gt} + D \{Y(1)_{gt} - Y(0)_{gt}\} \dots \dots \dots (3)$$

Replacing the outcomes notations with the model specification it gives;

$$Y_{gt} = 0 + 1T_g + 1P_t + g_t + Dg_t Y(0)_{gt} + 3 - Y(0)_{gt} \dots \dots \dots (4)$$

In the two-group two-period model, $Dg_t = T_g \times P_t$, which implies that after cancelling the $Y(0)_{gt}$ terms we to obtain the standard DID estimation equation:

$$Y_{gt} = 0 + 1T_g + 2P_t + 3T_g \times P_t + g_t \dots \dots \dots (5)$$

3.3 Identification Strategy and Estimation Technique

The DID econometric estimation technique was directly adopted from the aforesaid theoretical model as follows;

$$Y_{gt} = 0 + 1T_g + 2P_t + 3T_g \times P_t + g_t \dots \dots \dots (6)$$

where; Y_{gt} treatment outcome in this case FDI inflows while, 0, 1, 2 are constant terms for group and period coefficients respectively where 3 is DID coefficient. T_g is a group dummy 1 if is in treatment (firms which opted for SCT) and 0 otherwise, P_t is period dummy 1 if is after treatment period and 0 otherwise, $T_g \times P_t$ is a composite interaction term of the treatment effect while g_t is a composite error term. The model was executed under other key assumptions of DID model including the common trend parallel assumption, time invariant group characters and period time-variant attributes and strictly exogenous policy intervention.

3.4 Data and Data Source

The study employed data from a reliable source; the World Development Indicators (WDI) which provides FDI data for the countries worldwide. The FDI inflows data from 2003 to 2019 was considered the time period before the implementation of SCT by EAC member states which is from year 2000 to 2013, and the time period after implementation of SCT which is from year 2014 to 2019.

Table 3.1: The List of Member States Included in the Sample

S/N	Country	Group	Location
1	Tanzania	Treatment group	East Africa
2	Kenya	Treatment group	East Africa
3	Burundi	Treatment group	East Africa
4	Rwanda	Treatment group	East Africa
5	Uganda	Treatment group	East Africa
6	South Sudan	Control group	East Africa
7	Malawi	Control group	Central Africa
8	Mozambique	Control group	South East Africa
9	Mali	Control group	West Africa
10	Cameroon	Control group	West Africa
11	Ethiopia	Control group	East Africa
12	Djibouti	Control group	Horn of Africa
13	Zambia	Control group	Central Africa
14	Eritrea	Control group	East Africa
15	Somalia	Control group	East Africa

Source: WDI (2023)

Treatment group is the EAC member states which adopted SCT while the control group was remaining countries in SSA which adopted SCT strategy. The list of countries involved in the study is indicated in Table 3.1

4.0 Empirical Results

This section presents a discussion of the results obtained from the research. After a pre-estimation test for a common trend parallel assumption comes the baseline and primary results of the investigation. In the end, it discusses the robustness analyses that were done in order to evaluate the baseline findings on FDI based on SCT shocks to the EAC in comparison to the benchmark group that are non- EAC.

4.1 Baseline Results

Hypothesis (i): *There is no significant difference between countries that adopted a single custom territory and those that did not in terms of FDI inflow.* This null hypothesis was tested using the Difference-in-Difference econometric technique. The result indicates the proportion of variance in the dependent variable that is explained by the model's coefficient for the treatment variable, which is SCT proxied by DID. The findings presented in Table 4.1 indicate

that the DID variable is positive and statistically significant at one percent significance level. Therefore, the null hypothesis (H_0) was rejected and the alternative hypothesis (H_1) accepted. This suggests that there is a substantial difference in FDI inflow between countries in SSA that adopted SCT and those which did not. Based on estimation (1) on average, EAC member states that adopted SCT experienced a 6.5270 increase in FDI inflows compared to selected SSA member states that did not adopt SCT. The reason for relatively higher FDI to the EAC could be attributed by the availability of unified large market and investment catchment area as a result of SCT initiative of the EAC. Based on FDI theory by Dunning (1993) larger markets are more likely to attract FDI than smaller markets.

Table 4.1: Baseline Model on the Impact of SCT on FDI Inflows to EAC which Adopted SCT

VARIABLES	(1) FDI	(2) FDI	(3) FDI	(4) FDI
DID	6.5270*** (2.347)	7.8917*** (2.219)	6.6283*** (2.213)	6.5270*** (2.347)
Treatment	-14.5135*** (4.081)	-11.6361*** (1.408)	-15.0345*** (4.354)	
Time	-6.8510 (5.018)	-2.9283 (2.306)	-7.3006*** (2.057)	-6.8510 (5.018)
Constant	22.8458*** (4.397)	13.5651*** (3.528)	22.4121*** (3.884)	8.3323*** (2.981)
Year Dummy	Yes	Yes	No	Yes
Country Dummy	Yes	No	Yes	Yes
Observations	186	186	186	186

Robust standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

4.2 Robustness Checks

4.2.1 Market Size

Hypothesis (ii): *There is no significant difference in the Impact of SCT on FDI Inflow between large and small market economies within EAC compared to economies which did not adopt SCT in SSA.* This null hypothesis was also tested using a difference-in-difference econometric technique and a comparative analysis between countries in the treatment group between EAC member states with large market size and EAC member states with small market size to determine if there were differences in FDI inflows. Korsak (2017) analyzed the economies of the East African Community by defining their population size, therefore in this study, Tanzania, Kenya and Uganda were termed as large market economies with the population of more than 30 million people, while Rwanda and Burundi as small market economies, with the population of less than 30 million people. The first row of Table 4.2 displays the coefficient magnitudes of EAC member states with large and small market sizes respectively.

The estimates of the key variable DID for small and large market economies are positive and statistically significant by at least five per cent significance level. The null hypothesis (H_0) was therefore rejected, and the alternative hypothesis (H_1) was accepted. Based on estimation (1)

and (3), the coefficients for large and small markets are 6.3513 and 6.6021, respectively. This implies that even though EAC enjoys marketing seeking FDI inflows explained by Dunning (1993), the asymmetrical inflow of FDI is evident between large and small economies in EAC. It is very interesting that even small market economies indicate higher affinity to attracting FDI versus large market economies {6.6021:6.3513}. The probable reason could be unutilized opportunities within small economies due to the fact that priority for market seeking FDI investors is normally given to large market economies meaning that small countries come next after depletion of investment opportunities in large economies. Given the FDI inflow pace in African countries which gained momentum in 1980's, it is more likely that if from the beginning investors priority was given to large market economies in EAC, to date most of investors must have shifted their interest to small market economies other things being equal.

Table 4.2 Impact of SCT on FDI Inflow for EAC Based on Market Size

VARIABLES	Large Market		Small Market	
	(1)	(2)	(3)	(4)
	FDI	FDI	FDI	FDI
DID	6.3513*** (2.374)	6.5046*** (2.222)	7.3864*** (2.666)	8.7833*** (2.374)
Treatment	-8.5604*** (2.348)	-12.5587*** (1.505)	-15.4894*** (4.608)	-10.4470*** (1.602)
Time	-5.1793 (5.535)	-2.5232 (2.434)	-7.3006*** (2.061)	-6.5250*** (1.845)
Constant	9.6131*** (3.319)	12.3896*** (3.858)	22.4121*** (3.892)	12.8146*** (1.214)
Year Dummy	Yes	Yes	No	No
Country Dummy	Yes	No	Yes	No
Observations	159	159	145	145

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

4.3 Location

Hypothesis (iii): *There is no significant difference in the Impact of SCT on FDI Inflow between landlocked and close to seaport economies within EAC compared to economies which did not adopt SCT in SSA.* This null hypothesis was also tested using DID econometric technique and a comparative analysis between countries within EAC member states which are landlocked and EAC member states which have access to seaports in order to determine if there were differences in FDI inflows based on such locational differences. The first row of Table 4.3 (across column 1&2 and 3&4) displays the coefficient magnitudes of EAC member states which are landlocked and EAC member states which have access to seaports respectively.

The estimates of the key variable DID for landlocked and seaports access economies are positive and statistically significant by at least five per cent significance level. The null hypothesis (H_0) was therefore rejected, and the alternative hypothesis (H^1) was accepted. Based on estimation (1) and (3), the coefficients for landlocked and seaport access are 7.1994 and

5.6589, respectively. Landlocked economies indicate higher affinity to attracting FDI versus seaport access economies (7.1994:5.6589). The probable reason for relatively higher inflow level of FDI to landlocked could also be unutilized opportunities within landlocked economies due to the fact that before SCT priority was given to seaport access economies meaning that landlocked countries come next after depletion of investment opportunities in close to seaport access economies. It is more likely that from the beginning investors priority was given to close to seaport access economies in EAC due to geographical bottlenecks such as long distances to markets and higher transaction costs which characterize landlocked countries. Due to establishment of SCT some of the obstacles have been reduced and therefore, most of investors must have shifted their inflows to landlocked economies.

Table 4.3 Impact of SCT on FDI Inflow for EAC Based on Location

VARIABLES	Landlocked		Seaport Access	
	(1) FDI	(2) FDI	(3) FDI	(4) FDI
DID	7.1994*** (2.350)	8.0584*** (2.159)	5.6589** (2.554)	6.2673** (2.446)
Treatment	-15.3772*** (4.444)	-10.7591*** (1.398)	-8.3924*** (2.367)	-12.7672*** (1.582)
Time	-7.3006*** (2.060)	-6.5250*** (1.843)	-3.4868 (6.152)	-2.5606 (2.503)
Constant	22.4121*** (3.889)	12.8146*** (1.213)	9.6831*** (3.576)	12.3088*** (4.248)
Year Dummy	Yes	Yes	Yes	Yes
Country Dummy	Yes	No	Yes	No
Observations	158	158	146	146

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

5.0 Conclusion and Policy Implication

This study was conducted with the intention of investigating the impact that SCT has on FDI inflows based on market seeking theory. The study used the DID econometric model to establish empirical evidence. It adopted the quantitative research approach as its method of investigation. The treatment group consisted of the member states of the EAC, and the control group was randomly chosen countries from the SSA. In order to reveal empirical evidence, we utilized the time series data set that was compiled by the WDI and covered the period from 2000 to 2019. The findings revealed that EAC SCT have a significant impact on FDI inflows to EAC economies.

The findings indicate that due to the implementation of SCT, even small market economies have relatively attracted more FDI compared to large market economies. This may be due to the fact that before SCT, small market economies were unable to attract significant FDI due to

their market size as FDI is concerned with the size of the market in developing countries (Dunning 1988). Countries with large markets have a higher potential for FDI inflows than those with small markets not on a per capita basis, but rather in aggregate size (Akin, 2009). Due to SCT, the size of the market of small market economies has increased in aggregate.

Furthermore, the findings have established that due to SCT land-locked nations have experienced more FDI inflow compared to countries in close access to seaports. This may be due to the fact that initially the bottlenecks experienced by such countries and issues with high transport costs, complicated cross-border procedures, long distances and isolation from the global market mainly caused by limited access to the seaport which impeded such countries from attracting significant FDI inflows. However, with SCT, the cost of transportation and cross-border procedures have been reduced, hence more investments.

The study recommends that SSA countries embrace a joint effort through SCT to increase their market size, which will boost their economic performance and reduce costs and cross-border procedures during goods transportation.

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A Survey of the Awareness of Financial Inclusion among Rural youth Entrepreneurs

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Abstract: Although financial inclusion is a critical factor in fostering socio-economic development, rural youth entrepreneurs often face unique barriers that hinder their participation in both formal and informal financial systems. This study explores the awareness and barriers to financial inclusion among rural youth entrepreneurs. Data for the study was collected from 618 rural youth entrepreneurs across seven selected wards in Iramba District, Tanzania, using a cross-sectional survey. Descriptive statistics were used to analyze the data. The results reveal that the majority of surveyed rural youth are aware of various formal and informal financial services, including mobile money, community savings groups, support from family and friends, commercial banking, savings and credit cooperative societies (SACCOs), microfinance services, informal money lenders, and insurance products. Despite the significant awareness, actual usage remains low, particularly for formal financial products like bank savings accounts, insurance, and commercial banking services. The prime obstacles to greater financial inclusion include unreliable income, stringent collateral requirements, limited financial literacy, and high transaction costs. Additionally, factors such as religious beliefs and the distance to financial institutions further exacerbate exclusion. The findings highlight the need for tailored financial products and policies that accommodate the unique economic and social conditions of rural youth entrepreneurs, thereby fostering their financial inclusion and, ultimately, their socio-economic empowerment.

Keywords: *Financial inclusion, financial awareness, barriers to financial services, rural youth entrepreneurs, rural entrepreneurial activities.*

1. Introduction

Financial inclusion has become a critical driver of socio-economic development, particularly for youth entrepreneurs in rural communities. Defined as the access to and use of financial services by individuals and businesses, financial inclusion has the potential to empower rural youth by enabling them to invest in businesses, save, manage financial risks, and afford social services (Mishra et al., 2024; Solanki and Chhikara, 2024). Various types of financial services are integral to financial inclusion, broadly categorized into formal and informal services. Formal financial services are typically regulated and offered by recognized institutions, including banks, microfinance institutions, mobile money providers, and savings and credit cooperative societies (SACCOS) (Ozili et al., 2023; Sethy et al., 2023). These services encompass basic savings accounts, capital markets, government subsidies, credit facilities, insurance products, social security schemes, financial literacy initiatives, and digital payment systems. In contrast, informal financial services are community-based, unregulated, and often serve as an alternative means of financial support (Forkuoh et al., 2015 Yami et al., 2019). These include community savings groups, rotating savings and credit associations (ROSCAs),

informal lending circles, and financial support from family or friend networks. Informal financial services provide a flexible and accessible form of support tailored to local needs, especially where formal services are limited. However, such arrangements lack the security, scalability, and legitimacy found in formal institutions (Schreiner, 2000; Singh and Singh, 2023).

Rural youth entrepreneurs, particularly in emerging economies, primarily engage in agriculture, small-scale trade, and artisanal businesses, which form the backbone of rural economies. About 16% of the global population, amounting to 1.2 billion people, are young individuals aged 15 to 24 (UNESCO, 2020), with 67% of this population (nearly 800 million) residing in rural or semi-urban areas (United Nations, 2021). Given this significant population, access to financial services, such as credit, savings accounts, insurance, social security schemes, financial literacy programs, and transaction systems, is essential for advancing rural socio-economic development. Research indicates that financial inclusion fosters economic resilience, enhances asset accumulation, and promotes social stability (Nandi et al., 2022; Ndanshau and Njau, 2021), all of which are crucial for rural youth who face limited economic opportunities. Access to financial services helps finance start-up capital and operational costs, enables investments in micro-enterprises and small-scale agriculture, and scaling their operations. Insurance products, in particular, provide a safety net against business risks. Over time, these processes help rural youth entrepreneurs generate income, create job opportunities, enhance economic stability, and afford education and health services, ultimately improving their overall standard of living. Despite these potential benefits, evidence shows that rural youth often struggle to break free from poverty, with 93.6% engaged in vulnerable employment (Finscope, 2023). Moreover, the socio-economic activities of rural youth are often constrained by limited access to adequate financing options (Panakaje et al., 2023; Abdelghaffar et al., 2023).

Considering the potential of rural youth entrepreneurs in driving socio-economic development, the government of Tanzania, in collaboration with financial institutions, has spurred supportive policies and initiatives aimed at empowering rural youth entrepreneurs through financial inclusion. Key among these initiatives is the National Financial Inclusion Framework 2023-2028, which seeks to expand access to affordable financial services and products across all societal segments, including rural youth (Finscope, 2023). Besides, the Youth Enterprise Development Fund (YEDF), was established in 1994 to provide financial assistance and support to young entrepreneurs. Through YEDF, Tanzanian youth can access loans, grants, and business development services to start and expand their ventures (Mori, 2019). In conjunction with these efforts, various financial literacy programmes educate youth on key financial concepts, banking services, budgeting, and savings. More importantly, agent banking, point-of-sale systems, stand-alone ATMs, and mobile money services such as M-Pesa, Airtel Money, and Tigo Pesa have significantly enhanced FNI among Tanzanian youth, allowing them to engage in business activities and connect to wider markets (Dar and Ahmed, 2021; Lotto, 2018). These services and programs are empowering youth by providing essential financial skills and accessible solutions, including mobile banking, social security schemes, money

transfers, and bill payments. These initiatives have the potential to transform the financial landscape in rural areas, making it easier for youth entrepreneurs to access services and participate in the economy.

Despite the efforts and initiatives in place, however, achieving financial inclusion remains a complex challenge, particularly in rural areas where youth entrepreneurship holds the promise of driving local economies and fostering innovation. Statistics indicate that rural youth are among the most financially excluded groups in Tanzania. A survey by the Alliance for Financial Inclusion (2022) revealed that approximately 51% of rural youth lack access to both formal and informal financial services, with only 8% relying on informal sources. This is notably lower than the 76% FNI rate observed among the adult population (Finscope, 2023). This exclusion perpetuates socio-economic disadvantages in rural area, prompts urban migration, and limits pathways for upward socio-economic mobility. Without access to formal financial services, rural youth face significant obstacles in starting or expanding businesses, which restricts income generation and hinders economic growth. This exclusion exacerbates poverty, reinforces cycles of economic dependency, and increases vulnerability by limiting the ability to afford health services or invest in education ((Dar and Ahmed, 2021). Consequently, this makes rural youth rely on unstable income sources, such as subsistence farming or casual labour, which perpetuates their socio-economic challenges (Kuada, 2021; Lotto, 2018).

While considerable attention has been given to financial inclusion in general (Ahmed and Jianguo, 2014; Chakraborty and Abraham, 2021), there remains a gap in understanding the specific barriers and awareness among rural youth entrepreneurs. Much of the existing literature focuses on adult populations or urban youth (Ahmed and Jianguo, 2014; Mohammed et al., 2020). Ndanshau and Njau, 2021), often overlooking the unique barriers and perspectives of rural youth in accessing financial services. This gap highlights the need for targeted studies that investigate the barriers and awareness specific to rural youth on their path to financial inclusion. Drawing on this contextual gap, the present study provides novel insights by conducting a comprehensive survey of the awareness and barriers faced by rural youth entrepreneurs regarding financial inclusion. The study offers valuable policy implications and intervention strategies for policymakers, financial institutions, and development agencies to help bridge the financial inclusion gap and empower rural youth entrepreneurs. Furthermore, the study's findings highlight areas for tailored financial products and services that align with the needs of rural youth, thus contributing to the broader goal of inclusive socio-economic development.

2. Research Methods

2.1. Research Design and Study Area

A cross-sectional descriptive research design was employed in this study to capture the prevalent patterns of awareness and barriers to financial inclusion among rural youth entrepreneurs in Iramba District, located in Tanzania's Singida region. A cross-sectional descriptive design is ideal for studies aiming to provide a snapshot of and systematically describe and interpret existing conditions or behaviours without manipulating variables, at a

single point in time (Mugenda & Mugenda, 2003). It is well-suited for understanding 'what' is happening in a particular context. This design was particularly suitable for this study, as it enabled a timely assessment of the current state of financial inclusion awareness and the barriers faced by youth in rural areas. Iramba District was selected for this study for two main reasons. First, the district represents a rural context where youth entrepreneurship is gaining prominence, and financial inclusion initiatives are becoming increasingly important (Finscope, 2023). Second, Iramba has a comparatively high youth population, accounting for 24% of its total population, which is substantial relative to other districts in the region (URT, 2022). Besides that, the Singida region as a whole has the lowest level of financial inclusion in the country (53%), compared to other regions (Finscope, 2023). These factors make Iramba District a particularly relevant area for studying the awareness and barrier to financial inclusion among rural youth entrepreneurs.

2.2. Sampling and Data Collection

The present study employed a multi-stage sampling approach, combining purposive and random sampling, to select the study area and primary unit of observation. In the first stage, purposive sampling was used to select the Singida region, one of Tanzania's 31 administrative regions, as the study area due to its notably low level of financial inclusion (Finscope, 2023). In the second stage, Iramba District, one of the seven administrative districts of Singida region was chosen based on its relatively high youth population (URT, 2022). In the third stage, seven wards were randomly selected from the 20 wards within Iramba District. These were Mgongo, Mtekente, Mtoa, Ndago, Ntwike, Shelui and Urughu. Finally, in the fourth stage, a simple random sampling method was applied to select individual participants (rural youth entrepreneurs) for the survey. During this stage, a structured questionnaire was physically and proportionally distributed to 689 rural youth, drawn from a list of 32,501 rural youth across the selected seven wards in Iramba District, between June and September 2024. This approach ensured a representative sample of rural youth, allowing for the capture of diverse perspectives on their awareness of and barriers to financial inclusion. Out of the 689 questionnaires distributed, 648 were returned, yielding a response rate of 94.05%, which is sufficient for data analysis and enhances the validity of the study's findings.

2.3. Data Analysis

In this study, descriptive statistical analysis, specifically frequency and percentage distribution, was used to analyse quantitative data on the awareness and barriers to financial inclusion among rural youth entrepreneurs. Frequencies and percentages are particularly useful for describing and interpreting categorical and nominal data (Mugenda & Mugenda, 2003), providing a clear and straightforward view of response distributions. In this study, descriptive statistical analysis (frequency and percentage) facilitated the identification of prevalent patterns and trends within the data, offering an accurate and interpretable snapshot of financial inclusion awareness and barriers among rural youth entrepreneurs in the study area.

3. Research Findings

3.1. Sample Characteristics

Table 1 presents the sample profile of youth entrepreneurs included in the survey. Among the sampled rural youth entrepreneurs, approximately 54% were male, while the remaining 46% were female. The average age of the sample population was 23.79 years, aligning with the study's focus on rural youth entrepreneurs. The analysis also reveals that 74% of the rural youth entrepreneurs were married, whereas 26% were either single or divorced. In terms of geographic distribution, the majority of respondents (14.97%, n=97) were from the Mtekente ward, followed by Ndago (14.81%, n=96) and Urughu (14.66%, n=95) wards. Mtoa and Ntwike wards were represented by 13.58% (n=88) and 13.73% (n=89) of the rural youth entrepreneurs, respectively. Regarding education levels, about 29.01% (n=188) of the respondents had completed secondary school, followed by 27.47% (n=178) with primary education. Only 10.19% (n=66) of the sampled rural youth entrepreneurs held at least a bachelor's degree. Lastly, the analysis highlights that a significant majority, 91.67% (n=594), of the respondents engage in both agriculture and livestock activities, while 49.07% (n=318) are involved solely in crop farming. Additionally, 47.69% (n=309) were traders of non-agricultural products, and 45.83% (n=297) traded in agricultural products. Formal sector salaried rural youth accounted for the smallest proportion of the sample, representing only 14.35% (n=93).

Table 1. Summary Statistics of Sampled Respondents (N = 648).

Variables	Mean	Std. Dev.
Age (Years)	23.79	11.03
Gender (Male = 1, Female = 0)	0.54	0.24
Marital status (married = 1; otherwise = 0)	0.74	0.18
Wards (%):		
Mgongo	93 (14.35%)	
Mtekente	97 (14.97%)	
Mtoa	88 (13.58%)	
Ndago	96 (14.81%)	
Ntwike	89 (13.73%)	
Shelui	90 (13.89%)	
Urughu	95 (14.66%)	
Level of Education (%):		
Primary Education	178(27.47%)	
Secondary School	188(29.01%)	
Diploma	123(19.98%)	
Tertiary education	93(14.35%)	
Bachelor Degree +	66(10.19%)	
Revenue generating activity (%):		
Crop farming	318 (49.07%)	
Agriculture and livestock	594 (91.67%)	
Casual labor	203 (31.33%)	

Traders - non-agricultural products	309 (47.69%)
Traders - agricultural products	297 (45.83%)
Service providers	186 (28.70%)
Formal sector salaried	93 (14.35%)
Others	179 (27.62%)

Source(s): Table by the author.

3.2. Sources of Finance for Rural youth Entrepreneurs

Figure 1 illustrates the primary sources of finance for rural youth entrepreneurs in the study area. A substantial proportion of rural youth entrepreneurs, accounting for 50.46%, obtain funds to support their socio-economic and entrepreneurial activities from informal money lenders. This is followed by financial support from family or friends (32.87%), community saving groups (31.48%), and rural credit fund associations (30.56%). These findings align with empirical research by Obiora and Nwokorie (2018) and Panakaje et al. (2023), which identify informal financial services as the main sources of finance for the majority of the rural population, including rural youth entrepreneurs. The study further revealed a limited number of rural youth entrepreneurs with access to formal financial services. For example, bank loans accounted for the least significant source of finance, at only 6.94%, followed by government subsidies (8.33%) and funding from microfinance institutions (12.19%). Other sources included cooperatives or SACCOS (15.28%), religious organizations (13.27%), mobile money (21.45%), salaries from employers (27.16%), and alternative sources (11.11%). Overall, the results indicate limited access to formal financial services for most rural youth entrepreneurs. This state of affairs can be attributed to challenges related to financial inclusion in rural areas, such as restricted access to formal financial services, financial illiteracy, and stringent documentation requirements, as highlighted by Finscope (2023) and Lotto (2018).

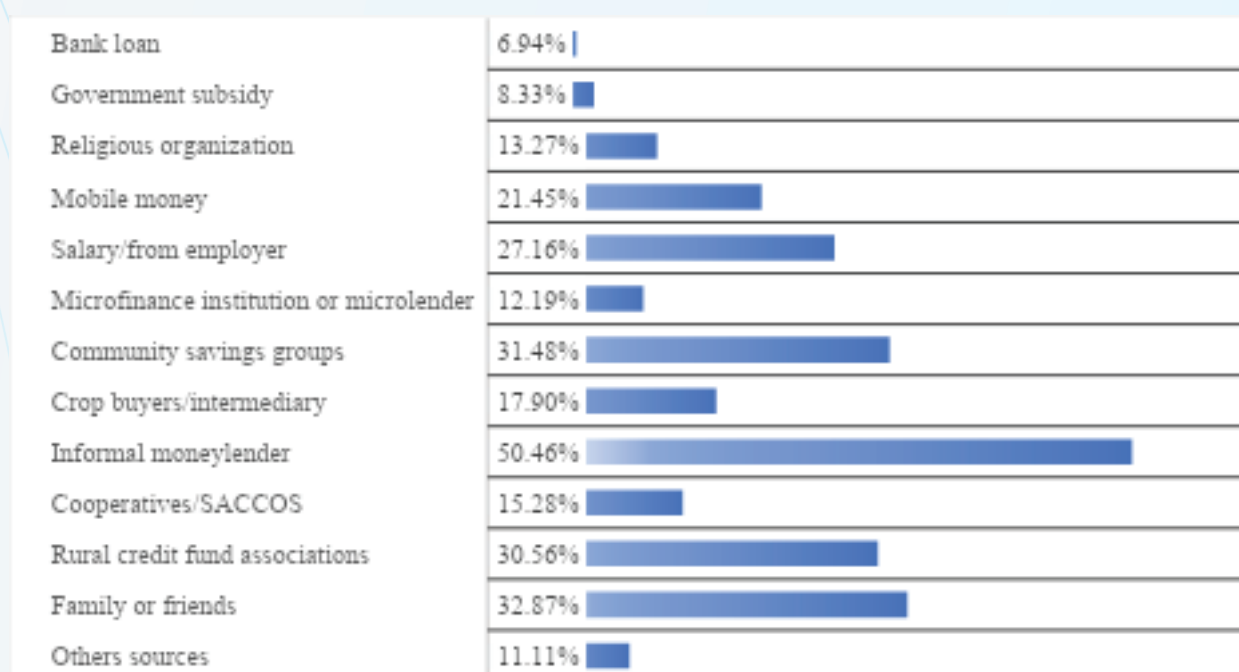


Figure 1. Sources of finance for rural youth entrepreneurs (n = 648).

Source(s): Figure by the author.

3.3 Awareness and Use of Financial Services among Rural youth Entrepreneurs

Among its key objectives, the study examines the awareness and use of financial services among rural youth entrepreneurs. Table 2 presents the results of a multiple-response survey conducted to assess this awareness and the usage of both formal and informal financial services. The findings reveal that 100% of the sampled rural youth entrepreneurs are aware of mobile money services and financial assistance from family or friends. However, despite this high level of awareness, only 87.50% of rural youth entrepreneurs effectively use mobile money services, and 59.72% receive financial assistance from family and friends. Furthermore, the results indicate that approximately 96.14% of rural youth entrepreneurs are aware of bank savings accounts, 90.43% are aware of insurance services, 96.91% know about commercial bank services, and 83.02% are aware of community saving groups. Yet, the actual usage of these services is low: only 8.64% use bank savings accounts, 9.41% utilize insurance services, 13.43% use commercial bank services, and 27.01% are members of community saving groups.

Moreover, the findings demonstrate substantial awareness of saving and cooperative societies (SACCOS) at 63.58%, with 36.57% actively using these service, and informal money lenders, where awareness stands at 74.38% and usage at 73.77%. Three financial services were reported both low awareness and low usage. These are capital markets (19.75% awareness and 1.08% usage), prepaid cards (58.02% awareness and 3.55% usage), and online banking services (42.90% awareness and 2.47% usage). Overall, the findings suggest that while the majority of rural youth entrepreneurs are aware of the availability of both formal and informal financial services in their area, a limited number effectively utilize these services. These findings are consistent with reports from Finscope (2023), which also noted the low usage of financial services among rural youth. This situation can be attributed to several factors, including high costs and fees associated with accessing financial services, low income among rural youth, financial illiteracy, cultural and social norms, and a lack of trust in financial institutions, which hinder both awareness and effective use of financial services (Seno and Manda, 2021; Nandi et al., 2022).

Table 2. Awareness and Use-Wise of Financial Services among Rural youth Entrepreneurs (N=648).

Types of financial product/services	Awareness		Use	
	Count	Percent (%)	Count	Percent (%)
Mobile money services	648	100.00	567	87.50
Bank savings account	623	96.14	56	8.64
Insurance services	586	90.43	61	9.41
Pension services	498	76.85	122	18.83
Credit card	387	59.72	52	8.02
Commercial bank services	628	96.91	87	13.43
Prepaid card	376	58.02	23	3.55

Microfinance/microlender services	268	41.36	98	15.12
Online banking service	278	42.90	16	2.47
Capital markets	128	19.75	7	1.08
Business loans	487	75.15	75	11.57
Vehicle/motorcycle loans	437	67.44	86	13.27
Saving and cooperative/SACCOS	412	63.58	237	36.57
Government subsidies	167	25.77	63	9.72
Education loans	366	56.48	103	15.90
Financial literacy/training	176	27.16	84	12.96
Member of community savings group	538	83.02	175	27.01
Rural credit fund associations	376	58.02	55	8.49
Financial assistance from family or friends	648	100.00	387	59.72
Informal moneylender	483	74.72	478	73.77
Others	134	20.68	75	11.57

Source(s): Table by the author

3.5 Barriers to Financial Inclusion among Rural youth Entrepreneurs

The study further examines the barriers to financial inclusion faced by rural youth entrepreneurs, identifying eight critical obstacles that impede their effective access to financial services (see Table 3). Among these, unreliable income and irregular cash flow were identified as the top barriers, accounting for 63.63% (n=411) of responses. This was followed by a lack of collateral (59.88%, n=388), ranked second, and lack of trust (58.02%, n=376), ranked third. These findings imply that irregular income streams and stringent collateral requirements pose significant challenges for rural youth entrepreneurs attempting to meet the financial institutions' requirements for loans. Studies by Forkuoh et al. (2015) and Senou and Manda (2021) support these findings, revealing that rural areas are often more susceptible to economic downturns and trust issues, making it riskier for financial institutions to offer services in these areas. In addition, most rural youth rely on unstable income sources, such as small-scale farming, informal trade, and casual labor, which provide minimal financial security (Ahmed et al., 2014; Solanki and Chhikara, 2024).

High costs and fees for securing and repaying loans were ranked fifth, cited by 55.40% (n=359) of the respondents, while documentation requirements ranked fourth, with 56.79% (n=368) of responses. Financial literacy was identified as a barrier by 48.77% (n=316), placing it sixth among critical barriers to financial inclusion. These findings suggest that limited financial knowledge, stringent documentation requirements, and high processing and repayment costs make it difficult for rural youth entrepreneurs to access financial services, especially due to high interest rates on loans. In support of these findings, studies by Lotto (2018) and Kandari et al. (2021) revealed that lacking proper identification documents and proof of address can prevent rural youth from opening bank accounts or accessing financial services. Moreover, high account maintenance fees, transaction charges, and loan interest rates discourage rural youth from utilizing formal financial services, especially when their resources are limited (Mohammed et al., 2020; Ndanshau and Njau, 2021).

Lastly, distance to financial services and religious reasons were identified by 45.99% (n=298) and 42.44% (n=275) of respondents, ranking seventh and eighth, respectively. These findings suggest that financial decision-making among rural youth entrepreneurs is influenced by religious beliefs and limited access to financial services infrastructure. Religious beliefs, in particular, can restrict the financial autonomy of youth entrepreneurs. On the other hand, the lack of physical banking infrastructure forces or otherwise limit rural youth to travel long distances to access financial services. Supporting these findings, Kuada (2021) and Guzman et al. (2020) argue that isolated rural communities often lack connectivity and access to services like mobile or internet banking, making it challenging to access and utilize digital financial tools.

Table 3. Barriers to Financial Inclusion among Rural youth Entrepreneur (N = 648)

Perceived barriers	Count	Percent (%)	Ranking
Distance	298	45.99	7
High costs and fee	359	55.40	5
Document requirement	368	56.79	4
Lack of trust	376	58.02	3
Religious reasons	275	42.44	8
Financial literacy	316	48.77	6
Unreliable income and irregular cash flow	411	63.43	1
Limited collateral	388	59.88	2

Source(s): Table by the author

4. Conclusion and Managerial Implications

This study provides valuable insights into the awareness of and barriers to financial inclusion among rural youth entrepreneurs, highlighting factors that hinder their access to both formal and informal financial services. The findings reveal a high level of awareness among rural youth of financial services such as mobile money, support from family or friends, community savings groups, commercial banking, savings and credit cooperative societies (SACCOs), microfinance services, informal money lenders, and insurance. Despite this awareness, however, actual usage remains low, particularly for formal financial products like bank savings accounts, insurance, and commercial banking services. Key obstacles include unreliable income, stringent collateral requirements, limited financial literacy, and high transaction costs, all of which contribute to the low financial inclusion rate among rural youth entrepreneurs. Additionally, cultural factors such as religious beliefs and the distance to financial institutions further restrict access to essential financial services. These findings underscore the need for tailored financial products and policies that address the unique economic and social conditions of rural youth entrepreneurs, promoting their financial empowerment and, ultimately, their socio-economic development.

In light of the study findings, this research offers actionable insights for financial institutions and policymakers on designing financial services that are more accessible and tailored to the

needs of rural youth entrepreneurs. Specifically, it recommends that financial institutions and policymakers design products with reduced documentation requirements, flexible collateral options, and low transaction costs to encourage greater youth engagement. Offering flexible repayment schedules, lower interest rates, and reduced fees could enhance accessibility and usage of financial services. Moreover, enforcing awareness campaigns focused on improving financial literacy would empower rural youth to make informed decisions about financial products, addressing barriers such as financial illiteracy, awareness gaps, and misconceptions about formal financial services. Furthermore, the government could support the establishment of community-based financial infrastructure or incentivize financial institutions to open branches in underserved regions and provide mobile banking solutions for rural communities. This could be complemented by partnerships with local organizations to build trust in formal financial institutions and align products with cultural norms, enhancing acceptance. Enforcing these insights allows financial institutions to unlock the potential of rural youth entrepreneurs, thereby fostering economic growth and contributing to a more inclusive financial ecosystem.

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Apprenticeship Programme on Information Technology Education in Tanzania Higher Education – Training the Trainers

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Executive Summary

Background: In Tanzanian higher education institutions (HEIs), trainers play a crucial role in delivering high-quality IT education, which is essential for producing competent graduates. As Information Technology (IT) is a driving force behind national economic development, it is vital to ensure that IT education meets the evolving needs of the modern industry. Effective training for IT educators is key to achieving this goal.

Objective: This study investigates the perspectives of IT education trainers on using apprenticeship programs to enhance their teaching competence within the context of Tanzanian HEIs. It aims to understand how such programs can improve trainers' skills and contribute to more effective IT education.

Methodology: The study employed quantitative research methods to gather comprehensive insights into the perceptions and attitudes of IT education trainers regarding apprenticeship programs in Tanzanian higher education institutions (HEIs). A survey was conducted. Participants in the study were IT education trainers from various Tanzanian HEIs, representing different academic ranks, including Assistant Lecturers, Lecturers, Senior Lecturers, and Professors.

Results: This study noted many IT trainers perceive the current integration of apprenticeship programs as insufficient. There is a notable variation in how well these programs are embedded in the institutions, with some trainers feeling that they are poorly integrated or not present at all. Trainers generally express enthusiasm for participating in apprenticeship programs. Key challenges identified include balancing program participation with existing responsibilities, ensuring program quality and credibility, and addressing financial concerns.

Implications of the study: The study emphasizes the importance of leveraging apprenticeship programs to build a skilled IT workforce, which is crucial for national economic development. The insights gained will help guide the development of more effective and impactful apprenticeship programs in Tanzanian HEIs, ultimately fostering a stronger IT education ecosystem and contributing to economic growth.

1.0 Background

The use of Information Technology (IT) is currently considered as one of the key factors in national economic development (Solomon & Klyton, 2020; Magomedov et al., 2020). Due to

the importance of education to economic growth, it is necessary to make sure that good IT education is provided to meet the needs of the modern industry (Donou-Adonsou, 2019). Based on the National Five-Year Development Plan 2021/22 – 2025/26 (FYDP), the training institutions needs to focus on providing better education so as to provide competent experts which can go along with the national motto; *“Realising Competitiveness and Industrialisation for Human Development”*.

Trainers are the main key on providing a better IT education in the Tanzanian higher education institutions (HEIs). Having well trained trainers is one of the factors to have competent graduates in any profession (Triplett et al., 2020; Hartanti, Yoto, & Nurhadi, 2022). It is therefore important to find out how the IT education trainers in Tanzanian HEIs can be made better on bridging the gap between teaching and practice in IT education so as to provide better experts to support the government in the industrial revolution process.

Different professions have been using the training of trainers’ programmes to have their trainers get better understanding of the real world based on their fields (Olayo et al., 2019). The same can be applied to the IT education in Tanzanian HEIs through the use of apprenticeship programmes. As trainers get equipped with the latest knowledge, skills, and pedagogical methods can more effectively impart quality education, ensuring that graduates are not only knowledgeable but also skilled and ready for the market demands of their chosen fields. The purpose of apprenticeship programmes is to produce practically oriented graduates that meet the job-related competencies required in the labour market, and therefore, the same can be applied to the IT education trainers to make them get updated to the needs of the labour market for better graduate production.

1.1 Statement of the Problem

IT is known to change within a very short time and therefore trainers may get obsolete within a very short time too. According to Suyitno et al. (2022), quality trainers are important for competent graduates and therefore having outdated IT education trainers may become a problem on the production of competent IT experts.

The use of apprenticeship programmes in creating competent trainers has been discussed by different literature (Suyitno et al., 2022), and hence, apprenticeship programmes may also be helpful in ensuring quality IT education trainers in Tanzanian HEIs. Apart from the noted literature on the use of apprenticeship programmes, limited studies exist that examine the use of apprenticeship programmes to improve the competence of IT education trainers in Tanzanian HEIs, and therefore, this study is found important to fill this gap.

This study aims on examining the IT education trainers’ perspectives on the use of apprenticeship programme on improving their competence for better IT teaching process in Tanzanian HEIs context. Specifically, the study aimed at fulfilling the following objectives:

1. To determine the perceptions of the IT education trainers on being trained through the apprenticeship programme for better IT teaching process in Tanzanian HEIs context.
2. To determine the attitude of the IT education trainers towards the training through the apprenticeship programme for better IT teaching process in Tanzanian HEIs context.

This study is found to be very important in finding out the IT education trainers' perceptions and attitudes on the use of apprenticeship programmes to improve their competence and also get their views on how better the programme can be implemented to benefit them. Understanding these can be helpful in creating a better way to provide the IT education trainers with up-to-date knowledge and skills necessary for the production of graduates who can meet the current labour market.

2.0 Literature Review

Waddell, Robinson & Wehbi (2018) proved that there is a need to focus on experimental learning techniques and skills so as to help students become better prepared to overcome the increasingly complex nature of community-based practice settings as they move from their studies to their workplace. But do the IT education trainers have enough skills to train their students to face the reality of the quickly changing complex working environment? According to Mavhunga and Merwe (2020), teachers also need to practice what they theoretically teach in the class so as to know how to better plan and teach their subjects so as to provide the students who will meet the industrial requirements. A study by Kinyaduka (2017) showed clearly that a gap between theory and practice is still a problem in Tanzania, which can be the same as IT education, and hence, a need for more research is required to ensure better production of IT experts.

The use of apprenticeship programmes to bridge the gap between theory and practice through training the trainers is discussed in the literature (Alias, Sofyan, & Triyono, 2020). It is also shown that practice makes perfect (Brady et al., 2018; Mohseni, 2019; Mislan, Wright & Shrewsbury, 2021), which is very important to both IT graduates and IT trainers. The use of an apprenticeship programme to improve IT trainer's competence is important to improve the production of competent IT graduates, as practice makes perfect. Based on the noted importance of the apprenticeship programme in improving IT trainer's competence, this study is important as studies on the use of apprenticeship on Tanzanian HEIs IT trainers are scarce.

3.0 Methodology

3.1 General Research Strategy

The study employed quantitative research methods to gather comprehensive insights into the perceptions and attitudes of IT education trainers regarding apprenticeship programs in Tanzanian Higher Education Institutions (HEIs). A structured survey was used as the primary data collection tool, allowing for the systematic quantification of participants' responses. A sample of 62 Tanzanian IT education trainers was reached. The selection of the participants based on their willingness and ability to participate on the study (Cresswell, 2014; Denscombe, 2010).

3.2 Data Collection

A well structured questionnaire was used. The survey included a range of closed-ended questions designed to assess various aspects of the trainers' perceptions on the apprenticeship

programs, including their perceived value, impact on professional development, and attitudes toward participation. Participants in the study were IT education trainers from various Tanzanian HEIs, representing different academic ranks, including Assistant Lecturers (28), Lecturers (16), Senior Lecturers (15), and Professors (3). The selection of participants aimed to capture a diverse cross-section of educators at different stages of their careers, providing a broad perspective on how apprenticeship programs are perceived across different levels of experience and expertise.

A face to face administration of the questionnaires was done for some respondents while at some point an online questionnaire was used for the distant respondents. A snow ball technique was used to find the relevant respondents.

3.3 Data Analysis

The quantitative data was analysed using SPSS statistical software. Data analysis involved the use of statistical methods to identify trends, compare responses across different academic ranks, and draw conclusions about the overall perceptions on the apprenticeship programs. This approach enabled the study to provide a quantitative assessment of the extent to which these programs are valued by IT educators and their potential impact on teaching effectiveness and professional development.

4.0 Results and Discussion

The study explored the role of apprenticeship programs in IT education within Tanzanian higher education institutions (HEIs), focusing on the perceptions and attitudes of the IT education trainers. The findings provide insights into how different academic positions and career stages influence views on apprenticeship programs.

The results obtained are from the responses collected from a sample of 62 ICT trainers from different Tanzanian HEIs. Table 1 presents the demographic data for the respondents.

Table 1. Demographic data based on Age and Current Position

	Under 30	31-40	41-50	Above 50
Assistant Lecturer	6	13	9	0
Lecturer	0	3	10	3
Senior Lecturer	0	2	8	5
Professor	0	0	0	3

The data reflects a typical academic career progression with younger individuals in junior roles and older individuals in more senior positions.

Assistant lecturers: Mostly in their 30s, with a few in their 40s, indicating they are in the early to mid-career stages. The Assistant Lecturer role includes younger individuals, predominantly

in their 30s, which aligns with the expectation that this role is often filled by those in the early to mid-career stage.

Lecturers: Predominantly in their 40s, with some above 50, reflecting mid- to late-career stages.

Senior lecturers: Most are in their 40s, with a notable number above 50, which may represent more experienced professionals. Lecturers and Senior Lecturers are primarily in their 40s, with some in their 50s, indicating that these roles are held by individuals who have accumulated significant experience.

Professors: All are above 50, which can be considered consistent with the high level of experience required for this role.

In answering the first question on the perceptions of the IT education trainers on being trained through the apprenticeship programme for better IT teaching process in Tanzanian HEIs context, the researchers looked at:

- i. Respondents' perception on the current integration of apprenticeship programs in IT education at respective HEI
- ii. Respondents' perception on the benefits of apprenticeship program for enhancing the IT teaching process
- iii. Respondents' belief on improving their teaching effectiveness in IT through participating in an apprenticeship program.

4.1 Respondents' Perception on the Current Integration of Apprenticeship Programs in IT Education at Respective HEI

The findings reveal a spectrum of views among trainers, reflecting varying degrees of satisfaction and concern about the integration and effectiveness of apprenticeship programs in enhancing IT education. The data indicates a generally negative perception of the current integration of apprenticeship programs into IT education. A significant majority of trainers, across all academic ranks, perceive the programs as either poorly integrated or not integrated at all. For instance, 23 out of 28 Assistant Lecturers and 8 out of 16 Lecturers feel that the integration is poor, while some trainers, particularly Lecturers and Senior Lecturers, believe that these programs are entirely absent from the curriculum. This widespread dissatisfaction suggests that trainers see a disconnect between the potential benefits of apprenticeship programs and their actual implementation within the HEIs. Table 2 represent the obtained results.

Table 2. Perception on the Current Integration of Apprenticeship Programs in IT Education

	Well-integrated	Moderately integrated	Poorly integrated	Not integrated
Assistant Lecturer	0	2	23	3

Lecturer	0	1	8	7
Senior Lecturer	0	1	8	6
Professor	0	0	2	1

The perceived lack of integration of apprenticeship programs has important implications for the IT teaching process in Tanzanian HEIs. Apprenticeship programs are designed to bridge the gap between theoretical knowledge and practical skills, providing trainers with hands-on experience that can be passed on to students. However, the perception that these programs are not well-integrated suggests that trainers may not be fully equipped to deliver practical, industry-relevant IT education. This could hinder the development of a skilled IT workforce in Tanzania, as students may graduate without the necessary practical competencies.

4.2 Respondents' Perception of the Benefits of Apprenticeship Program for Enhancing the IT Teaching Process

The study's findings on the perceptions of IT education trainers regarding the benefits of apprenticeship programs for enhancing the IT teaching process in Tanzanian HEIs reveal varied opinions across different academic ranks. While the overall view is generally positive, the perceived value of these programs appears to diminish with increasing academic rank, suggesting differing needs and expectations among educators at various stages of their careers. Table 3 represent the obtained results.

Table 3 Perception on the Benefits of Apprenticeship Program for Enhancing the IT Teaching Process

	Very beneficial	Beneficial	Slightly beneficial	Not beneficial
Assistant Lecturer	17	10	1	0
Lecturer	8	6	2	0
Senior Lecturer	5	5	5	0
Professor	0	0	2	1

The findings show that, the Assistant Lecturers, who are typically at the early stages of their academic careers, overwhelmingly view apprenticeship programs as highly beneficial. With 17 out of 28 Assistant Lecturers rating these programs as “very beneficial” and another 10 considering them “beneficial,” there is a clear consensus that apprenticeship programs play a crucial role in their professional development. These educators likely value the hands-on experience and practical skills that apprenticeship programs offer, which are essential for building their teaching capabilities and bridging the gap between academic knowledge and industry practice.

Furthermore, while Lecturers and Senior Lecturers still recognize the value of apprenticeship programs, their responses suggest that the basic training offered by these programs may no longer fully meet their professional development needs. Lecturers and Senior Lecturers display more varied perceptions of the benefits of apprenticeship programs. Among Lecturers, 8 out of 16 view the programs as “very beneficial,” and 6 consider them “beneficial”, while a small number (2) see them as only “slightly beneficial”. Senior Lecturers, on the other hand, are evenly split, with 5 finding the programs “very beneficial”, 5 considering them “beneficial”, and another 5 perceiving them as “slightly beneficial”. These mixed perceptions may reflect the evolving needs of educators as they gain more experience and move up the academic ladder. This may imply that, this group might benefit more from advanced or specialized training opportunities that build on the foundational skills gained through apprenticeships.

Moreover, looking on the Professors which is the most senior group of educators, express the least enthusiasm for apprenticeship programs. None of the Professors consider these programs “very beneficial”, and only 2 out of 3 see them as “slightly beneficial”, with 1 viewing them as “not beneficial”. This finding may imply that, the fact that Professors, who are often at the peak of their academic careers, have already accumulated significant practical experience and may feel that apprenticeship programs offer little additional value.

The findings suggest that while apprenticeship programs are generally well-regarded, especially by less experienced educators, there is a need for a more differentiated approach to professional development in Tanzanian HEIs. Institutions should consider tailoring professional development opportunities to the specific needs of educators at different career stages.

4.4 Respondents’ Belief in Improving their Teaching Effectiveness in IT through Participating in an Apprenticeship Program

The data reveals that IT educators in Tanzanian HEIs generally believe that participating in apprenticeship programs would improve their teaching effectiveness. However, the strength of this belief varies across different academic ranks, reflecting the diverse needs and expectations at different career stages. Table 4 represent the obtained results.

Table 4 Belief on improving their teaching effectiveness in IT through participating in an apprenticeship program

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Assistant Lecturer	12	15	1	0	0
Lecturer	6	10	0	0	0
Senior Lecturer	6	5	4	0	0

Professor	0	3	0	0	0
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Assistant Lecturers and Lecturers demonstrate strong support for the idea that apprenticeship programs could enhance their teaching effectiveness. Specifically, 12 out of 28 Assistant Lecturers “strongly agree”, and 15 “agree” with the statement. Similarly, 6 out of 16 Lecturers “strongly agree”, while 10 “agree”.

While Lecturers acknowledge the potential benefits of apprenticeship programs, it may be considered that their more extensive experience in teaching may lead them to consider additional factors, such as the relevance and applicability of these programs to their advanced level of expertise. Among them, 6 “strongly agree”, 5 “agree”, and 4 remain ‘neutral’. The neutrality among some Senior Lecturers may indicate that while they see some value in apprenticeship programs, they might also believe that these programs need to be more tailored to the specific challenges and complexities they face in their teaching roles.

Despite the extensive experience of the Professors, they still recognize the potential benefits of apprenticeship programs, with 3 out of 3 agreeing that such programs could enhance teaching effectiveness. However, none “strongly agree,” which suggests that while they see the value, they do not view these programs as essential to their professional growth.

Generally, the findings reveal that IT education trainers in Tanzanian HEIs generally perceive apprenticeship programs positively, particularly in terms of improving teaching effectiveness. However, their perceptions vary significantly based on their academic rank which indicate that while apprenticeship programs are valued, their impact varies depending on the career stage of the educators.

To answer the second question on the attitude of the IT education trainers towards the training through the apprenticeship programme for better IT teaching process in Tanzanian HEIs context, the researchers looked on:

- i. Respondents’ feelings about participating in an apprenticeship program to enhance their IT teaching skills
 - ii. The extent to which the respondents think an apprenticeship program can contribute to their professional development as IT educators
- I. Respondents’ feelings about participating in an apprenticeship program to enhance their IT teaching skills

The findings of this study reveal varying attitudes among IT educators in Tanzanian HEIs towards participating in apprenticeship programs aimed at enhancing their teaching skills. These attitudes are largely influenced by the educators' academic ranks and levels of experience, highlighting the need for differentiated approaches to

professional development within higher education institutions. Table 5 shows the results.

Table 5 Feelings about Participating in an Apprenticeship Program to Enhance their IT Teaching Skills

	Very enthusiastic	Enthusiastic	Neutral	Unenthusiastic	Strongly opposed
Assistant Lecturer	5	15	5	3	0
Lecturer	0	3	3	7	3
Senior Lecturer	0	1	6	4	4
Professor	0	0	0	0	3

The findings noted that Assistant Lecturers show the highest level of enthusiasm for participating in apprenticeship programs. Out of 28 Assistant Lecturers, 5 are “very enthusiastic,” 15 are “enthusiastic,” and only 3 are “unenthusiastic.” None of the Assistant Lecturers strongly oppose participation.

This strong positive response indicates that Assistant Lecturers view apprenticeship programs as valuable opportunities to develop the practical teaching skills they need to be effective educators. Given their relatively limited experience, they are likely seeking structured support to bridge the gap between theoretical knowledge and practical application in the classroom. The high level of enthusiasm suggests that apprenticeship programs should be prioritized for this group, as they are eager to engage in professional development activities that can significantly impact their teaching effectiveness.

However, Lecturers who are generally more experienced than Assistant Lecturers, present a more varied set of attitudes towards apprenticeship programs. Among the 16 Lecturers surveyed, none are “very enthusiastic”, only 3 are “enthusiastic”, while 3 are “neutral”, 7 are “unenthusiastic”, and 3 are “strongly opposed”. The lack of enthusiasm might indicate that while they recognize the value of professional development, they feel that apprenticeship programs do not adequately address the specific challenges they face at this stage of their careers.

Moreover, Senior Lecturers show even less enthusiasm for participating in apprenticeship programs. Of the 15 Senior Lecturers surveyed, only 1 is “enthusiastic”, while the majority are either “neutral” (6), “unenthusiastic” (4), or “strongly opposed” (4). This trend of growing disinterest with increasing academic rank suggests that as educators gain more experience, they perceive less value in participating in apprenticeship programs designed for general skill enhancement as also noted on the first question on their perception.

As for the Professors, all 3 of them “strongly opposed” to participating, indicating a complete disengagement from these programs.

The findings reveal that while there is general recognition of the potential value of apprenticeship programs, the enthusiasm for participating in such programs decreases with increasing academic rank and experience.

II. The extent to which the respondents think an apprenticeship program can contribute to their professional development as an IT educators

The findings from this study highlight diverse perceptions among IT educators in Tanzanian HEIs regarding the extent to which apprenticeship programs can contribute to their professional development. The variation in responses is largely influenced by the academic rank and experience level of the respondents, revealing how these programs are valued across different stages of an academic career. Table 6 shows the results.

Table 6 The Extent to which the Respondents Think an Apprenticeship Program Can Contribute to their Professional Development

	To a great extent	To some extent	To a limited extent	Not at all
Assistant Lecturer	18	10	0	0
Lecturer	4	7	5	0
Senior Lecturer	4	7	4	0
Professor	0	3	0	0

Assistant Lecturers exhibit the most confidence in the value of apprenticeship programs, with 18 out of 28 respondents indicating that these programs can contribute “to a great extent” to their professional development. The remaining 10 Assistant Lecturers believe the programs can contribute “to some extent”, with none perceiving them as having only limited or no value. This strong positive perception underscores the crucial role apprenticeship programs play for early-career educators. Assistant Lecturers, being relatively new to the teaching profession, are likely seeking opportunities to develop foundational teaching skills, gain practical experience, and apply theoretical knowledge in real-world settings. For them, apprenticeship programs represent a structured pathway to acquire the competencies necessary to excel in their roles.

Lecturers, who are typically more experienced than Assistant Lecturers, show a more varied response. Among the 16 Lecturers surveyed, 4 believe the programs contribute “to a great extent”, 7 believe they contribute “to some extent”, and 5 believe they contribute “to a limited extent”. The mixed perceptions among Lecturers may reflect a

transitional stage in their careers where the relevance of general apprenticeship programs may be diminishing.

Senior Lecturers demonstrate a balanced yet cautious optimism towards the contribution of apprenticeship programs. Of the 15 Senior Lecturers surveyed, 4 believe the programs contribute “to a great extent”, 7 believe they contribute “to some extent”, and 4 believe they contribute “to a limited extent”. Senior Lecturers, who are often well-established in their academic careers, may perceive the benefits of apprenticeship programs as less significant compared to earlier stages in their careers. While some still find value in these opportunities, others may see them as less critical to their ongoing development.

Professors, who represent the most senior group of educators, exhibit the least enthusiasm for apprenticeship programs. Among the 3 Professors surveyed, none believe the programs contribute “to a great extent”, though 3 believe they contribute “to some extent”. The limited perceived value of apprenticeship programs among Professors suggests that these educators, who have already achieved a high level of expertise and professional accomplishment, may not see apprenticeship programs as significantly contributing to their further development.

5.0 Conclusion and Future Work

The design and implementation of an apprenticeship program for IT trainers in Tanzanian higher education institutions (HEIs) offer significant potential for enhancing the quality of IT education.

The varying perceptions across different academic ranks highlight the need for a differentiated approach to apprenticeship programs within Tanzanian HEIs.

For Early-Career Educators: The strong belief in the value of apprenticeship programs among Assistant Lecturers suggests that these programs are vital for helping early-career educators to build a solid foundation in teaching. HEIs should continue to invest in and expand these programs to support the professional development of Assistant Lecturers, ensuring that they receive the practical training necessary to become effective educators.

For Mid-Career educators: The mixed responses from Lecturers and Senior Lecturers indicate a need for more advanced and specialized apprenticeship programs. HEIs should consider developing programs that cater to the specific needs of mid-career educators, focusing on areas such as curriculum innovation, advanced pedagogical techniques, and leadership development.

For Senior educators: The limited enthusiasm among Professors suggests that apprenticeship programs, in their current form, may not meet the needs of the most experienced educators. HEIs should explore alternative professional development opportunities for Professors, focusing on roles that leverage their expertise, such as research leadership, mentoring, and strategic contributions to the institution.

More studies are invited to improve the findings. For future work, it is essential to conduct longitudinal studies to assess the long-term impact of apprenticeship programs on teaching effectiveness and career progression of IT trainers. Pilot programs should be implemented to test and refine the apprenticeship model, and ongoing partnerships with industry stakeholders should be established to keep the programs aligned with current technological and workplace trends. Additionally, exploring advanced technologies and integrating career development support will further enhance the effectiveness and sustainability of these programs. Furthermore, a study would use a mixed-methods, longitudinal design with stratified sampling and triangulation is important. The addition of qualitative data, contextual analysis, and a clarified sampling strategy will address the current study's limitations, providing a deeper, more representative understanding of the research topic. This approach will not only enhance the richness of the data but also strengthens the validity and applicability of the findings.

The study emphasizes the importance of leveraging apprenticeship programs to build a skilled IT workforce, which is crucial for national economic development. The insights gained will help guide the development of more effective and impactful apprenticeship programs in Tanzanian HEIs, ultimately fostering a stronger IT education ecosystem and contributing to economic growth.

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Breaking the Ceiling: Gender Diversity in Top Level Management and Corporate Performance. Evidence from Listed Financial Firms in Kenya.

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Abstract

The study aims to analyze the influence of gender diversity in top-level management (including women directors, women in audit committees, and women in executive management) on the financial performance, measured by Return on Assets (ROA), of 17 financial firms listed on the Nairobi Securities Exchange (NSE) in Nairobi, Kenya. The secondary data, sourced from annual reports and audited financial statements covering seven years (2016-2022), resulted in a balanced panel dataset of 119 firm-year observations. The research utilized fixed effect panel regression to test hypotheses and employed the Two-stage Least Squares method for robust testing. The results reveal that both women in audit committees and in executive management had a significant negative impact on ROA. These results indicate that higher representation of women in audit committees and executive management positions decreased the financial performance of listed financial firms in Kenya.

Keywords: *Gender diversity, financial performance, agency theory, upper echelons theory*

1.0 Introduction

Gender diversity within a firm's leadership and governance structures has gained significant attention due to its impact on key performance metrics such as Return on Equity (ROE) and Return on Assets (ROA). The effect of board diversity on organizational performance has continued to be scrutinized by policymakers, non-governmental agencies, and academic communities (Singh et al., 2023; Wang, 2020)

Globally, the relationship between gender diversity and firm performance has produced mixed results, reflecting the complexities of this issue across various contexts. Studies suggest that having women on corporate boards can lead to improved financial outcomes. For example, Alvarado et al. (2017) found that gender-diverse boards positively affect ROE and ROA through enhanced risk management and governance practices in Spain. McGuinness et al. (2017) reported that board gender diversity in China improves Corporate Social Responsibility

(CSR), which in turn positively influences financial performance. Similarly, Mvita and Du Toit (2024) in South Africa and Owen and Judit (2018) in Europe found positive correlations between board diversity and financial performance metrics such as ROE and ROA. However, a systematic review by Herrera-cano et al. (2019) across 28 countries found no significant correlation between board gender diversity and financial performance, indicating that the impact of female directors may be influenced by additional factors such as firm size and industry type.

The influence of women in audit committees also shows notable positive effects on financial performance. Ahmed et al. (2024) in Egypt demonstrated that gender diversity within audit committees positively impacts ROA and ROE, and Al Lawati et al. (2021) found that women in audit committees enhance the quality of financial disclosure. Research by Ibrahim et al. (2019) in Kenya and Wang (2020) in Taiwan supports these findings, showing that female audit committee members contribute to better corporate governance and financial performance through increased transparency and accountability. In terms of executive management, Flabbi et al. (2019) found that female executives in European banks foster inclusivity and collaboration, leading to improved ROE and ROA. Leyva-townsend et al. (2021) observed that women in executive roles in Latin America implement sustainability and CSR strategies that enhance ROE and ROA. However, studies such as Hamdani et al. (2022) and Buchdadi et al. (2023) found no significant or even negative effects of female executives on bank performance, suggesting that outcomes can vary significantly across different contexts.

In the African context, the impact of gender diversity on bank performance shows a blend of positive and inconclusive results. Research in Nigeria by Onyekwere et al. (2019) found that women in executive roles positively impact ROE and ROA through improved risk management and strategic initiatives. Similarly, Assenga et al. (2018) reported that gender diversity positively influences financial performance in Tanzanian firms. However, Magoma and Ernest (2023) observed that while women directors had a positive effect on financial performance, this impact was statistically insignificant for ROE and ROA, highlighting the complexity of these relationships in the banking sector.

The role of women in audit committees in Africa mirrors the positive impacts seen globally. Ibrahim et al. (2019) found that female audit committee members in Kenya strengthen internal controls and reduce financial misstatements, thereby improving ROE and ROA. These findings align with those from other regions, suggesting that gender diversity in audit committees could also be beneficial for African banks. In executive management, the positive effects of gender diversity are evident. Delgado-márquez and Castro (2017) in Colombia and Moreno-g et al. (2018) in Brazil found that women in executive management roles positively impact firms' performance. This aligns with findings from other regions, indicating that female executives can contribute positively to firm performance.

Despite extensive research on the importance of gender diversity in corporate leadership, the impact of such diversity on financial performance remains inconclusive and varies across different countries. While some studies have reported positive correlations between gender

diversity and financial metrics like Return on Equity (ROE) and Return on Assets (ROA) (Alvarado et al., 2017; McGuinness et al., 2017), others have observed negligible or even negative effects (Buchdadi et al., 2023; Hamdani et al., 2022). In the African financial sector, this evidence is equally mixed. (Assenga et al., 2018; Ibrahim et al., 2019; Magoma and Ernest, 2023; Onyekwere et al., 2019). This variability highlights the complexity of the relationship between gender diversity and financial performance and suggests that regional, cultural, and organizational factors may significantly influence these outcomes.

Given the importance of gender diversity initiatives and their potential impact on financial performance, there is a critical need for a thorough examination of these dynamics within the African context. The existing literature lacks comprehensive studies specifically addressing the impact of gender diversity on the financial performance of listed financial firms in Kenya. In an emerging economy like Kenya where socio-economic and cultural factors may shape the opportunities available to women and the dynamics within corporate leadership, understanding how gender diversity influences firm performance is essential. The absence of targeted research hinders policymakers and financial institutions from making informed decisions that could enhance both inclusivity and profitability in the sector. This paper aims to address this gap by analyzing the effect of gender diversity at the top management level (board of directors, audit committee, and senior management team) on the financial performance of 17 listed financial firms at the Nairobi Securities Exchange from 2016 to 2022. This study will provide a comprehensive assessment of how the presence of women in these key leadership roles impacts the ROA of listed financial firms in Kenya.

This paper contributes to advancing knowledge on the relationship between gender diversity and financial performance, particularly in under-researched contexts in the wider geographical scope of Kenyan-listed financial firms over seven years (2016-2022). This paper fills a critical gap in the existing literature by focusing on the impact of gender diversity in key leadership roles on the financial performance of listed financial firms in Kenya. While global research has extensively documented the positive effects of gender diversity on corporate performance, there is a scarcity of studies that examine these dynamics within the specific socio-economic and cultural contexts of African countries such as Kenya. By providing empirical evidence from seven years (2016-2022), this research will offer new insights into how gender diversity influences Return on Assets (ROA) in Kenya. These insights will enrich the global discourse on gender diversity in corporate governance by introducing an African perspective, which is often underrepresented in existing studies. Furthermore, the paper used a multi-theoretical approach by utilizing two theories namely the Agency Theory (AT) and the Upper Echelons Theory (UET). Finally, a robust test was done by using a Two-stage least square (2SLS) method. The latter method was used to address the issue of endogeneity present in the panel dataset.

1.2 Agency and upper-Echelon Theories

Agency theory (AT) explores the relationship between principals (e.g., shareholders) and agents (e.g., firm executives) and emphasizes the need for effective oversight to ensure that

agents act in the best interests of the principals. (Jensen and Meckling, 1976). In the context of financial firms, where governance challenges may be more pronounced due to various socio-economic factors, the introduction of gender diversity in leadership can play a crucial role in mitigating agency problems (Adams and Ferreira, 2009). Women directors and executives are often seen as bringing fresh perspectives and a heightened sense of responsibility, which can lead to more rigorous monitoring of management and better alignment of the firm's actions with shareholder interests. This enhanced governance can result in improved financial performance, as evidenced by higher ROE and ROA (Adams and Ferreira, 2009).

Upper echelons theory (UET) posits that the characteristics of top-level executives—such as their cognitive abilities, values, and experiences—significantly influence strategic decisions and organizational outcomes. (Hambrick and Mason, 1984). In the financial sector, where markets are often characterized by volatility and rapid change, the presence of women in leadership roles can add valuable diversity of thought and approach. This diversity can lead to more innovative strategies, better risk management, and a deeper understanding of customer needs, all of which are crucial for maintaining and improving financial performance (Post and Byron, 2015). The unique challenges faced by financial firms, including regulatory environments, market dynamics, and cultural factors, make the inclusion of diverse perspectives particularly beneficial. The diverse executive teams can develop more effective strategies to navigate these challenges, ultimately contributing to better organizational performance.

1.3 Women in Executive Management and Firm Performance

According to a study conducted in India by Gupta and Mahakud (2020) there are relatively few women in top positions, which might be attributed to the perception that women are inadequate for managing complex institutions like financial firms. However, the study by Moreno-g, et al. (2018) found that gender diversity in top management teams positively impacts the business performance of Colombian public companies, particularly when measured using ROA. Similarly, previous research conducted in Colombia by Delgado-márquez and Castro (2017) and in Brazil by (Moreno-g et al. (2018) indicated that women in executive management roles positively influence firms' performance. Other studies revealed a positive relationship between women in executive management and firm performance (Cambrea et al., 2018; Flabbi et al., 2019; Leyva-townsend et al., 2021). On the contrary, a study conducted in Indonesia revealed that women in executive positions exerted a negative and significant influence on ROA (Hamdani et al., 2022). According to Magoma and Ernest (2023), they found that women in executive positions in Tanzania exhibited a negative and statistically significant impact on ROA and ROE as financial performance metrics.

H1: Women in executive management negatively influence the firm's performance

1.4 Women in Audit Committees and Firm Performance

It has been established that an audit committee plays a crucial role in safeguarding shareholders' wealth and protecting the rights of other stakeholders. The study by Ahmed et al. (2024) in Egypt revealed that gender diversity within audit committees has a significant positive impact on financial performance metrics such as Return on Assets (ROA) and Return on Equity (ROE). Additionally, the study found that when gender diversity is used as a moderating variable, it generally enhances the positive relationship between audit committee characteristics and financial performance. Similarly, Al Lawati et al. (2021) found that the presence of women in audit committees improves the quality of financial disclosure. The findings of Ashari and Krismiaji (2020), also indicated a positive relationship between female directors on audit committees and firm performance, highlighting the influence of gender diversity on organizational success.

Additionally, other empirical studies support the notion, that women on the audit committee play a pivotal role in enhancing firm performance (Ashari and Krismiaji, 2020; Elbahar et al., 2021). A study conducted in Kenya demonstrated that the inclusion of women in audit committees strengthens internal controls and reduces financial misstatements, thereby improving both ROE and ROA (Ibrahim et al., 2019). Similarly, another study observed that women in the audit committees enhance corporate governance and financial performance leading to improved ROE and ROA through increased transparency and accountability. (Wang, 2020). Empirical studies have revealed that gender diversity within oversight committees like the audit committee can provide a broader perspective, improve the quality of supervision, and positively influence the corporate decision-making process (Aldamen et al., 2018; Mustapha et al., 2020)

H2: Women in the audit committee negatively influence the firm's performance

1.5 Women Directors and Firm Performance

Studies consistently demonstrate that the presence of women on corporate boards is linked to improved financial outcomes. Diverse boardrooms are better equipped to develop comprehensive corporate strategies, effectively implement governance practices, and manage a variety of risks that companies may face (Song et al., 2020). For instance, a study conducted in Colombia involving 45 companies listed on the Colombia Stock Exchange utilized panel data regressions to reveal that the participation and presence of at least one woman on the board of directors positively influence the financial performance of listed companies, as measured by Return on Equity (ROE) (Leyva-townsend et al., 2021).

Similarly, other empirical studies have shown that board gender diversity significantly and positively impacts firm performance. (Brahma et al., 2020; Kabara et al., 2022; Yilmaz et al., 2021). Another study argued that gender-diverse boards positively affect ROE and ROA through improved risk management and ethical considerations (Alvarado et al., 2017). Furthermore, other empirical studies conducted in China and Australia revealed that the presence of women in the boardroom is positively linked to corporate social responsibility (CSR), and CSR is positively linked to firm performance as measured by ROE (Galbreath,

2018; McGuinness et al., 2017). The latter studies suggest an indirect effect of the presence of women directors on board and firm performance.

In contrast, a study conducted in Tanzania revealed that the presence of women directors had a positive influence on firm performance, the effect was statistically insignificant as measured by ROA and ROE. (Magoma and Ernest, 2023). The relationship between board gender diversity and firm performance is complex and influenced by both internal and external factors. A systematic review and meta-analysis conducted across 28 different countries found no significant correlation between the number of women in the boardroom and firm performance. (Herrera-cano et al., 2019). Other empirical studies showed women directors on board did not impact the firm performance (Alshirah et al., 2022; Singh et al., 2023)

H3: Women directors positively influence the firm's performance

2. Methods

2.1 Data and Sample

The research is based on quantitative methodology mainly focusing on archival research and the technique of documental analysis similar to a previous study conducted by (Ribeiro et al., 2024). The study targets listed financial firms at the NSE as the study population. NSE was purposively selected as it is the largest stock market in East Africa and ranked 8th in Africa with a market capitalization of \$9.57 billion as of December 2023 (Olujinmi, 2023). The study period spans from 2016 until 2022 (7 years period). The study period was ideal since it was in 2015 that the Sustainable Development Goals (SDGs) were agreed upon amongst the world leaders in the quest to create a better, fairer world by 2030 (Magoma et al., 2024). This study focuses on SDG goal 5 (gender equality) by analyzing the impact of women in executive management, women directors, and women in audit committees on financial performance as measured by the ROA of 17 listed financial firms at NSE. Table 1 shows the sample selection.

Table 1: Sample of Listed financial firms

Description	Number of Listed Firms
Total number of Firms listed on the NSE	67
Non-financial sector	(43)
Incomplete annual reports	(7)
Final Sample	17
Period (2016-2022)	7 years
Firm-year observations	119

2.2 Data Source

Secondary data were obtained from annual reports and audited financial statements from listed financial firm's official websites.

2.3 Variable measurement and operationalization

Table 2: Variable summary and measurement

Variables	Acronym	Variable type	Measurement	Previous studies	Source
Corporate performance	ROA	Response (RV)	Net Income/ Total Assets	(Benaguid et al., 2023; Nuber and Velte, 2021; Roziq and Ilma Ahmad, 2024)	Financial statements
Women in Executive management	WEM	Explanatory (EV)	The proportion of women in the executive management	(Flabbi et al., 2019; Magoma and Ernest, 2023)	Annual reports
Women in the audit committee	WAC	Explanatory (EV)	The proportion of women in the audit committee	(Bravo and Reguera-Alvarado, 2019; Magoma et al., 2024; Wang and Sun, 2022)	Annual reports
Women Directors	WD	Explanatory (EV)	The proportion of women on the board		Annual reports
Board Size	Bsize	Control (BCV)	Number of Directors on board	(Benaguid et al., 2023; Nuber and Velte, 2021; Quoc Trung, 2022)	Annual reports
Board meeting	BM	Control (BCV)	Number of board meetings conducted in a year	(Bawuah, 2024; Roziq and Ilma Ahmad, 2024)	Annual reports
Firm size	Fsize	Control (FCV)	The natural logarithm of a	(Magoma et al., 2024;	Financial statements

			listed financial firm's total assets	Magoma et al., 2022)	
Capital adequacy	CA	Control (FCV)	Total Equity divided by Total Assets	(Magoma et al., 2022; Magoma et al., 2022; Quoc Trung, 2021)	Financial statements
Leverage	LEV	Control (FCV)	Total Liabilities divided by Total assets	(Benaguid et al., 2023; Magoma et al., 2022; Quoc Trung, 2021)	Financial statements
Audit committee size	ACS	Control (BCV)	Number of audit committee members in the audit committee	(Aldamen et al., 2018; Ashari and Krismiaji, 2020; Elbahar et al., 2021; Mustapha et al., 2020)	Annual reports
Audit committee meetings	ACM	Control (BCV)	The frequency of AC meetings held in one year	(Aldamen et al., 2018; Ashari and Krismiaji, 2020; Elbahar et al., 2021; Mustapha et al., 2020)	Annual reports
Inflation, consumer prices (Annual %)	INFL	Control (ICV)	Indicates gradual increase in prices of goods and services	(Magoma et al., 2022; Quoc Trung, 2021)	World Bank Development indicators
GDP growth (Annual %)	GDP	Control (ICV)	Indicates growth rate of annual gross domestic product	(Magoma et al., 2022; Quoc Trung, 2021)	World Bank Development indicators

Source: Author's elaboration from empirical literature

2.4 Specification of the Regression Model

This study adopted a balanced panel data regression model. The panel data technique involves selecting a suitable estimation method between fixed effect and random effects; thus, the study used the Hausman test to choose between the fixed and random effect models. A correlation matrix was used to test the existence of multicollinearity between variables.

The panel regression model is seen below;

$$CP_{it} = \beta_0 + \beta_1 EV_{it} + \beta_2 FCV_{it} + \beta_3 BCV_{it} + \beta_4 ICV_{it} + \varepsilon_{it} \dots \dots \dots \text{Eqn 1}$$

Whereby the study has one response variable (RV)

- CP_{it} represents corporate performance as measured at a t time (ROA)

The explanatory variables (EVs) are women in executive positions, women in the audit committee, and women directors measured at a t time

Finally, the control variables (CVs) are classified into three categories;

- Board control variables (BCVs) represented by the board size, board meetings, audit committee size, and audit committee meetings measured at a t time.
- Firm control variables (FCVs) represented by capital adequacy, leverage, and firm size measured at a t time.
- Industry control variables (ICVs) represented by inflation rate and GDP measured at a t time.

β_0 = constant term

ε_{it} = Error term

3. Results

3.1 Descriptive Statistics and Multicollinearity Phenomenon

Table 3 presents the descriptive statistics and multicollinearity phenomenon for a sample of 17 listed financial firms at NSE in Kenya for seven years, from 2016 to 2022. The study analyzed the impact of women in top management and firm performance as measured by ROA. The descriptive statistics revealed the minimum value, maximum value, mean, and standard deviation of variables such as ROA, women directors, women in audit committees, women in executive management, board size, board meetings, firm size, leverage, capital adequacy, inflation, Gross Domestic Product, audit committee size, and audit committee meetings. These statistics were collected to understand the variation and distribution of different variables used in this study.

Additionally, the multicollinearity problem was absent from the data as the variance inflation factor (VIF) value was below 10 and the tolerance (1/VIF) value was above 0.1 as suggested by (Chu, 2020). A similar approach for testing the multicollinearity phenomenon was done by studies such as (Kimario and Mwagike, 2023; Magoma et al, 2024; Magoma et al., 2022; Magoma et al., 2022; Mwakyeja and Kimario, 2024)

Table 3: Descriptive statistics and Multicollinearity phenomenon

	RO A (%)	WD (%)	WA C (%)	WE M (%)	Bsiz e (#)	BM (#)	FS (#)	LE V (%)	CA (%)	INF L (%)	GD P (%)	AC S (#)	AC M (#)
Obs	119	119	119	119	119	119	119	119	119	119	119	119	119
Min	0.00	6.00	0.00	6.00	4.00	4.00	10.9 0	7.5	0.00	4.70	- 0.30	2.00	3.00
Max	16.5 9	55.0 0	100.0 0	67.0 0	26.0 0	14.0 0	19.0 0	98	92.5 0	8.00	8.00	7.00	8.00
Mea n	3.09	26.8 9	33.82	28.8 6	11.5 6	6.00	14.7 9	78.3 7	21.2 1	6.12	4.12	4.00	4.00
SD	2.95	11.3 5	18.99	13.0 1	3.78	2.55	2.52	16.1 4	15.6 7	1.21	4.42	1.03	1.13
VIF	N/A	1.52 9	1.650	1.39 4	1.48 2	1.39 5	1.73 8	1.86 5	1.67 8	1.05 8	1.02 4	1.27 0	1.52 7
1/VI F	N/A	.654	.606	.717	.675	.717	.575	.536	.595	.945	.977	.787	.655

Key: ROA (Return on assets), WEM (Women in the executive management), WAC (Women in the audit committee), WD (Women directors), CA (Capital adequacy), ID (Independent Directors), FD (Foreign Directors), CA (Capital adequacy), ACS (Audit committee size), ACM (Audit committee meetings), BM (Board Meetings), FS (Firm Size), Bsize (Board Size), GDP (Gross Domestic Product (annual %)), INFL (Inflation (annual %)), Leverage (LEV), N/A (Not applied)

Source: Author's computation, 2024

3.2 Correlation analysis

Table 4 presents the correlation matrix of the study. The response variable (ROA) is negatively related to women directors, women in audit committees, women in executive management, board size, leverage, inflation, and audit committee size. Furthermore, ROA is positively related to board meetings, audit committee meetings, firm size, capital adequacy, and GDP.

Table 4: Correlation Matrix for 119 data points

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. ROA	1												
2. WD	-0.067	1											
	0.47												
3. WACC	-0.131	.414**	1										
	0.157	0											
4. WEM	-0.078	.263**	0.103	1									
	0.398	0.004	0.266										
5. BSI ZE	-0.048	-.214*	-0.168	-.334**	1								
	0.602	0.02	0.067	0									
6. BM	.206*	0.141	.350**	0.044	0.036	1							
	0.024	0.125	0	0.631	0.694								
7. FS	0.174	-.234*	-0.005	0.095	-.299**	0.028	1						
	0.059	0.01	0.955	0.303	0.001	0.765							
8. LEV	-.332**	0.019	0.081	-0.05	0.04	-0.118	-.422**	1					
	0	0.839	0.382	0.589	0.665	0.202	0						
9. CA	.358**	-0.012	-0.107	0.043	-0.054	0.12	.418**	-.980**	1				
	0	0.898	0.248	0.646	0.557	0.195	0	0					

10. IN FL	- 0.09 4	- 0.04 6	0.01 5	0.08 6	- 0.05 4	0.01	0	- 0.02 2	- 0.0 15	1			
	0.31	0.62 2	0.87 5	0.35 2	0.56 2	0.91 2	0.99 9	0.81 4	0.8 75				
11. GDP	0.03	- 0.00 8	0.02 4	0.05	- 0.01 3	- 0.07 8	0.05 7	0.01	- 0.0 15	0.06 7	1		
	0.74 9	0.92 9	0.79 3	0.58 6	0.88 6	0.40 2	0.53 5	0.91 4	0.8 75	0.46 8			
12. ACS	- 0.06 6	0.11 6	- 0.09 8	0.16 4	.197 *	0.16 9	- .253 **	- 0.01 2	0.0 16	- 43.0 18	0.0 14	1	
	0.47 7	0.20 8	0.29 1	0.07 4	0.03 2	0.06 7	0.00 6	0.89 6	0.8 61	0.84 8	0.8 8		
13. A CM	0.08 2	0.14 6	.390 **	- .212 *	- 0.11 1	.349 **	- 0.15 7	0.06 2	- 0.0 64	0.02 8	- 0.0 35	- 0.1 16	1
	0.37 4	0.11 3	0	0.02	0.22 9	0	0.08 9	0.5	0.4 91	0.76 3	0.7 06	0.2 09	
*. Correlation is significant at the 0.05 level (2-tailed).													
**. Correlation is significant at the 0.01 level (2-tailed).													

E-views results, 2024

3.3 Panel regression results

Table 5 presents the regression results of the study. The Hausman test results reveal that the chi-square value is 11.49 and the p-value less than 5% suggesting that the fixed effect model is the best option over the random effect model. Additionally, the R-square value is 43% and the probability of F-statistics is 0.001798 less than 5% suggesting that the model is fit and statistically significant. The test of autocorrelation reveals that the data were free from autocorrelation as the Durbin-Watson test value was 2.11. Data were free from autocorrelation if the Durbin-Watson value is above 1.5 and less than 2.5 as suggested by other empirical studies (Magoma et al., 2024; Magoma et al., 2022; Nuber and Velte, 2021).

Furthermore, the results reveal that the coefficients of WEM and WAC are negative -0.998 and -1.1072 respectively both with significant impact on ROA. WD exerted a positive coefficient (0.368) with an insignificant impact on ROA. Other variables exerted an insignificant impact on ROA with negative and positive coefficients such as CA (-0.081), ACS (-0.057), ACM (2.031), BM (-0.048), FS (-0.05365), BSIZE (-0.8568), GDP (0.1069), INFL (-0.3744), LEV (-0.075).

3.4 Robustness analysis

Two Stage Least Square Method (2SLS) was used for robust testing. The results reveal that FE and 2SLS methods yield the same results (see Table 5). Reliability and validity of data are ensured if different analysis methods are used yielding similar results (Hordofa, 2023). Thus, the study results reveal that the reliability and validity of the sourced data are ensured.

Table 5: Panel Regression results

	ROA		ROA		ROA	
	FE		RE		2SLS	
Variables	Coeff	P-value	Coeff	P-value	Coeff	P-value
WEM	-0.998	0.0151	-0.583	0.0494	-0.998	0.0151
WAC	-1.1072	0.0081	-1.3974	0.0001	-1.1072	0.0081
WD	0.368	0.3731	0.4119	0.1576	0.368	0.3731
CA	-0.081	0.5507	-0.080	0.5052	-0.081	0.5507
ACS	-0.057	0.9413	-0.070	0.8814	-0.057	0.9413
ACM	2.031	0.0917	1.320	0.0450	2.031	0.0917
BM	-0.048	0.9219	0.690	0.0421	-0.048	0.9219
FS	-0.5365	0.7928	0.556	0.5379	-0.5365	0.7928
BSIZE	-0.8568	0.4198	-0.2770	0.5885	-0.8568	0.4198
GDP	0.1069	0.2928	0.1123	0.2647	0.1069	0.2928
INFL	-0.3744	0.5193	-0.3928	0.4897	-0.3744	0.5193
LEV	-0.075	0.8807	-0.3639	0.3620	-0.075	0.8807
R ²	43%		25%		43%	
Adj R ²	25%		15%		25%	
F-statistics	2.332		2.6454		2.332	
Prob (F-statistics)	0.0018		0.004142		0.0018	
D-W Test	2.11		1.9657			
Second-stage SSR	-		-		91.4347	
Instrument rank	-		-		29	
HT (Chi-sq statistic, Prob)	(11.49, 0.043)	FE accepted				
Number of observations	119		119		119	

Key: ROA (Return on assets), WEM (Women in the executive management), WAC (Women in the audit committee), WD (Women directors), CA (Capital adequacy), ID (Independent Directors), FD (Foreign Directors), CA (Capital adequacy), ACS (Audit committee size), ACM (Audit committee meetings), BM (Board Meetings), FS (Firm Size), Bsize (Board Size), GDP (Gross Domestic Product (annual %)), INFL (Inflation (annual %)), Leverage (LEV), FE (Fixed effect), RE (Random effect), 2SLS (Two Stage Least Square), HT (Hausman Test), D-W (Durbin- Watson)

4.0 Discussion of the Findings

4.1 Women in Executive Management

The proportion of women in executive management exhibited a negative and significant influence on firm performance as measured by ROA. Thus, H1 is accepted. The results are consistent with a study conducted in Indonesia (Hamdani et al., 2022) and contrary to other empirical studies that showed women in executive positions exerted a positive and significant influence (Cambrea et al., 2018; Flabbi et al., 2019; Leyva-townsend et al., 2021). Agency theorists argue that women in top management bring fresh perspectives to the decision-making process and this leads to more rigorous monitoring of management behavior resulting in improved financial performance (Adams and Ferreira, 2009). Additionally, Upper echelons theory posits that women at top management levels possess cognitive abilities, values, and experiences that play a pivotal role in influencing a firm's strategic directions and organizational performance (Hambrick and Mason, 1984). From this premise, it is obvious that the results are contrary to what has been advocated by the agency and upper echelons theories.

4.1.2 Women in Audit Committee

Women in audit committee play a vital role in safeguarding shareholder's interest but the study results reveal that the proportion of women in the audit committee had a negative and significant impact on financial performance as measured by ROA. Thus, H2 is accepted. The results are contrary to the results from other empirical studies such as (Al Lawati et al., 2021; Ashari and Krismiaji, 2020). The results are inconsistent with agency and upper echelons theories that argue that the presence of women on the audit committee improves a firm's financial performance. Thus, the results imply that the proportion of women in the audit committee decreased firm performance as the variable exerted a negative and significant effect on listed financial firms' performance.

4.1.3 Women directors

The study reveals that the proportion of women directors positively and insignificantly impacted ROA. Thus, H3 is rejected. The results are inconsistent with other empirical studies (Brahma et al., 2020; Kabara et al., 2022; Yilmaz et al., 2021). Both agency and upper-echelon theories contend that women directors on the board improve the firm's financial performance. Thus, the results are inconsistent with both agency and upper echelons theories.

4.2 Limitations of the study and areas for further studies

This study has some visible limitations. First and foremost, the data used in this study were sourced from 17 listed financial firms at NSE. Thus, it is difficult to generalize the findings of this study. The researcher suggest that future studies should use a mixed approach

incorporating both quantitative and qualitative research methods. The study only focused on influence of women on board, audit committee, and senior positions of 17 listed financial firms in Kenya. Future studies should assess the impact of women in the firm's committees such as audit and risk committee, nomination committee, and remuneration committee and firm performance across listed financial firms in East African stock markets. Lastly, the study used only one accounting metric for measuring performance (ROA). Future studies can examine the impact of women in top management positions and the financial performance of listed banks across the African stock markets by using market-based financial metrics (Tobin's Q).

5. Conclusion, implications, and area for further studies

5.1 Conclusion

The study aimed to assess the impact of gender diversity on top-level management and financial performance of 17 listed financial firms at NSE. The results reveal that both women in audit committees and in executive management had a significant negative impact on ROA. These results indicate that higher representation of women in audit committees and executive management positions decreased the financial performance of listed financial firms in Kenya.

5.2 Implication of the study

The implication of this study affects both the academia and the practitioners. Academics such as researchers can use the findings of this research to do more research related to the impact of women on board and those on senior management on corporate outcomes such as financial performance. To the practitioners, these findings can serve as a wake-up call on what affects the financial performance viewed from a corporate angle.

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Dynamic Skills for achieving Profitability and Long-Term Sustainability of Start-ups MSMEs in the Digital Era and Competitive Business Landscape.

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Abstract

In a digitally evolving and competitive business environment, start-up micro, small, and medium-sized enterprises (MSMEs) encounter various dynamics that shape their profitability and sustainability. This research synthesises existing literature published between 2010 and 2023 to explore and identify the key dynamic skills that drive start-up MSMEs' profitability and long-term sustainability. A comprehensive search was conducted across Scopus, Web of Science, Google Scholar, and Emerald databases. Selected articles were categorised, and the key themes related to dynamic skills were extracted and analysed. The review identifies nine

key dynamic skills essential for start-up MSMEs' profitability and long-term sustainability. These include sales and marketing, customer service, networking and industrial relationships, negotiation, financial management, cross-cultural communication, leadership and problem-solving, digital fluency, and entrepreneurial skills. These competencies enable MSMEs to navigate the challenges of the digital era, maintain a competitive advantage, and achieve long-term sustainability. The study findings provide valuable insights for entrepreneurs, policymakers, and support organisations. By focusing on developing dynamic skills, start-up MSMEs can enhance their resilience and adaptability in a rapidly changing and competitive business environment. Policymakers and support organisations can also use these results to design programs that address the specific needs of MSMEs. Empirically, the study contributes to the existing literature by offering a comprehensive understanding of the skill sets required for the sustainable growth and success of MSMEs. It also provides a foundation for future research and practice in this research domain.

Keywords: *dynamic skills, profitability, competitiveness, sustainability, MSMEs.*

1. Introduction

The entrepreneurship landscape has undergone significant transformation in recent years, with the rise of micro, small, and medium enterprises (MSMEs) playing a pivotal role in driving economic growth and development. MSMEs are crucial to global economies, contributing to job creation, fostering innovation, and diversifying economies (Aggarwal and Joshi, 2024; Krishnan et al., 2020). According to the World Bank (2022), MSMEs comprise approximately 90% of global businesses and account for about 50% of global employment. In emerging economies, particularly in Sub-Saharan Africa, MSMEs comprise 95% of formal companies, accounting for 65% of employment and contributing up to 50% of gross domestic product (GDP) (World Trade Organization (WTO), 2020; World Bank, 2022). Despite their agility, innovative approaches, and dynamic nature, MSMEs face several challenges, including intense competition, limited access to financial resources and initial capital, and market reach. Other challenges include stringent regulatory and compliance requirements, economic volatility, lack of access to expertise and skilled personnel, and difficulties in keeping pace with rapidly evolving technologies and market conditions (Ama & Okurut, 2017; Israel and Kazungu, 2019; Harvie, 2019). These obstacles not only hinder the economic and operational performance of MSMEs but also constrain their ability to leverage their capabilities for sustainable and inclusive growth.

Given the crucial roles that MSMEs play in economies and the challenges they face, various initiatives have been implemented across different countries to support the growth of start-up MSMEs. These initiatives involve a combination of regulatory and policy reforms, financial support and access to credit, capacity-building programs, strategic partnerships, and market access facilitation (Nzumbi and Misungwi, 2019; Wu et al., 2020). Among these initiatives, the North American Free Trade Agreement (NAFTA), the African Continental Free Trade Area (AfCFTA), and the European Union's single market provide MSMEs with access to larger markets and more opportunities for cross-border trade by reducing trade barriers and nurturing

strategic partnerships among member countries. Similarly, countries like China, Vietnam, Japan, Kenya, Tanzania, Nigeria, and South Africa have established industrial parks and special economic zones, such as export processing zones (EPZs) to enhance MSME operations. These parks offer MSMEs tax incentives, logistical support, market information, networking opportunities, and financial and technical assistance (Kumburu et al., 2021; Wu et al., 2020). Other initiatives include the establishment of small business development agencies such as the Small Industries Development Organization (SIDO) in Tanzania, the Small Business Administration (SBA) in the United States, and the Micro Units Development and Refinance Agency (MUDRA) in India. These agencies are tasked with providing entrepreneurship education, mentorship, and advisory services, and helping MSMEs access financial services (Nag and Das, 2015; Israel, 2022).

One of the primary objectives of start-up MSMEs, aligned with various support programs and initiatives, is to achieve profitability and ensure long-term growth amidst fierce competition and evolving market changes (Kawira et al., 2019; Sitaniapessy et al., 2022). However, despite these clear objectives and initiatives, the financial performance and sustainability of MSMEs, particularly start-ups, remain far from flawless. Many MSMEs exhibit significant deficiencies related to their operational, economic, and financial sustainability. A survey by the World Bank (2022) reveals that only 40% of start-up MSMEs are financially stable enough to manage and meet their financial liabilities. Consequently, the remaining 60% face financial crises, struggle to meet their financial obligations and often experience a decline within six months of establishment. These shortcomings result in job losses, economic stagnation, and persistent poverty. Given these encounters, it is evident that achieving profitability and long-term growth requires more than just innovative strategies; it also depends on the dynamic capabilities of managers and employees. This underscores the critical need to cultivate and apply dynamic skills that empower entrepreneurs to anticipate and respond effectively to market dynamics, capitalize on emerging opportunities, overcome challenges, and drive the profitability and long-term growth of start-up MSMEs (Nehete et al., 2011; Palakshappa & Ellen, 2007).

Essentially, dynamic skills encompass a broad range of competencies, including adaptability, innovation, problem-solving, strategic agility, and resilience, all of which are essential for navigating the complexities of the modern business environment. Other critical skills include fluency in financial management, negotiation, digital technologies, and cross-cultural communication. While there is substantial empirical research on the firm and industry dynamics necessary for the success of MSMEs (Odhiambo, 2013; Sreenivasan et al., 2023; Utama et al., 2024; Zamora, 2010), there remains a notable gap in comprehensive systematic literature reviews that specifically examine the dynamic skills driving the profitability and long-term sustainability of start-up MSMEs. This study addresses this gap by systematically reviewing and synthesizing existing literature to identify and evaluate the critical dynamic skills that influence both the profitability and long-term sustainability of start-up MSMEs. In doing so, this study contributes to the existing literature by offering a comprehensive understanding of the specific skill sets essential for MSME success in an increasingly digital and competitive environment. In addition, the study provides practical recommendations for

entrepreneurs, policymakers, and support organizations on how start-up MSMEs can leverage their dynamic skills to navigate and thrive in a rapidly evolving business environment. More importantly, the study identifies potential areas for future research, encouraging more targeted studies on the relationship between dynamic skills and MSME performance in various global contexts.

2. Literature Review

2.1. Start-up MSMEs

Start-up MSMEs are newly established businesses that fall within specific thresholds related to their workforce, revenue, or asset base. These thresholds vary depending on the country, region, geographical location, or industry. For example, in the USA, the Small Business Administration (SBA) defines MSMEs as businesses with employees fewer than 500 (Crane, 2020). In India, MSMEs are companies with up to 200 employees, investing in plant and machinery or equipment not exceeding INR 50 crore (approximately \$6.75 million), and having an annual turnover of less than INR 250 crore (approximately \$33.75 million) (Singh, 2019). In the EU, MSMEs are defined as businesses with less than 250 employees and an annual turnover of no more than €50 million or a balance sheet total of no more than €43 million (Ancarani et al., 2019). In many African countries, particularly in Tanzania, Ghana, and Kenya, MSMEs are defined as businesses with up to 99 employees, with varying annual revenue thresholds depending on the country (Kawira et al., 2019). In South Africa, MSMEs are companies with up to 250 employees and an annual revenue of up to R220 million. In Latin America, particularly in Brazil, MSMEs are defined as businesses with annual revenue between R\$4.8 million and R\$30 million (approximately \$930,000 to \$5.8 million) (Flores et al., 2022). These variations in the definitions of MSMEs across countries and regions reflect the different economic conditions and policy objectives of each country.

2.2. Key Dynamics for Profitability and Long-Term Sustainability of Start-ups MSMEs

Across the globe, MSMEs face various dynamics that either facilitate or impede their economic success and sustainability. Among these dynamic factors, Harvie (2019) and Odhiambo (2013) opine that access to finance and capital, including loans and grants, is essential for start-up MSMEs to invest in growth opportunities, manage cash flow, and scale their operations. Conversely, limited access to finance can constrain a start-up's ability to expand, negatively affecting both profitability and long-term sustainability. Other studies by Taleb et al. (2023) and Ama and Okurut (2017) highlight the critical role of innovation in driving the growth and sustainability of businesses over time. Continuous innovation enables MSMEs to create novel products, services, or processes, allowing them to differentiate themselves in the market, stay ahead of competitors, and meet evolving customer needs. Furthermore, nurturing strong industry relationships can provide start-up MSMEs with valuable resources, knowledge, and opportunities that are essential for immediate profitability and future growth (Ghauri and Elg, 2018; Fjeldstad et al., 2012). Also, Mwenda et al. (2023) emphasize the importance of compliance with legal and regulatory requirements, such as taxation, labour laws, industry standards, and environmental practices, in supporting the long-term sustainability of start-ups.

Compliance ensures that the business operates within the legal framework, avoiding penalties and reputational damage.

Moreover, the ability to proactively identify, assess, and mitigate risks can help start-ups maintain stable operations, contributing to long-term sustainability and consistent profitability (Das, 2015). Apart from this, empirical studies by Zamora (2010) and Abaddi (2024) emphasise the importance of leveraging technological advancements to enhance efficiency, expand market reach, and improve customer interactions. This not only boosts profitability but also positions the business to remain competitive and sustainable over time. Furthermore, Israel (2022) argued that the profitability and long-term sustainability of start-up MSMEs are heavily influenced by the level of competition in the industry. High competition can drive MSMEs to innovate, improve quality, and reduce prices. For start-up MSMEs, intense competition can squeeze profit margins and challenge sustainability, especially due to their limited resources (Sari and Sari, 2022). Similarly, the ability to reach and serve wider target markets, both locally and internationally, is crucial for the growth of start-up MSMEs (Jeong and Chung, 2023; Kawira et al., 2019). Expanding market access drives sales and business expansion. On the contrary, limited market access, attributed to geographic diversity, logistical and communication challenges, regulatory barriers, or economic downturns can restrict growth opportunities and negatively impact long-term sustainability. By addressing and optimizing these dynamic factors, start-up MSMEs can build a strong foundation for enduring success in a competitive and digitally evolving business environment.

2. Review Methodology

This study employed a systematic literature review (SLR) to identify, analyse, and synthesise existing research on the dynamic skills essential for start-up MSMEs' profitability and long-term sustainability. To achieve the objectives of the review, data were collected from peer-reviewed journal articles. The articles selected for review were extracted from online databases, including Scopus, Web of Science, Google Scholar, and Emerald. These databases were chosen because they are highly regarded scientific resources, offering a wide range of peer-reviewed articles (Chhatoi et al., 2021). The review focused on relevant articles published between 2010 and 2023, following pre-determined inclusion and exclusion criteria (see Table 1) to ensure an emphasis on recent developments in digital transformation and the evolving competitive business environment.

Table 1. Parameters for inclusion and exclusion criteria

S/N.	Parameters	Inclusion criteria	Exclusion criteria
1	Focus	Articles that focus on skills relevant to MSMEs, their profitability and sustainability	Studies that do not focus on dynamic skills or are unrelated to MSMEs, profitability, and sustainability
2	Period	Articles must have been published between the year 2010 and 2023	Articles published before 2010 or after 2023

3	Types of articles	Peer-reviewed journal articles, conference papers, review articles, book chapters, reports, and policy briefs	Non-peer-reviewed articles, opinion pieces, editorials, or non-academic publications.
4	Language	Articles must be available in English	Articles not published in English.

To ensure comprehensive coverage of relevant articles, the search string was formulated using Boolean operators with combinations of keywords related to dynamic skills, MSMEs, profitability, sustainability, the digital era, and the competitive business landscape. The complete search string used in Scopus, Web of Science, Google Scholar, and Emerald was: ("dynamic skills" OR "dynamic capabilities") AND ("profitability" OR "long-term sustainability" OR "competitive advantage" OR "business growth") AND ("start-up" OR "MSMEs" OR "small and medium enterprises" OR "micro-enterprises") AND ("digital era" OR "digital transformation" OR "technology adoption" AND "competitive business landscape" OR "profitability" OR "sustainability" OR "business growth" OR "competitive advantage" OR "long-term sustainability"). Based on this search, 4,654 articles were identified. Of these, 46 articles met the inclusion criteria and were included in the review. The search was conducted between 20th and 25th February 2024. Figure 1 presents a flow diagram that visualizes the process of selecting articles for inclusion in this review.

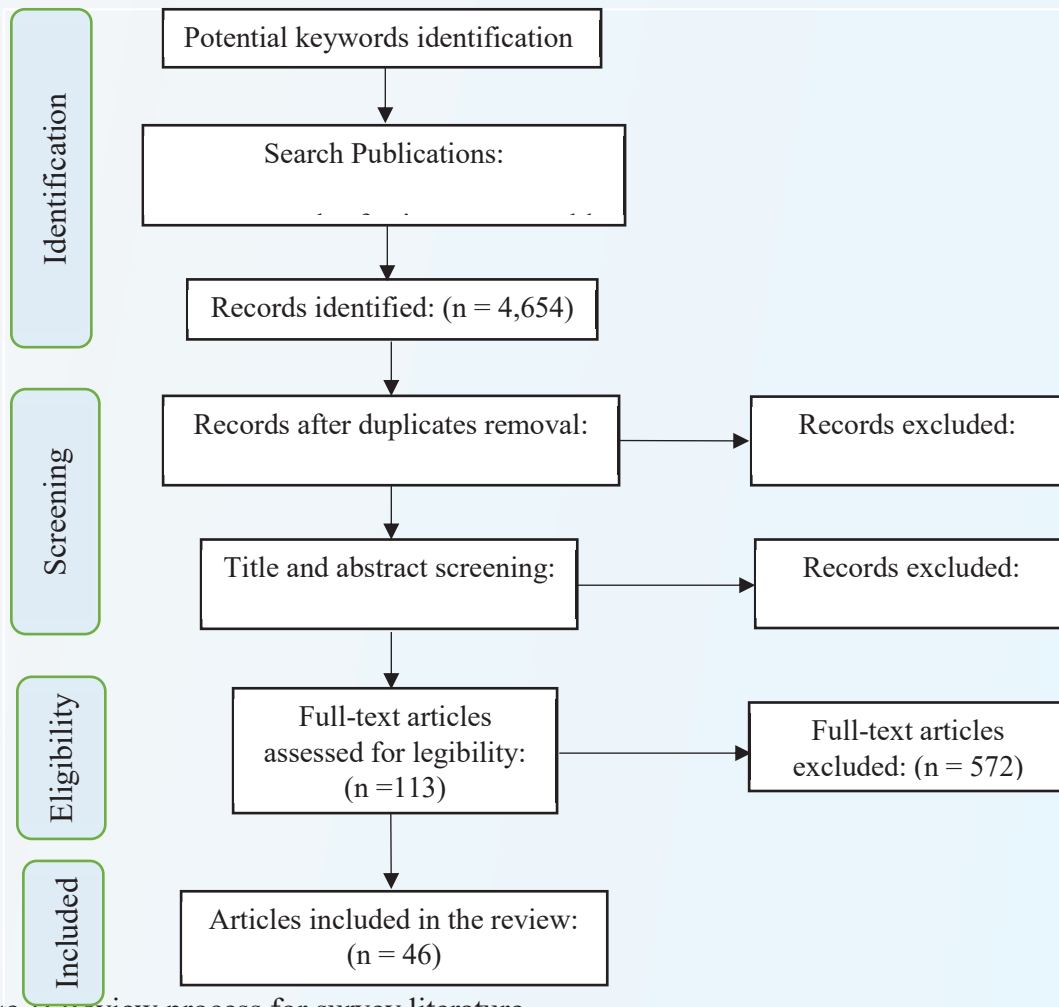


Figure 1: Review process for survey literature
Source(s): Modified from Ali et al. (2018).

4. Results and Discussion

4.1. Descriptive Analysis of Reviewed Articles

This section provides a summary of the review findings on the dynamic skills essential for the profitability and long-term sustainability of start-up MSMEs. It provides an overview of the distribution of the reviewed journal articles, categorized by journal publishers, yearly publication trends, publication countries, key sectors in which MSMEs operate, and the recurring themes related to dynamic skills that emerged from the reviewed articles.

4.1.1. Journal Category

Table 2 enlists the major journals in the field of dynamic skills for MSME profitability and long-term sustainability. The World Journal of Entrepreneurship, Management and Sustainable Development, Benchmarking: An International Journal, Journal of Small Business and Enterprise Development, and Asia Pacific Journal of Marketing and Logistics are highlighted as leading journals in this domain, each featuring four articles. Other journals, such as Critical Perspectives on International Business, Journal of Business & Industrial Marketing, E-Journal

of Humanities, Arts and Social Sciences, Continuity & Resilience Review, and Journal of Technology Management & Innovation, also contribute multiple articles on MSME profitability and sustainability. Thus, these journals are regarded as relevant sources of information on the performance and sustainability of start-up MSMEs.

Table 2. Distribution of reviewed articles by journal

Journal name	Frequency
International Journal of Commerce and Management	2
Critical Perspectives on International Business	3
Journal of Small Business and Enterprise Development,	4
Management & Sustainability: An Arab Review	2
Benchmarking: An International Journal	4
Management Research Review	2
Journal of Scientometric Research	3
European Journal of Marketing	2
World Journal of Entrepreneurship, Management and Sustainable Development	4
Journal of Business & Industrial Marketing	3
E-Journal of Humanities, Arts and Social Sciences	3
Asia Pacific Journal of Marketing and Logistics	4
IIM Ranchi Journal of Management Studies	1
Continuity & Resilience Review	3
Journal of technology management & innovation,	3
Aslib Journal of Information Management	2
Journal of Innovation and Knowledge	1

4.1.2. Trends in publication

Figure 2 demonstrates the trend of publications in the sphere of start-up MSMEs' performance and sustainability from 2010 to 2023. The trend reveals a significant increase in publications in 2023, with six articles, followed by 2012, 2014, and 2016, each with four articles. The years 2013, 2017, and 2019 had the least number of articles on start-up MSMEs' profitability and sustainability.

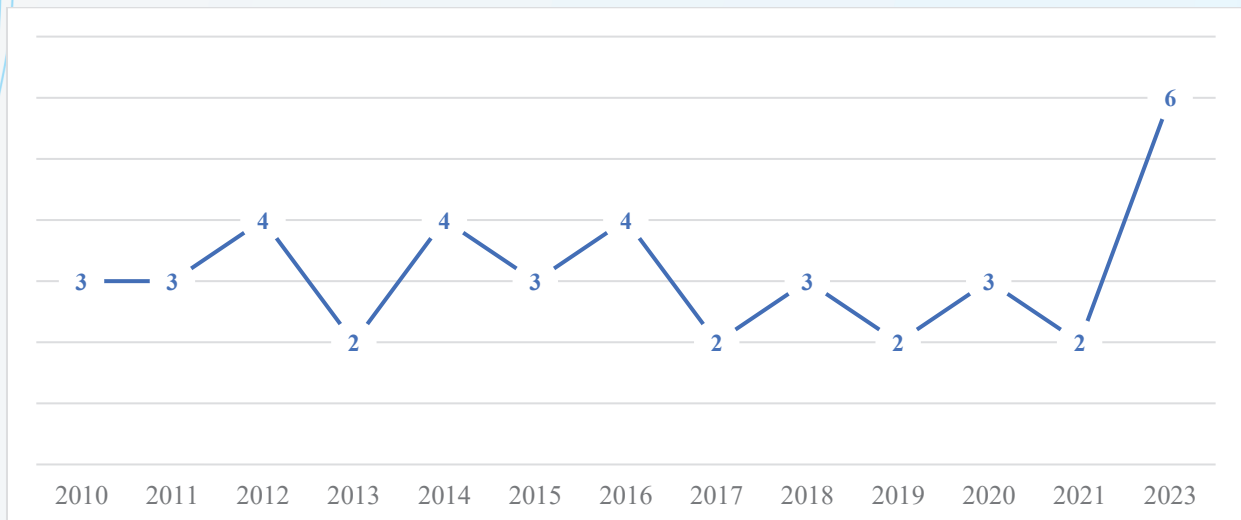


Figure 2. Year-wise analysis of journal articles

4.1.3. Publication Country

Figure 3 provides an overview of the country-wise distribution of publications on start-up MSMEs' profitability, performance, and long-term sustainability. India stands out with the highest number of studies in this domain, featuring six articles. Additionally, the United States, Kenya, the Philippines, Tanzania, Jordan, Indonesia, and Uganda have also demonstrated a strong research focus on topics related to the performance and long-term sustainability of start-up MSMEs.

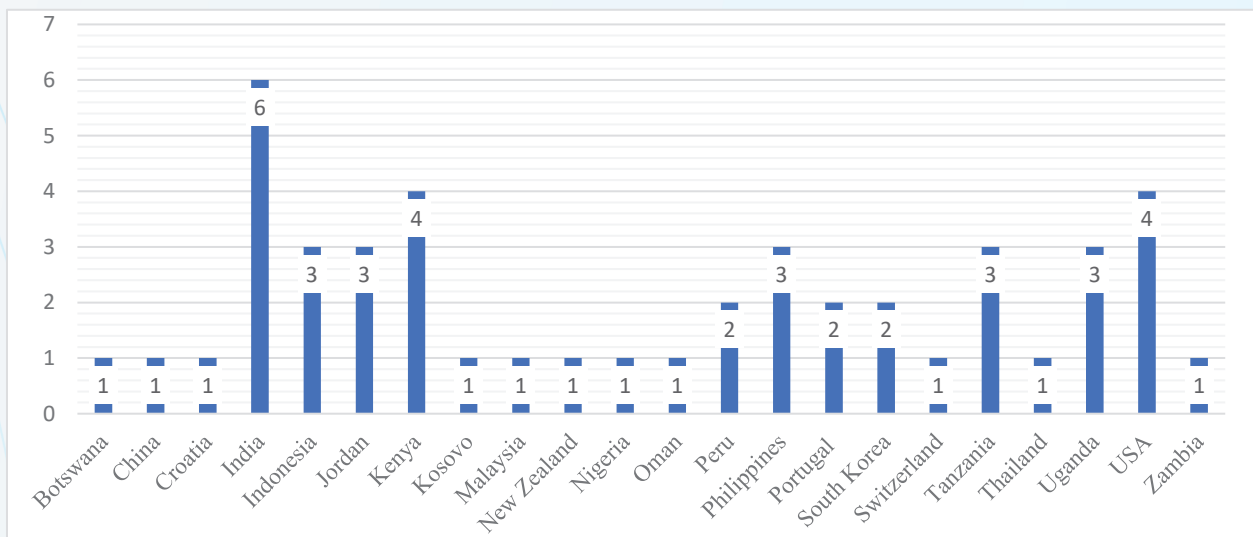


Figure 3. Country-wise analysis of journal articles

4.1.4. Recurring Dynamic Skills for MSMEs' Profitability and Sustainability

The analysis of the reviewed articles reveals a range of dynamic skills essential for the profitability and long-term sustainability of start-up MSMEs (see Table 3). Entrepreneurial and financial management skills are highlighted as essential for achieving profitability and

sustaining long-term success. Furthermore, the studies underscore the significant roles of sales, marketing, and customer service skills, negotiation skills, leadership and problem-solving skills, and digital fluency as key factors for the profitability and long-term sustainability of start-up MSMEs in the digital era and competitive business landscape.

Table 3. Prominent skills for MSMEs' profitability and sustainability

Relevant skills	Frequency
Sales, marketing and customer service skills	5
Networking and collaborative relationships	4
Negotiation skills	5
Financial management skills	8
Cross-cultural communication skills	4
Leadership and problem-solving skills	5
Digital fluency	6
Entrepreneurial skills	9

4.1.5. Key operating sectors for start-up MSMEs

Figure 4 presents the results of the analysis conducted to determine the dominant sectors in which MSMEs operate. The manufacturing sector is identified as the most dominant, being reported by 11 of the surveyed articles. This is followed by the retail and wholesale trade sector, with 8 articles, and the textiles and apparel sector, with 7 articles. Overall, MSMEs operate across various sectors of the economy, extending to agriculture and agribusiness, construction, services, real estate, tourism and travel.

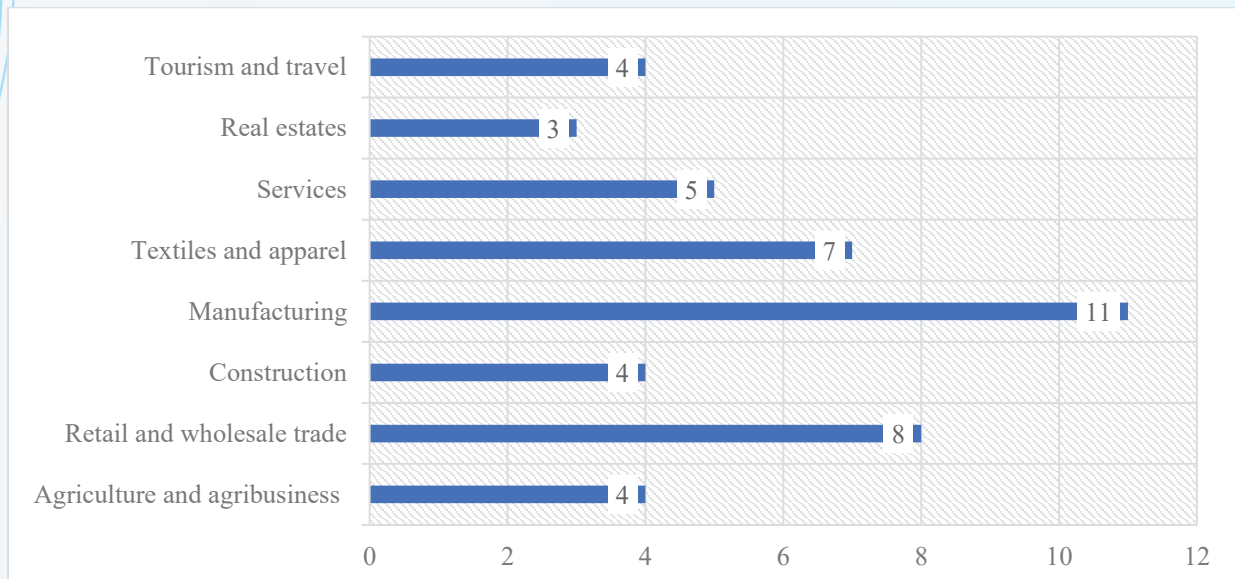


Figure 4. Sector-wise analysis of operating MSMEs

4.2. Dynamic Skills for Profitability and Long-Term Sustainability of MSMEs

Based on the literature review, we identified, synthesized, and summarized nine key dynamic skills essential for start-up MSMEs' profitability and long-term sustainability in the digital era and competitive business landscape. Table 5 provides a precise summary of these dynamic skills, which are discussed in detail in this section.

4.2.1. Sales and Marketing Skills

Reviewed studies reveal that in an increasingly competitive business landscape, sales and marketing skills are critical to the profitability and long-term sustainability of business firms, particularly start-up MSMEs (Ehrensperger et al., 2022; Høgevold et al., 2024). Specifically, strong sales skills help in persuading potential customers to purchase products or services and in building and maintaining customer relationships. Effective marketing strategies, on the other hand, help MSMEs build strong brand awareness, understand customer needs, develop persuasive sales pitches, and close deals efficiently. Based on this, it is argued that both sales skills and marketing strategies impact the ability of start-up MSMEs to attract new customers and secure a steady stream of income, which is crucial for growth, profitability, and sustainability (Abu-ELSamen et al., 2011; Pelham, 2006). Overall, sales and marketing skills enable start-up MSMEs to build a strong customer base, enhance brand reputation, and foster adaptability in a competitive business environment.

4.2.2. Customer Service Skills

In a crowded market, excellent customer service can differentiate a start-up MSME from its competitors. Customer service skills, assessed in terms of the firm's ability to effectively handle customer feedback and complaints, build strong relationships with customers, communicate effectively, and provide support, are integral to enhancing the firm's profitability

and sustainability (Pholphirul et al., 2022; Sheth et al., 2020). High-quality customer service ensures that customers are satisfied with their purchases and experiences with the company. Such satisfied customers are more likely to become repeat buyers and recommend the business to others, which, according to Lelo and Israel (2024), is vital for long-term growth and sustainability. Consistently good customer service helps build a strong, positive brand reputation, leading to a competitive advantage and increased market share. Conversely, poor customer service skills can damage a brand's reputation and lead to lost business (Sheth et al., 2020; Pholphirul et al., 2022). In essence, customer service skills serve as a bedrock for the profitability and long-term sustainability of start-up MSMEs. They help in building a loyal customer base, allowing MSMEs to differentiate themselves from competitors.

4.2.3. Networking and Collaborative Relationships

Networking and collaborative relationships are essential for gaining a competitive edge, achieving profitability, and ensuring the long-term sustainability of start-up MSMEs. By forming partnerships with other businesses, mentors, or industry experts, start-ups can access valuable knowledge and expertise, helping them make informed decisions and avoid common pitfalls (Eyaa et al., 2010; Palakshappa and Ellen, 2007). It provides opportunities for start-ups to access and share resources such as technology, capital, and human resources, which might otherwise be out of reach, at reduced costs. According to Jeong and Chung (2023) and Ghauri and Elg (2018), sharing resources through collaborative relationships enables MSMEs to achieve economies of scale in areas such as marketing, R&D, and logistics, thereby reducing operational costs and enhancing profitability. Furthermore, partnerships with established firms or networks keep start-ups informed about the latest technological advancements, market trends, and customer preferences, enabling them to quickly adapt to changes in the business environment and secure long-term sustainability. In essence, collaborating and networking open doors to new markets, customer bases, and distribution channels, all of which are crucial for growth, long-term sustainability, and profitability (Israel, 2022; Saleh et al., 2020; Utama et al., 2024).

4.2.4. Negotiation Skills

In a competitive business environment, maintaining strong negotiation skills with suppliers, customers, and investors is key to the success and long-term sustainability of business firms (Fernandez-Malpartida & Dextre-Beteta, 2023; Vojvodić et al., 2020). Specifically, effective negotiation with suppliers can lead to better pricing, favourable payment terms, and discounts, directly reducing operational costs, which can translate into higher profit margins. In addition, skilful negotiation with customers can help start-ups secure contracts with advantageous terms, such as higher pricing, recurring orders, or extended service contracts. This contributes to steady revenue streams and improved cash flow, which are vital for the long-term sustainability and growth of start-up MSMEs (Ortigueira-Sánchez & Stein, 2022). Moreover, negotiating terms that allow for sustainable sourcing, production, and distribution can attract

environmentally-conscious customers and investors. Synthesized literature provides sufficient evidence to argue that negotiation skills are pivotal for MSMEs in navigating the competitive business environment. They influence the profitability and long-term sustainability of start-ups by optimizing costs, fostering strategic relationships, and maintaining a steady revenue stream (Vojvodić et al., 2020; Fernandez-Malpartida & Dextre-Beteta, 2023).

4.2.5. Financial Management Skills

Financial literacy is essential for effectively managing the financial aspects of a business, diversifying income streams, and ensuring that it remains profitable, compliant, and sustainable in the long term (Anshika & Singla, 2022; Susan, 2020). Skills related to budgeting, for instance, enable start-up MSMEs to create accurate budgets and financial forecasts, ensuring that resources are allocated efficiently. This helps avoid over-expenditure and underfunding, which can be detrimental to profitability (Buyondo, 2024). Moreover, the ability to understand and control costs is essential for maintaining proper cash flow, ensuring that start-ups have enough liquidity to meet their short-term obligations, such as paying suppliers, employees, and other operational costs. This is crucial for avoiding financial crises that could jeopardize the long-term sustainability and reputation of the business (Nassuna et al., 2023). In addition, skills in analysing financial data are vital for start-ups to accurately identify the most profitable services and make informed reinvestment decisions, whether through new technologies, marketing, or business diversification. Furthermore, reviewed studies suggest that financial literacy ensures that start-ups comply with tax laws and regulations (Talip & Wasiuzzaman, 2024; Alalawi et al., 2023), thereby helping to avoid legal penalties that could harm profitability and reputation.

4.2.6. Cross-Cultural Communication Skills

Literature provides sufficient evidence of a positive relationship between cross-cultural communication skills, long-term sustainability, and profitability in start-up MSMEs (Peng and Zhou, 2021; Charoensukmongkol, 2015). Based on the reviewed articles, we establish that a culturally sensitive start-up enhances its ability to adapt to and navigate the cultural and communication barriers in different markets, enabling it to thrive over time. Effective cross-cultural communication skills allow start-ups to tailor their products, services, negotiation styles, and marketing strategies to align with diverse cultural markets and preferences (Guedes et al., 2023; Sitaniapessy et al., 2022). This approach can attract a broader customer base, including socially conscious consumers. Moreover, understanding and respecting cultural differences builds a positive brand reputation and fosters strong relationships with international partners, suppliers, and customers. These factors, as opined by Abugre (2018), contribute to increased sales and profitability, leading to the long-term viability of start-ups in diverse global markets. In addition, understanding the cultural differences of international clients, suppliers, or partners during negotiations can result in more favourable deals, cost savings, and higher profit margins, all of which are critical for the profitability and long-term sustainability of start-ups (Peng and Zhou, 2021; Charoensukmongkol, 2015).

Table 5: Dynamic skills for profitability and long-term sustainability of MSMEs

Key dynamic skills	Indicators	References
Sales and marketing skills	Expertise in: (1) identifying market needs (2) market research and analysis (3) promoting products or services (4) branding and positioning (5) sales strategy and customer acquisition (6) managing customer relationship	Kawira et al (2019), Adewole (2018), Guedes et al. (2023)
Customer service skills	The capability to: (1) provide excellent service (2) build strong customer relationships (3) handle customer feedback and complaints effectively (4) communicate effectively and provide support to customers	Pholphirul et al. (2022), Sheth et al. (2020), Mwaanga (2014)
Networking and collaborative relationships	The ability to: (1) leverage relationships with key players in the industry (2) build connections and maintain relationships with key players in the industry (3) exchange information and resources with key players in the industry	Lim (2017), Kenny and Fahy (2011), Wang et al. (2014)
Negotiation skills	The ability to: (1) negotiate favourable terms with suppliers, customers and investors (2) resolve conflicts and reach compromises (3) build and maintain business relationship	Fernandez-Malpartida & Dextre-Beteta (2023), Ortigueira-Sánchez & Stein (2022)
Financial management skills	Proficiency in: (1) budgeting and financial planning (2) cash flow management (3) investment analysis and financial forecasting	Susan (2020), Talip and Wasiuzzaman (2024), Legaspi (2012)

Key dynamic skills	Indicators	References
Cross-cultural communication skills	The ability to: <ul style="list-style-type: none"> (1) understand and appreciate differences and similarities between cultures (2) be attuned to non-verbal communication (3) adapt communication styles and approaches across different culture 	Abugre (2018), Harvie (2019), Odhiambo (2013)
Leadership and problem-solving skills	The ability to: <ul style="list-style-type: none"> (1) guide and motivates teams (2) make rational decision and solve problems (3) the ability to think critically and analyse effectively (4) provide visionary and inspirational leadership (5) maintain adaptability and resilience 	Lathabhavan and Kuppusamy (2023), Razzaque et al. (2024), Malewar & Nair (2014)
Digital fluency	Proficiency in: <ul style="list-style-type: none"> (1) using digital tools, platforms, and technologies (2) online marketing and e-commerce (3) data analysis and digital analytics 	Zamora (2010), Lathabhavan and Kuppusamy (2023)
Entrepreneurial skills	The ability to: <ul style="list-style-type: none"> (1) innovate (2) take calculated risks (3) effectively identify and seize opportunities (4) challenge competitors and pursue market share (5) make strategic decisions and take actions 	Nehete et al. (2011), Das (2015), Panigrahi (2016), Al Mamun et al. (2019)

4.2.7. Leadership and Problem-solving skills

Leadership and problem-solving skills serve as the foundation for steering start-up MSMEs toward profitability and ensuring their long-term sustainability. MSME managers who inspire and encourage a culture of continuous learning, make informed and inclusive decisions, and guide their teams foster a culture of accountability and innovation, essential traits for navigating competitive markets (Subramanian and Suresh, 2024; Razzaque et al., 2024). Such leadership approach creates a positive work environment, which drives employee satisfaction, retention, productivity, and ultimately, profitability and sustainability. Similarly, MSME managers with strong problem-solving skills can quickly identify issues, evaluate alternatives, and implement creative solutions that minimize costs, manage unforeseen risks, and maximize

opportunities (Sreen et al., 2024). With effective problem-solving skills, start-ups can identify market inefficiencies and develop innovative products, services, and processes that distinguish them from competitors, thereby driving profitability and sustainability. It ensures that start-ups are adaptable and resilient, enabling them to pivot when necessary to meet changing customer demands or leverage new technologies (Priyaadarshini and Jena, 2024; Razzaque et al., 2024). In essence, leadership and problem-solving skills empower MSMEs to continuously refine their business models and value propositions, ensuring that they remain resilient and competitive.

4.2.8. Digital Fluency

Digital fluency is key to enhancing operational efficiency, customer engagement, innovation, cost management, and expanding market access for start-up MSMEs (Rutainurwa et al., 2024; Albannai et al., 2024). Proficiency in digital marketing, for example, enables MSMEs to promote their products or services and collaborate with both internal and international partners. This allows start-up MSMEs to engage with customers and suppliers through various platforms, such as social media and email marketing, reaching a broader market and accessing resources more efficiently and cost-effectively than through traditional marketing and sourcing methods. Digital fluency enables MSMEs to sell products and services globally through online platforms, expanding their market reach and boosting revenue potential, which contributes to their growth and long-term sustainability (Lathabhavan and Kuppusamy, 2023; Singh, 2019). The resulting cost savings and increased efficiency also allow businesses to allocate resources more effectively. Furthermore, digital fluency opens up opportunities for start-up MSMEs to explore innovative business models, such as e-commerce, subscription services, or digital products (Faugoo and Onaga, 2022). These models can increase revenue streams, help MSMEs meet emerging customer needs, and maintain competitiveness and sustainability in markets.

4.2.9. Entrepreneurial Skills

Empirical studies highlight the crucial role of entrepreneurial skills in building resilient businesses in competitive environments characterized by rapidly changing technology and market demands (Franco et al., 2021; Sari and Sari, 2022). In essence, the innovative posture inherent in entrepreneurial ventures enables start-ups to develop novel products, services, and business models. According to Taleb et al. (2023) and Kyal et al. (2022), this innovative approach allows MSMEs to offer unique value propositions, attract customers, and create new revenue streams, thereby boosting profitability. Besides, MSMEs that are adaptable and proactive in volatile market conditions are better positioned to pivot their strategies, embrace new technologies, and respond to market shifts. Such adaptability is key to remaining relevant and competitive over the long term (Biswas, 2024; Kryeziu et al., 2024). Moreover, entrepreneurs who are skilled at assessing, managing, and mitigating risks, and making informed decisions, are more likely to build resilience in competitive and volatile business environments. Drawing on the reviewed literature, it can be argued that entrepreneurial skills serve as a foundation that empowers start-up MSMEs to navigate the complexities of the business environment, capitalize on opportunities, avoid costly mistakes, and ensure long-term sustainability in a competitive and volatile market.

5. Conclusion and Managerial Implications

In the digital era and an increasingly competitive business landscape, the profitability and long-term sustainability of start-up MSMEs hinge on a dynamic set of skills that empower entrepreneurs to navigate complex challenges and seize emerging opportunities. This review underscores the critical importance of key skills, including cross-cultural communication, leadership and problem-solving, negotiation, and financial literacy, in driving the profitability, growth, and resilience of start-up MSMEs. In addition, the ability to leverage digital tools, maintain a customer-centric approach, foster strong networks and collaborations, and apply entrepreneurial skills further enhances an MSME's capacity to thrive amidst rapid technological changes and volatile market conditions. Ultimately, these dynamic skills form the bedrock upon which start-up MSMEs can build sustainable and profitable ventures, ensuring their continued success in an ever-evolving global marketplace. As digitalization continues to reshape industries, the ongoing development and application of these skills will be pivotal in determining the future trajectory of MSMEs.

Based on the review results, this study offers several managerial implications to guide entrepreneurs, policymakers, and support organizations in fostering the growth and success of start-up MSMEs. For start-up MSMEs, the study emphasizes the importance of investing in digital tools and platforms that enhance market research, customer engagement, and networking. Entrepreneurs are encouraged to adopt technologies such as customer relationship management (CRM) and supplier relationship management (SRM) systems, electronic data interchange (EDI), and enterprise resource planning (ERP) solutions. In addition, entrepreneurs should actively engage in industry networks, business associations, and digital platforms to connect with potential partners, mentors, and investors. To support this, policymakers are advised to promote public-private partnerships that facilitate MSMEs' integration into larger supply chains, with business incubators and accelerators playing a pivotal role in fostering these connections. For business support organizations, the study recommends developing targeted training programs that equip aspiring entrepreneurs with essential skills such as leadership, problem-solving, digital fluency, financial literacy, negotiation, cross-cultural communication, and entrepreneurship. These skills are crucial for creating flexible business models capable of quickly responding to market changes or disruptions. Lastly, policymakers can further support start-ups by offering subsidies or grants for skills development, enhancing start-ups' ability to maintain profitability and long-term operational resilience. Scopus, Web of Science, Google Scholar, and Emerald

6. Limitations and Direction for Further Studies

This study primarily focuses on reviewing and synthesising existing literature from three research databases: Emerald, Scopus, Google Scholar, and Web of Science, specifically examining research journal articles published between 2000 and 2023. Due to the selection bias inherent in this publication period, the review process may not fully capture relevant studies or

the complete range of dynamics that influence the profitability and long-term sustainability of start-up MSMEs, particularly in the rapidly evolving digital and competitive landscape before 2010 or after 2023. Moreover, the findings of the reviewed articles are drawn from various geographical contexts and industries, which limits the generalizability and applicability of these findings to specific sectors or regions. Therefore, further studies could explore the relevance and effectiveness of dynamic skills for start-ups' profitability and long-term sustainability within specific sector and geographic contexts. In addition, the reviewed articles primarily focused on the firm's dynamic skills, with less emphasis on external factors such as economic conditions, regulatory changes, market dynamics, or technological disruptions, which can also significantly impact the profitability and sustainability of start-up MSMEs. Given this, future research could expand its focus to examine how these external factors interact with a firm's dynamic skills to influence the financial success and sustainability of start-up MSMEs. These research directions could help build a more comprehensive understanding of the internal and external dynamics that contribute to the profitability and sustainability of start-up MSMEs in the competitive business environment and digital era.

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Assessing the Factors Affecting Implementation of Effective Information Security Measures at the College of Business Education (CBE) Dar es salaam – Tanzania

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Abstract

Information security issues that have been occurring in some of HLIs in Tanzania made the researcher to be curious to investigate on the factors affecting effectiveness of information security measures. The main objective of this study was to assess the effectiveness of information security measures at the College of Business Education (CBE) - Tanzania. Specifically, the study assessed the level of effectiveness and identified factors affecting implementation of information security measures (as described by ISO and literatures) at the College of Business Education (CBE). Descriptive research design and mixed methods approaches were employed to achieve study objectives. Questionnaires were distributed to a randomly selected sample of 136 college employees. Descriptive statistics was employed in the analysis of data using SPSS. Chi-Square Test and Correlation analysis were used to determine association and nature of relationship between variables respectively. Interview guide was used to gather in-depth information from key informants to add insight on the quantitative findings. The study findings revealed that the level of effectiveness of information security measures was moderate. Furthermore, the study findings realized several common factors affecting the implementation of information security measures as human, environmental, technical, and financial factors. The study recommendations were that investments should be made in improving information security management and participatory implementation of information security measures in all information systems used by the college.

Keywords: *Information, Information security, information systems and Risk management.*

Introduction

Information security has pushed itself into publicity as the favored technique to protect the organization's information assets. All these issues called the researcher curiosity on investigating the adoption of information security measures at the College of Business Education (CBE). Basically, the topic of this study was focused on the awareness of information security measures, the level of effectiveness of information security measures and factors affecting the embracing of information security measures in higher learning institution in Tanzania with specific reference to the College of Business Education (CBE) Dar es Salaam. In Tanzania, the website of Open University of Tanzania was hacked on 2017, University of Arusha and Tumaini University Makumira also experienced the same problem (Kundy and Lyimo, 2019). About information security vulnerabilities and the emerging computer related offenses, the government of the United Republic of Tanzania established the Cybercrimes Act of 2015 to address various related issues, by mentioning few are illegal access, illegal interception, illegal data interference, data espionage, illegal system interference, computer related forgery as well as computer fraud. The College of Business Education (CBE), like other institutions of higher education in developing countries, is not invulnerable to the effects of the global advancement of ICTs that are associated with information security breaches. For instance, the college has employed different information management systems including students' registration systems, financial management system, library management system, staff e-mailing, etc. All these information systems are in danger of being misused due to inadequate information security as stipulated in the CBE (2018) ICT policy. Dzazali and Zolait (2012) argued that organizations have been focusing on technological side of information security and neglect other components of information security risks such as people, processes and business objectives that support the technology with the regard that human element (e.g., social factors) embraces the highest information security risk to organizational information. From this ground, if an organization fails to manage its information system effectively people may interrupt and share or block the flow of information and hence lack of confidentiality and integrity of the information. In order to protect information and other related properties, institutions may employ a set of information security measures suggested by international standards and frameworks widely recognized by professionals and organizations around the world (Junior and Santos, 2015). According to Dzazali and Zolait (2012), public organizations also encounter the challenge of protecting their information since they operate in an environment characterized by increasing complexity, interconnections, uncertainties, and reliance on technology. They not only need to carry out their respective missions but also adhere to the standards and procedures of central government agencies. These organizations also need to guarantee the confidentiality of citizens' information, availability, and integrity and community accessibility for the continuity of public services, many of which are intervened by technology. Higher learning institutions should ensure information confidentiality and integrity for both administrative and learning facilitations. Junior and Santos (2015) argued that some organizations possess information as significant or tactical assets and, therefore, they invest much effort to protect it. Implementation of information security measures should be based on needs identified by the Information Security Governance structure of each institute, even though it may be influenced by the institutional environment in which organizations are

implanted. ISO 27001 and different literatures have proposed the measures to help public and private institutions to effectively protect their information. In that view, the government of the United Republic of Tanzania has set several frameworks to facilitate information protection including the Tanzania Cybercrimes Act of 2015 and Information Act of 2018. A Report from the National Audit Office of Tanzania (2020) on the information systems evaluation in Higher Learning Institutions of Tanzania from 2017 to 2019 discovered extreme information security threats that might be taken as an advantage by intruders to attack the systems. Thus, the problem of insufficient implementation of effective information security measures against information security vulnerabilities among higher learning institutions is not adequately addressed in ensuring confidentiality, availability, integrity, and accessibility of information in the organizations. This was the reason why this study was pursued to assess the implementation of information security measures at the College of Business Education (CBE).

Literature Review

Effectiveness of Information Security Measures

Effective information security is promoted by wide-ranging approaches that consider various areas within and outside of information system (Nieles and Dempsey, 2017). In other description, effectiveness of information security measures is ensured by relevant settings of the measures in a particular area. Organizations need to have a wide range of approaches in accordance with its environment to tackle a particular information security issue. One information security measure can be appropriate to a certain security risk but not to another risk. The study of (Mishra and Chasalow, 2011) found a significant relationship between information security policies and effectiveness of information security measures. Their study also revealed many that research literatures on information security suggests that clearness in policy, audit and control systems and practices of preventing information leverage practices ensure corporate information security effectiveness. The uses of technology such as software to detect information breaches, security policy, physical and environmental security are what can ensure effective information security measures in an organization (Hagen, 2013). Effective implementation of security measures is direct proportional to vulnerability analysis where by potential threats are identified and evaluated to determine their probable seriousness in order to select an appropriate approach to mitigate them (UNICRI, 2015). For an organization to improve the level of information security there must be effective risk assessment on its information systems to figure out any possible danger or threats so that they can be mitigated accordingly. Hagen, Albrechtsen and Hovden (2008) found that many researches were addressing effectiveness of information security measures in a technological point of view but in their study effectiveness of information security measures was addressed to be possible under a combination of various components. This means that technical measures are not enough to guarantee information security rather, an organization and individuals must embrace information security measures awareness (Rezgui and Marks, 2008). According to Mugarza, Flores and Montero (2020), updating information security tools especially software updates is very important in the world of ICTs. Anderson (2017) argued that effectiveness of information security measures results from frequent monitoring and risks assessment. This means that, there

is significant relationship between implementation process of information security measures and effectiveness of information security measures. Hagen, Albrechtsen and Hovden (2008) found an inverse relationship between implementation of information security measures and effectiveness of the measures which means that the measures can be implemented but not effectively. Rahman and Widyarto (2013) conducted a study to explore whether information security in an organization abide by what has been addressed in the code of conduct in human resource management, the findings discovered that the effectiveness of security measures can be ensured by minimizing the risks of human error through confidentiality agreements, terms and conditions of employment as well as information security education and training. Thus, HLIs need to have a human resources code of conducts which are strongly address information security measures and regulate the employees to follow the measures. Mamade and Dabala (2022) study depicted that respondents' protection measures were significantly associated to and influenced by education level and cyber-security measures. The College of Business Education (CBE) must be aware of information security measures so that they can be able to implement the measures with effective impact. Khan et al (2011) revealed also that awareness of information security measures is what guarantees an effectiveness of information security measures through founding a fundamental part of any organizations' general information security managing strategy.

Factors Affecting Implementation of Information Security Measures

Despite the increase in the number of cases of information security violations, information users in institutions still fail to comply with information security guidelines, and leads to negative consequences (Ahlan, Lubis and Lubis, 2015). It indicates that information systems users are the most likely factor to pose danger to an institution's information security. Human elements (e.g., social factors) bear the highest information security risk to organizational information (Dzazali and Zolait, 2012). Kumah (2022) discovered that human resource management activities cause the problem of human-oriented factors in managing information security in the sense that if employees are motivated and guided to engage in safe security behavior, an organization will be able to effectively implement the security measures through monitoring changing environment, induction trainings, recruitment, etc. Institutions should pay much attention to information security by considering human relation factors for the safety accommodation of information systems as their impact on security is significant (Hagen, 2013). Hook Security (2021) argued that the biggest weakness in any information security system is the human factor in the context of their habits and belief in an organization. Staff and students have different backgrounds and the nature of the society they live in affects their attitude in performance and brings important issues to influence security (Al-Rawas and Millmore, 2002). Rezgui and Marks (2008) argued that thoroughness, traditional beliefs and societal circumstances are among the factors that affect higher learning institutions' staff behavior and perception towards their working performance in general and information security awareness in specific. Semlambo, Mkude, and Lubua, (2021) conducted a desk review of various literatures on the factors affecting information security, seven (7) literatures out of forty revealed that human factors like employee's behavior and understanding in relation to institutional IS security are key factors affecting the security of information system. Fourteen

(14) literatures out of forty revealed that work environment is among the key factors affecting the implementation of information security measures in an organization. This is to insist that much attention should be paid on the users and other surroundings of the information systems in an organization in relation to information security measures proposed by the organization. Yeo, Rahim and Miri (n.d) revealed in their study that management support in terms of financial and technical assistance are serious factors which affect risk assessment and awareness building on information security. Manneback and Padyab (2021) in their study, found four factors affecting the implementation of information security measures as technical security (technologies and experts), rules and policies, employee's awareness of security concerns as well as changing of working environment. Baino (2016) conducted a safety risk assessment survey on information systems and revealed that a large proportion of information system breaches result from system managers not updating software. Generally, mismanagement of information systems to insecurities can be caused by financial, technical, and technological deficiency.

2.3 Theoretical Perspective

The study used the Diffusion of Innovation Theory (DIT) and Risk Management Theory (RMT). These theories were selected because they are related to the study.

2.3.1 Diffusion of Innovation Theory

Rogers (2003) prescribes diffusion of innovation as a dynamic process by which an idea or product is communicated or spread over time through people as part of social system, adoption of new idea and new performance. Adoption means doing something differently unlike the way it has used to be done previously. The diffusion of innovation theory holds adoption as part of the spread of technology and therefore, for an institution to ensure information security system it needs to be aware on the security measures to extend the level of its information system security for instance purchasing and installing new software to strengthen authenticity, acquiring new knowledge through trainings on information security issues for new performance of the people in an organization for effectiveness on all issues relating to information security concerns. The use of new technology or approach in an organizational information management reduces the risks of information security and lead to achieving an organizational anticipated outcome as Rogers (2003) stipulates that "a technology is a design for instrument action that reduces the uncertainty in the cause- effect relationships involved in achieving a desired outcome". The theory also commends that awareness of the need for an innovation is one of the stages that makes adoption possible but also it further stipulates the use of technology to design and implement new ideas. From this ground, the adoption of information security measures in an organization starts with the level of awareness on the measures among people in an organization as part of the organization system but also the availability of experts of information technology to design and implement information security measures. The strength of the theory is the clear and acceptable link between adoption and awareness since adaptability is influenced by awareness. Although, the theory has described the advantage of awareness towards adoption but also the theory does not consider risk

management throughout the adoption process. This is why only one variable was taken from this theory that is 'awareness'.

2.3.2 Risk Management Theory

The theory advocates that an organization should view uncertainties in variability surroundings by which the range of consequences that can be caused by the occurrence of a risk must be evaluated. The analysis should be built based on both individual and the entire organization to be knowledgeable on various possible threats to their assets as the matter of fact that uncertainty is a result of lack of knowledge on a specific situation (Spikin, 2013). The theory further promotes the role of an organization to make analysis and evaluation on its information assets against various threats or vulnerabilities to plan for implementation of information security requirements as well as its risks control measures. The main purpose is to ensure availability, reliability, and validity of the information in an organization. About information security, risk management refers to a process of reducing threats to institutional operations, assets, individuals, other institutions as well as the nation which may be resulted from the operation of information system. The managing process includes assessing the risks by analyzing all possible threats within the context of an organization (Nieles and Dempsey, 2017). The FFIEC (2006) defined Information Security Risk Assessment as a process of detecting and evaluating every kind of threats, weaknesses, attacks in terms of chances of their occurrence and outcomes against information systems. The FFIEC (2006) further states that every organization must optimally determine exactly all kinds of threats or vulnerabilities to be addressed in accordance with a specific organization's context through a process called risk assessment and the resulting details must be used to design and improve strategies or technique to mitigate those threats. The FFIEC (2016) states that, "Management should implement controls that align security with the nature of the institution's operations and strategic direction. Based on the institution's risk assessment, the controls should include, but not be limited to, path management, asset and configuration management, vulnerability scanning and penetration testing, end-point security, resilience controls, logging and monitoring, and secure software development (including third-party software development)" p.16. From the ground of Risk Management Theory, the adoption of effective security measures is direct proportional to the process of risks assessment which helps an institution to be aware on several threats so that they can select and implement appropriate measures for security alleviation. The same applied in the context of information security; an institution should firstly be aware on various possible threats to their information assets, planning for the risk control measures and implement the measures. Therefore, the level of information security risk assessment of an organization determines the level of effectiveness of security measure to protect their information against frauds, denial of services attacks and other damages. The strength of the theory is the description of the relationship between effective security and threats analysis towards selection of appropriate measures. The weakness of the theory is the exclusion of institutional capacity of implementing security measures. Thus, this study has focused on one variable from this theory which is 'implementation of effective measures or effectiveness of information security measures.

2.4 Conceptual Framework

The variables integrated in this conceptual framework were taken from the two theories and reviewed literatures. Where by awareness was taken from the Diffusion of Innovation Theory whereas effectiveness was taken from the Risk Management Theory and factors affecting implementation of effective information security measures was from the literature.

Awareness of information security measures is independent variable while effectiveness of information security measure is dependent variable and factors affecting the effectiveness as intervening variable. This can be illustrated by the conceptual framework below (see Figure 2.1):

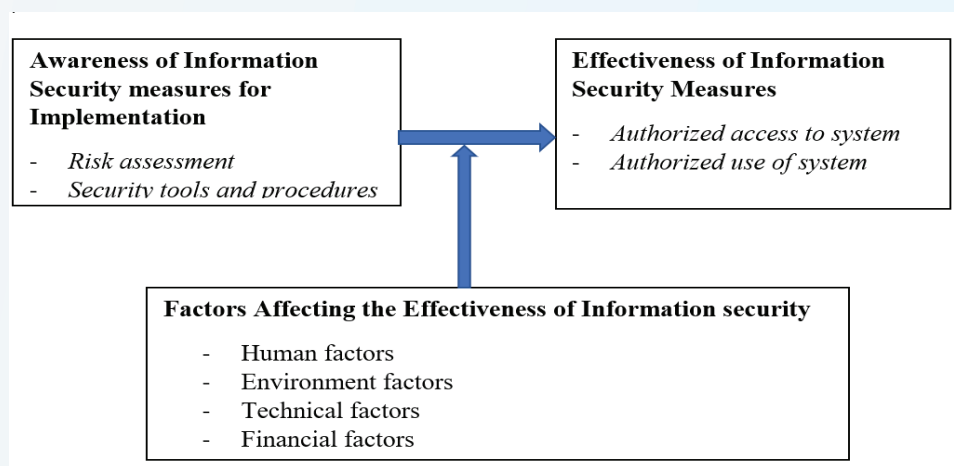


Figure 2.30: Conceptual Framework on the Effectiveness of Information Security Measures

Source: Researcher own construction (2024)

From the conceptual framework above, awareness is independent variable determining information security measures' effectiveness. If people and an entire organization are aware of information security measures, then it is possible to implement effective information security measures. The effectiveness of information security measures depends on the awareness of an organization to implement information security measures or standards as an organization does risk assessment and planning to determine appropriate measures to be implemented for possible threat mitigation. Furthermore, factors affecting the effectiveness are intervening variables between the independent and dependent variables designated into four categories, which are human, environmental, technical, and financial factors. These factors influence the effectiveness of information security measures in the sense that organization awareness on the standards can be affected by the human element in terms of habits and belief, environmental factor in terms of irrelevant settings for learning and practicing information security measures in an organization, technical aspect in terms of procedurals and experts in technological support as well as financial support in terms of a fund to facilitate awareness building programs and latest measures installation. Generally, the effectiveness of information security measures can be determined by the independent variable explained above under the influence of intervening variables positively or negatively.

Material and Methods

Research Design

This study adopted a descriptive research design to investigate factors affecting the effectiveness of effective information security measures at the College of Business Education (CBE). The design was judged suitable because it is relevant to the research objectives and questions, as the aims primarily were to explore and understand the effectiveness of information security measures at CBE.

3.1.1 Research Approaches

In this study a mixed methods (quantitative and qualitative) approach was judged suitable for the research. The quantitative approach was judged ideal because it is relevant to the research design of this study, and it is used to measure variables, describing frequencies and correlations. Additionally, under this approach, researchers are not the inner part of the research rather than being the outsiders (Kumar, 2005). Thus, this approach minimized the researcher bias during data analysis and interpretation as the study findings were obtained from the natural understanding of the respondents on the research questions. Moreover, it also enables the researcher to gather data quickly over a large population. The qualitative approach allowed the researcher to explore the genuineness of the problem to complement the quantitative data collected. The rationale for using mixed method research design was to avoid the biases of each single method and to facilitate triangulation as it allowed the researcher to use more than one method of data collection to ensure cross-justification of research findings.

3.2 Area of the Study.

This study was conducted at the College of Business Education Dar es Salaam Campus. The College of Business Education was established in 1965 by the Act of Parliament and officially opened in January of the same year by the first president of the United Republic of Tanzania, the late J. K. Nyerere. The college is located at Bibi Titi Mohammed Street in Dar es Salaam. The study area was selected due to three main reasons. Firstly, it is among the few oldest higher learning institutions in Tanzania, established by the government in 1965. It is experienced various information technological revolutions for many years, as it is agreed in the CBE (2018) ICT policy. Secondly, the college has recently changed some of its information management systems such, as the student registration system and the procurement management system, to improve information security management. Therefore, this study expected more knowledge through the college experience on implementing information security control measures. Lastly, the college has never explicitly researched in terms of the implementation of information security measures compared to other oldest higher learning institutions in Tanzania, like the University of Dar es Salaam.

3.3 Study Population and Sampling Frame

In this study, population involved the College of Business Education staff from Dar es Salaam campus. The sampling frame involved the total number of 205 staff from the complete list of all CBE staff that was obtained from the Director of Human Resources Management (DHRM). The population involved general staff including systems administrators to capture the variety of activities executed in different professions in relation to information security management practices.

3.4 Sample Size, Sampling Techniques/ Procedures

Sampling size and sampling procedures reflected research approaches and types of data that were collected i.e. quantitative and qualitative data.

3.4.1 Sample Size

Then a statistical formula was used to determine minimum sample size that guided the selection of individuals from the 205 general staff as following:

$$n = \frac{N}{1+N(e)^2} \quad \text{Where:} \quad n = \text{Sample size to be studied}$$

N = Population Size and e = margin of error

$$\text{Thus, for the case of this study; } n = \frac{205}{1+205(0.05)^2}$$

$$n = 135.5 \approx 136$$

From the above formula, the required sample for this study was not supposed to be less than 136 for representativeness.

3.4.2 Sampling Techniques and Procedures

The study employed both probability and non-probability sampling techniques. Simple random and purposive sampling techniques were used to select the sample size. This study employed simple random sampling due to several reasons; total population size was known (limited population) that could be easily sampled as the list of the organization employees was available and lack of biasness. The study aimed at assessing the level of effectiveness of information security through the general members of the organization as the unit of analysis without biasness. Therefore, the study used simple random sampling procedures to select respondents from employees working at CBE main campus where by sampling frame was organized to accomplish this. A complete list of the staff members was generated into pieces of paper shaken in a container and randomly picked 136 representatives. Purposive sampling technique was used to select key informants for interviews. Key informants were drawn from ICT department whereby six (6) information system administrators were selected to substantiate data. The researcher purposively selected the system administrators since they experience day to day

information systems operations as well as according to the roles they play as key decision makers, planners and implementers of the information security measures. So, they are much comprehensive in what goes on in the organization and the factors affecting the implementation of effective information security management practices. The essence of purposive sampling technique is that it is relevant within qualitative research designs. However, purposive sampling can provide the researcher with a comprehensive understanding to generalize from the sample of the study (Etikan, Musa and Alkassim, 2016).

3.5 Data Collection Methods

This study used both primary and secondary sources of data. A combination of methods was applied to gather both qualitative and quantitative data for this study. Secondary data refer to the information which have already gathered, analyzed, and published by other people (Kothari and Garg, 2014). In this study secondary data was collected through documentary review of researchers' publications, reports and publications of different organizations associated with information security management, publications of foreign governments and international bodies as well as the United Republic of Tanzania publications connected with information security measures. Primary data are information collected afresh based on research variables to meet the purpose of the study (Kothari, 2004). In this study, primary data was collected using survey and interview methods.

3.5.1 Survey Method

This study applied survey method for primary data collection since this method lends itself to the collection of quantitative data. The advantages of questionnaire surveys are low cost and wide geographical spread, free from the bias of interviewer, adequate time for a respondent to give correct opinions as well as its suitability for larger number of people (Kothari, 2004). Although, one of the disadvantages of this method was that, there might be differences in understanding and interpreting some questions but the researcher's contacts were written in the questionnaire guide for clarification but also the research was providing preliminary explanations on the structure of the questionnaire to the respondents before answering the questions. In this study structured questionnaire designed with open and closed-ended questions was used as main instrument to collect quantitative data. The questionnaires were distributed to 136 general staff. The questionnaires were self-administered where by a standardized set of questions on papers were given to respondents to fill at their own space and time. All questionnaires were completed and returned (see Table 2). This was made possible due to the reason that respondents were available at their duty station in every working day within the period of data collection of this study. Furthermore, the researcher contacted the respondents both physically and electronically (via phone) to easier the accomplishment of the questionnaires.

3.5.2 Interview Method and Guide

Six (6) respondents (system administrators) were sampled for key informant interviews, whereby all of them participated. Interviews were used to explore attitudes, readiness, and opinions of information systems administrators regarding implementation of information security measures in the organization. In-depth information about individual feelings and willingness to implement information security measures sometimes cannot be captured by questionnaires. Thus, a semi-structured interview guide was the preferred instrument because of its flexibility and permitted the researcher to explain issues to get more details whenever needed. The interview sessions were conducted through face-to-face interaction with individual system administrator staff to capture their opinions on the implementation of information security measures in the organization. A tape recorder was used based on the participants' prior consent to record the responses where by NVivo Software used for transcription.

3.6 Data Analysis and Presentation

In this research, both quantitative and qualitative data were analyzed and presented. Quantitative data were analyzed by SPSS 26. Analysis of data after tabulation were scrutinized in terms of percentage, frequencies, and coefficients. The study results were presented, arranged, and summarized according to the specific objectives. The study used Pearson's correlation analysis to assess statistically corresponding relationship between independent variables and dependent variable. The strength of the correlation among variables was determined by using Pearson's Correlation Coefficient or Pearson's r where by a positive relationship was specified by a value of 1.0, negative correlation is specified by a value of -1.0 while zero correlation was specified by a value of 0.0 (Formplus, 2022). In other words, the correlation coefficient values are found between 1.0 to -1.0. Moreover, the researcher employed Chi-Square Test to find whether there is an association between intervening variable and independent variables. Correlation was used to support the relationship between variables hypothesized in the conceptual framework of this study without manipulation or interference by the research. Furthermore, the Chi-Square Test was used to strengthen clarification of associations within variables wherever necessary. Qualitative data transcribed by using "f4" software, and then categorized into subjects associated with the key questions of the study and analyzed by using NVivo Software. The study employed the combined approach to report both quantitative and qualitative findings in the sense that both quantitative and qualitative results were reported simultaneously. Quantitative results were reported first and instantly followed by qualitative results to provide comprehensive understanding of quantitative findings.

4.0 Findings and Discussion

Respondents Demographic Characteristics

This part describes the respondents' demographic information. Respondents' demographic information was meant to determine the nature and characteristics of the study population. The

demographic data included were sex, age, level of education, job role, and years of working experience with information systems.

4.1.1 Distribution of respondents by gender

Concerning gender balance, the researcher wanted to define the comparison of male and female respondents involved in the study. The results indicated that more than half, 77 (56.6%) respondents were male, as shown in Figure 4.1.

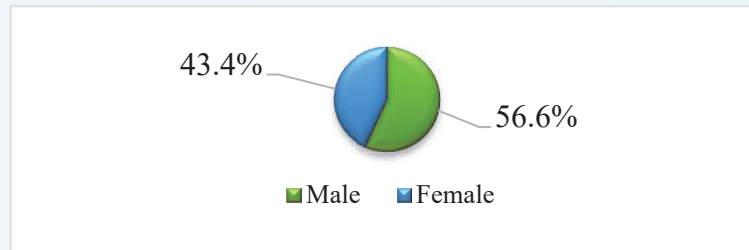


Figure 4.1: Distribution of respondents by gender

Source: Field Data (2022)

The study findings in Figure 4.2 reflect the fact that there were more male employees in higher-learning institutions than female. The difference between males and females was attributed to a few numbers of female staff employed in the college. The results furthermore show that the study was gender sensitive as all gender reasonably participated in giving information about the implementation of information security.

4.1.2 Respondents Level of Education

The respondents were asked to indicate their level of education. This was important as an indicator of the respondents' range of understanding to offer reliable information in relation to information security management practices. The analysis results show that most of the respondents have bachelor degree or above. The results are shown in Figure 4.2.

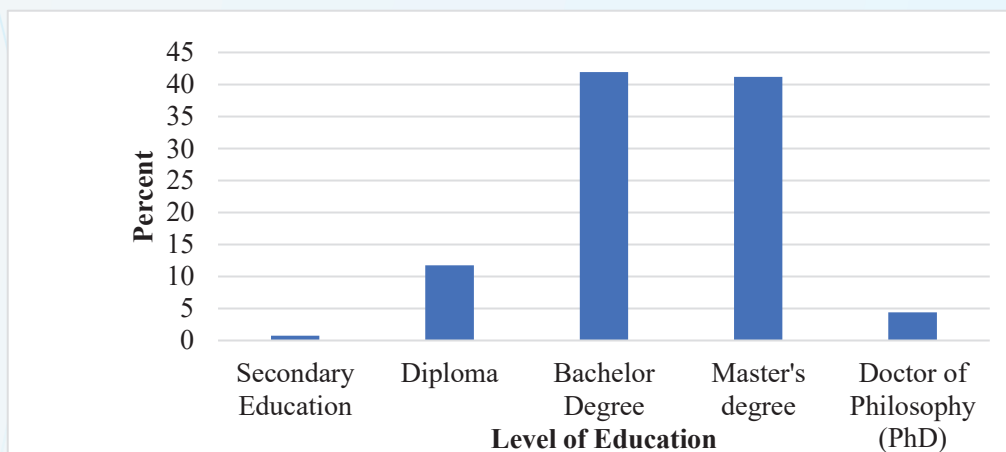


Figure 2: Respondents' Level of Education

Source: Field Data (2022)

The results in Figure 4.2 show that larger number of respondents had attained higher education. This can be associated with the nature of the organization as it offers higher education programs and services which must be facilitated by higher educated facilitators. Respondents' level of education indicated that respondents had reasonable education qualification and wide range of understanding to provide reliable information about the implementation of information security measures at the College of Business Education in Tanzania

4.1.3 Distribution of Respondents by Working Department and Unit

The respondents were asked to specify their working department and or unit. This was considered to be important as an indicator of the respondents' responsibilities in relation to information security management practices. The study findings indicated that the largest group of respondents was Finance (including internal auditors and accountants) which accounts for 24 (17.6%) followed by ICT (including IT technicians and teaching staff) with 21 (15.4%) and Administration (including members of management team) with 16 (11.8%). The results are shown in Table 4.2.

Table 4.2: Distribution of Respondents by Working Department and Unit

Unit	Frequency	%	Unit	Frequency	%
Registry	8	5.9	Library	9	6.6
Accountancy	9	6.6	Marketing	11	8.1
Administration	16	11.8	Planning	7	5.1
Admission	7	5.1	Procurement	9	6.6
Business administration	6	4.4	Records	2	1.5
Finance	24	17.6	Student welfare	3	2.2
HR	4	2.9	Total	136	100.0
ICT	21	15.4			

Source: Field Data (2022)

The results show that the respondents represented at most every department/ unit of the organization to cover a wide range of experience of information security management practices. The largest proportions of the respondents (finance, ICT and Administration) were expected by the study to be the foremost groups encountered with information systems security

risks because financial software packages are most used for fiscal management followed by application of ICTs in configuration of organization systems as well as administrative systems. Pallangyo (2020) also realized that most of commercial transactions are conducted electronically especially online where most hackers' threats roaming frequently. Since information systems intruders are mostly looking for financial theft and administrative intervention, the study results indicated that these groups (Finance, ICT and Administration) were fairly represented in the study.

Research Question 1: What is the level of effectiveness of information security measures at the College of Business Education (CBE)?

The researcher was interested to know if information security measures which are implemented in the organization are effective against information security threats.

4.2 Effectiveness of Information Security Measures

The respondents were asked to give their opinions on the organization' level of effectiveness of information security measures affiliated with its related aspects. In order to reach a practical account of the findings, strongly agree and agree were combined to form "Agree" while disagree and strongly disagree were combined to form "Disagree". The results indicate that, 61 (44.9%) respondents were neutral to agree or disagree on the effectiveness of information security measures in the organization. The results show that 63 (46.3%) respondents were also neutral to specify whether the information security tools used in the organization are updated or not. The results indicate that 62 (45.6%) respondents agreed that there is information security policy at CBE. The results show that 59 (43.4%) respondents disagreed that there is information security risks assessment report in their office for reference during implementation. The results indicate that 57 (41.9%) respondents agreed that at CBE, employees behave according to a code of conduct of human resource to protect information confidentiality. The results show that 53 (39%) respondents disagreed with the statement that physical environment of CBE is protective enough against intruders. The results indicate that 66 (48.5%) respondents were neutral to agree or disagree if they are aware of information security measures. The results are shown in Table 4.8.

Table 4.8: Effectiveness of Information Security Measures

Variables	Agree		Neutral		Disagree	
	F	%	F	%	F	%
Effectiveness of the measures.	36	26.5	61	44.9	39	28.7

Availability of risk assessment report.	12	16.1	55	40.4	59	43.4
Individual awareness of the measures	45	33	66	48.5	25	18.4

Source: Data Field (2022)

The results shown in Table 4.8 suggest that the level of effectiveness of information security measures in the organization is moderate because most of the respondents were neutral to agree or disagree with the statement that information security measures used by their organization are effective to prevent information fraud. Hence, the study findings answer the research question on the level of effectiveness of information security measures.

The study findings indicated that while the level of effectiveness of information security measures is moderate, most of the respondents disagreed with the statement that there is information security risk assessment report in their office. This implies that either the organization does not communicate the risk assessment report to its members or there is no regular information security risk assessment in the organization. The researcher was interested to know if there is any significant association between availability of information security risk assessment report in the respondents' offices and effectiveness of information security measures. The Chi-Square test employed to determine association between availability of information security risk assessment report in the respondents' offices and effectiveness of the security measures. The results are shown in Table 4.11.

Table 4.11: Chi-Square Test of Association between Availability of Information Security Risk Assessment Report and Effectiveness of Information Security Measures

Category	Availability of Security Risk Assessment Report		
	Value	Df	Asymp. Sig. (2 sided)
Pearson Chi-Square	107.938 ^a	16	0.000
Likelihood Ratio	86.316	16	0.000
Linear-by-Linear Association	46.724	1	0.000
N of Valid Cases	136		

Source: Data Field (2022)

Table 4.11 shows that availability of information security risk assessment reports is associated with effectiveness of information security measures. The *P*-value (0.000) was less than 0.05; meaning that there is significant association between availability of information security risk

assessment reports and effectiveness of information security measures. This result is reflecting the study of Hagen (2013) that effectiveness of information security measures is associated with risk assessment. In other words, the effective implementation of information security measures is the result of a sound risk analysis in order to determine appropriate measures for a particular risk. Anderson (2017) also argued that frequent monitoring and risk assessment is what brings effective measures of information security. Thus, a detailed information security risk assessment report is the best reference for the effective implementation of information security measures.

The respondents were asked if they are aware of information security measures implemented by the organization. The researcher was interested to know if there is any significant individual awareness of information security measures and effectiveness of information security measures. The Chi-Square test employed to determine association between individual awareness of information security measures and effectiveness of the security measures. The results are shown in Table 4.14.

Table 4.14: Chi-Square Test of Association between Individual Awareness of Information Security Measures and Effectiveness of Information Security Measures

Category	Individual Awareness of Security Measures		
	Value	Df	Asymp. Sig.(2 sided)
Pearson Chi-Square	113.596 ^a	16	0.000
Likelihood Ratio	89.479	16	0.000
Linear-by-Linear Association	59.013	1	0.000
N of Valid Cases	136		

Source: Data Field (2022)

Table 4.14 shows that individual awareness of information security measures is associated with effectiveness of information security measures. The *P*-value (0.000) was less than 0.05; meaning that there is significant association between individual awareness of information security measures and effectiveness of information security measures. Since the level of effectiveness of information security measures is moderate, the results indicate that there is a significant association between individual awareness and effectiveness of information security measures. This can be partly attributed to the fact that awareness of information security measures is a foundation of implementing effective measures of information security. Khan *et al* (2011) noted the importance of awareness in enhancing the effectiveness of information security measures based on organizations' information security management plan. Thus, lack of awareness of information security measures tends to limit its

implementation and involvement of employees in the information security management programs.

The assumption in the conceptual framework of this study was that the level of effectiveness of information security measures is influenced by the level of awareness of information security measures. The researcher was interested to know if there is any significant relationships between effectiveness of information security measures and awareness of information security measures. Correlation coefficient was employed to assess a linear relationship between effectiveness of information security measures and awareness of information security measures. The Pearson correlation coefficient used to test the nature of relationship of the variables (positive, negative or zero relationship) and p-value (2-tailed test) was used to determine if the variables have a statistically significant relationship. The results indicated that the Pearson Correlation coefficient between awareness of information security measures and effectiveness of information security measures is 0.206. Additionally, the p-value associated with the Pearson correlation coefficient for awareness of information security measures and effectiveness of information security measures is 0.016. Results of the analysis are reported in Table 4.15

Table 4.15: Correlation between Effectiveness of Information Security Measures and Awareness of Information Security Measures

Awareness	Category	Awareness	Effectiveness
	Pearson Correlation	1	.206*
	Sig. (2-tailed)		.016
	N	136	136
Effectiveness	Pearson Correlation	.206*	1
	Sig. (2-tailed)	.016	
	N	136	136

Source: Field Data (2022)

The results in Table 4.15 indicate that the Pearson Correlation coefficient (0.206) is positive; it means that these two variables have a positive relationship. This implies that the increase of awareness of information security measures is direct proportional with the increase of effectiveness of information security measures. Since the p-value (0.016) is less than 0.05, the two variables have a statistically significant relationship. Thus, the results comparatively support the relationship hypothesized in the conceptual framework of this study. This can be partly supporting the fact that awareness of information security measures was attributed to the

effective measures of information security. When the user of the information system (s) is aware of the measures to control information security, it becomes easier to ensure the effective use of those measures, thus leading to the effectiveness of information security measures. Ahlan, Lubis and Lubis, (2015) noted awareness as the road of the user to fully adhere to the information security rules and regulation. Khan *et al* (2011) also recognized awareness of information security measures as the main attribute of the effectiveness of information security measures.

Generally, the results reveal that effectiveness of information security measures is unsettled as it is facing a lot of challenges which marks it to remain moderate. These results tally with what have been noted during interview sessions conducted by the researcher to the key informants (i.e., systems administrators). For instance, one of the respondents said:

Actually, the measures are somehow effective and we are continuing to our best level to improve according to the required standards. The college has invested much efforts to ensure effective implementation of the measures though we are still facing some challenges in terms of the end users of these measures I mean general staff. For example, you may find that staff are not able to install anti-virus software in their office computer (s) because they lack ICT security knowledge.

Another key informant lamented:

Our organization has been adopting various technological tools for information security tools though there is underutilization of these tools bad enough we have ICT policy but employees are not complying with it so tis make difficulties to have effective security.

These narratives suggest that the level of effectiveness of information security measures is moderate due to lack of consistency and readiness of employees to comply with formalized procedures and tools to implement information security measures. Thus, the results indicates that the effectiveness of the measures is disturbed by a lot of hesitation in implementing policies and other security guidelines.

4.3 Factors Affecting the Implementation of Information Security Measures

The respondents were asked on the factors affecting the implementation of effective information security measures in the organization as hypothesized in the conceptual framework of this study. The assumption was that there are factors affecting awareness and effectiveness of information security measures. The researcher was interested to know if there is significant association between the factors and awareness and implementation of information security measures. The Chi-Square Test was used to analyze the association between each factor and awareness and implementation of information security.

4.3.1 Human Resources Factor

The respondents were asked on human resources factor in terms of employees' preparedness or readiness to be aware of information security measures. The researcher was interested to find out if there is any significant association between employees' preparedness and awareness and effectiveness of information security measures. The Chi-Square Test was used to analyze the association. The results are shown in Table 4.17.

Table 4.17: Chi-Square Test of Association between Employees Preparedness and Awareness and effectiveness of Information Security Measures

Category	Awareness			Category	Effectiveness		
	Value	Df	Asymp. Sig.		Value	Df	Asymp. Sig.
Pearson Chi-Square	26.564 ^a	16	.047	Pearson Chi-Square	57.517 ^a	16	0.000
Likelihood Ratio	26.394	16	.049	Likelihood Ratio	51.603	16	0.000
Linear-by-Linear Association	1.830	1	.176	Linear-by-Linear Association	27.186	1	0.000
N of Valid Cases	136			N of Valid Cases	136		

Source: Field Data (2022)

The research findings in Table 4.17 indicate that employees' preparedness is associated with both awareness and effectiveness of information security measures. The *P* value (0.047) for awareness of information security measures and the *P* value (0.000) for effectiveness of security measures were less than 0.05; meaning that there is significant association between employees' readiness to adopt information security measures and the level of awareness and effectiveness of information security measures whether in a positive or negative effect(s). That is also to say if employees are not ready to be aware it will be difficult to effectively implement the measures. Kumah (2022) also argued that if employees are interested and steered to engage in more safe information security behavior, an organization will be able to implement the security measures efficiently. Likewise, the results moderately support the relationship hypothesized in the conceptual framework of this study that awareness and effectiveness of information security measures are influenced by human factor.

The respondents were asked to give their opinions on the level of dedication of the college in facilitating information security awareness programs as well as their level of awareness on

information security measures. Responses on the organization commitment to conduct information security awareness programs and the level of awareness of information security measures were cross-tabulated accompanied by Chi-Square Test to confirm the association between both. The study findings indicated that the majority of respondents 58 (42.6%) were not able to specify whether CBE is dedicated to conduct information security awareness programs or not. The same applied to the level of awareness of information security measures as 61 (44.9%) respondents were neutral to specify whether they are familiar with the measures or not. The results are shown in Table 4.18.

Table 4.18: Cross-tabulation between CBE Commitment to Conduct Security Awareness Programs and Awareness of Information Security Measures

CBE dedicated to conduct awareness programs	Awareness of Information Security Measures					Total
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
Strongly agree	2	4	2	3	0	11
Agree	2	26	11	4	1	44
Neutral	4	7	42	4	1	58
Disagree	0	1	3	7	2	13
Strongly disagree	0	0	3	1	6	10
Total	8	38	61	19	10	136

Source: Field Data (2022)

The study findings indicate neutral position of most of the respondents on the organization commitment to conduct security awareness programs. This imply that the respondents were either not satisfied with the efforts put by the organization on building awareness of information security or they were not conscious of the information security awareness programs that have been conducted by the organization due to less involvement. Hanus and Wu (2016) also found that effective awareness is an outcome of users' involvement in awareness building programs. In this incidents, one respondent said:

When it comes to training and development with this issue of ICT training programs and security and whatever, priority is not much given. You may find the college is facilitating many trainings concerning other matters apart from information security. But when it comes to the issue of conducting information security training, they say the budget is not enough.

This indicates that the issue of conducting information security awareness programs at CBE is not given much priority. Other respondents said:

I have never attended any information security awareness programs but the college has been conducting these trainings frequently for ICT coordinators though there is no periodic security training for general staff members. I think the college is currently not financially good to conduct frequent trainings to all staff.

This implies that the trainings had been conducted but an individual did not attend though still the general staff have been not given much priority in terms of attending information security awareness programs due to financial constraints. This indicates less involvement of staff in the programs which may also affects the level of awareness

Furthermore, the study findings suggested that the level of awareness of information security measures in the organization is moderate since most of the respondents through questionnaire were neutral to agree or disagree whether they are familiar with information security measures or not. In this incidents, one respondent said:

The level of awareness I can say moderate, yes moderate; not high not low because staff members have ABC about this information security systems. So, they are not much competent in understanding information security measures and their applicability. Of course, we need to find a way out to fix this for example through conducting awareness trainings for all employees.

The issue here is that HLIs must find way to build awareness on information security management among staff members and maintain high level of information security management practices.

Given the challenges above, the researcher was also interested to find out if there is any significant relationship between conducting awareness program and level of awareness. The study analysis results on the relationship between conducting information security awareness program and awareness of information security measures are summarized in Table 4.19.

Table 4.19: Chi-Square Test: Association between Commitment of Conducting Information Security Awareness Programs and Awareness of Information Security Measures

Category	Value	Df	Asymptotic Sig.
Pearson Chi-Square	110.025 ^a	16	.000
Likelihood Ratio	84.886	16	.000
Linear-by-Linear Association	35.103	1	.000
N of Valid Cases	136		

Source: Field Data (2022)

The results in Table 4.19 show that commitment of conducting information security awareness programs is associated with awareness of information security measures. The p value (0.000) was less than 0.05; meaning that there is significant relationship between conducting information security awareness programs and awareness of information security measures. This can be also presumed that if the members of the organization get trained then they are highly expected to be aware of information security measures. Hammarstrand and Fu (2015) also found untrained respondents being not aware of the security measures compared to the trained respondents.

4.3.2 Environmental Factors

The respondents were asked on the environmental factor in terms of physical environment security in relation to implementation of information security measures. The Chi-Square Test was used to analyze if there is significant association between physical environment security and awareness and effectiveness of information security measures. The results are shown in Table 4.20.

Table 4.20: Chi-Square Test of Association between Physical Environment Security and Awareness and effectiveness of Information Security Measures

Category	Awareness			Category	Effectiveness		
	Value	Df	Asymp. Sig.		Value	Df	Asymp. Sig.
Pearson Chi-Square	51.896 ^a	16	.000	Pearson Chi-Square	53.443 ^a	16	0.000
Likelihood Ratio	42.319	16	.000	Likelihood Ratio	54.253	16	0.000
Linear-by-Linear Association	3.607	1	.058	Linear-by-Linear Association	19.116	1	0.000
N of Valid Cases	136			N of Valid Cases	136		

Source: Field Data (2022)

The results in Table 4.20 show that physical environment security is associated with both awareness and effectiveness of information security measures. The P value (0.000) for awareness of information security measures and the P value (0.000) for effectiveness of security measures were less than 0.05; meaning that there is significant association between

physical environment security and the level of awareness and effectiveness of information security measures whether in a positive or negative outcome(s). Similarly, the results relatively support the relationship hypothesized in the conceptual framework of this study that environmental factors are associated with awareness and effectiveness of information security measures. Semlambo, Mkude, and Lubua, (2021) desk review study on the factors affecting information security, found that fourteen (14) literatures out of forty argued that work environment is among the key factors influencing the implementation of effective information security measures in an organization.

4.3.3 Technical Factors

The respondents were asked on the technical factor in terms of technical personnel, procedural actions (policies) and technologies (ICTs) towards implementation of information security measures in the organization. The researcher was interested to find out if there is any significant association between technical factors and awareness and effectiveness of information security measures. The Chi-Square Test was used to analyze the association. The analysis findings indicated that there is significant association between availability of ICTs personnel and awareness and effectiveness of information measures. The results are shown in Table 4.21.

Table 4.21: Chi-Square Test of Association between Availability of ICTs Personnel and Awareness and effectiveness of Information Security Measures

Category	Awareness			Category	Effectiveness		
	Value	Df	Asymp. Sig.		Value	Df	Asymp. Sig.
Pearson Chi-Square	37.979 ^a	16	.002	Pearson Chi-Square	55.369 ^a	16	.000
Likelihood Ratio	40.089	16	.001	Likelihood Ratio	57.626	16	.000
Linear-by-Linear Association	8.252	1	.004	Linear-by-Linear Association	8.717	1	.003
N of Valid Cases	136			N of Valid Cases	136		

Source: Field Data (2022)

The results in Table 4.21 show that availability of ICTs experts is associated with both awareness and Effectiveness of information security measures. The *P* value (0.002) for awareness of information security measures and the *P* value (.000) for effectiveness of security

measures were less than 0.05; meaning that there is significant association between availability of ICTs experts and the level of awareness and effectiveness of security measures whether in a positive or negative effect(s). Likewise, the results partly support the relationship hypothesized in the conceptual framework of this study that technical factors are associated with awareness and effectiveness of information security measures in terms of availability of experts for technological support to information system users. ICTs experts play a big role in helping other users with limited knowledge of information security management in an organization in terms of fixing the complex information security issues and building awareness to their co-workers on information security measures.

Furthermore, the analysis findings indicated that there is significant association between availability of information security policies and awareness and effectiveness of information security measures. The results are shown in Table 4.22.

Table 4.22: Chi-Square Test of Association between Information Security Policies and Awareness and Effectiveness of Information Security Measures

Category	Awareness			Category	Effectiveness		
	Value	Df	Asymp. Sig.		Value	Df	Asymp. Sig.
Pearson Chi-Square	51.954 ^a	16	.000	Pearson Chi-Square	62.639 ^a	16	0.000
Likelihood Ratio	46.065	16	.000	Likelihood Ratio	58.572	16	0.000
Linear-by-Linear Association	7.942	1	.005	Linear-by-Linear Association	12.786	1	0.000
N of Valid Cases	136			N of Valid Cases	136		

Source: Field Data (2022)

The results in Table 4.22 show that information security policies are associated with both awareness and effectiveness of information security measures. The *P* value (0.000) for awareness and the *P* value (0.000) for effectiveness of security measures were less than 0.05; meaning that there is significant association between information security policies and the level of awareness and effectiveness of information security measures whether in a positive or negative effect(s). Likewise, the results partly support the relationship hypothesized in the conceptual framework of this study that technical factors are associated with awareness and effectiveness of information security measures in terms of availability of information security policy to regulate information security management practices. Therefore, availability of clear

and comprehended policies in addressing information security tools determines the level of awareness and effectiveness of information security measures as it was also found by Manneback and Padyab (2021) that rules and policies are among the factors affecting the effectiveness of security measures. Thus, information security policies determine the capacity of an organization to implement effective information security measures.

4.3.4 Financial Factors

The respondents were asked on the financial factor in terms of budget towards awareness and effectiveness of information security measures in the organization. The researcher was interested to find out if there is any significant association between financial factors and awareness and effectiveness of information security measures. The Chi-Square Test was used to analyze the association. The analysis findings indicated that there is significant association between budget and implementation of information measures. The results are shown in Table 4.24.

Table 4.24: Chi-Square Test of Association between Financial Support and Awareness and Effectiveness of Information Security Measures

Category	Awareness			Category	Effectiveness		
	Value	Df	Asymp. Sig.		Value	Df	Asymp. Sig.
Pearson Chi-Square	32.732 ^a	16	.008	Pearson Chi-Square	43.732 ^a	16	0.000
Likelihood Ratio	37.087	16	.002	Likelihood Ratio	47.304	16	0.000
Linear-by-Linear Association	4.588	1	.032	Linear-by-Linear Association	15.498	1	0.000
N of Valid Cases	136			N of Valid Cases	136		

Source: Field Data (2022)

The results in Table 4.24 show budget are associated with both awareness and effectiveness of information security measures. The *P* value (0.008) for awareness and the *P* value (0.000) for effectiveness of security measures were less than 0.05; meaning that there is significant association between financial support and the level of awareness and effectiveness of information security measures whether in a positive or negative effect(s). The results comparatively support the relationship hypothesized in the conceptual framework. Yeo, Rahim, and Miri (n.d) also revealed this association that the level of management support in terms of financial and technical assistance are serious factors which determine the level of information security risk assessment for implementation of effective measures as well as awareness building on information security measures. To gain more insight into factors

affecting information security management practices, the key informants were also asked to talk about challenges they encountered in implementing information security measures in accomplishing organizational objectives. Response to this question revealed that human resource, environmental, technological and financial factors are among the challenges which tends to hold back HLIs progress towards effectiveness of information security measures. For example, one of the respondents said:

We have few numbers of ICT experts and auxiliary police in our organization with the regard that our physical environment is not secured enough against unauthorized people to access sensitive organizational information. For instance, office keys are left to auxiliary police while computers and sensitive files within the office room are not locked. Therefore, if the police have access to office doors, they may also direct access the files and other sensitive information which are found in the room.

Another key informant commented:

One of the major ICT challenges that we are facing is the issue of system integration. Note that we were using SARIS students' management system. We are now using COSIS, data from the SARIS and COSIS to date still get a problem of mismatching. So, we have two different systems which are operating with the same functions. So, running these two systems that do not communicate to each other there is about loop hole sometimes for information leakage.

One more respondent lamented: *In terms of the budget, it is not specified in the college budget. So, you may not find a specific budget for information security exactly but there is a budget for several trainings on various issues concerning the college.*

All these testimonies show that HLIs are facing number of challenges which affect the effectiveness of information security measures. Taking into consideration that the quantitative results in this section revealed that there is positive relationship between these factors and effectiveness of security measures. Hence, the effectiveness of information security measures at the College of Business Education (CBE) is unsettled as the higher the challenges the higher the risks to information security management.

Conclusion and Recommendations

Conclusion

The effectiveness of information security measures is articulated by the required outcomes of the implementation guidelines like policies, reports and other frameworks. Despite this, most of the respondents could neither deny nor agree on the effectiveness of information security measures, while most of them agreed with the statement on the availability of information security policy in the organization. Most respondents disagreed with the statement on the availability of information security risk assessment reports in the organization. Based on these results, the study concludes that the effectiveness of information security measures is average.

Furthermore, the study concludes that although the staff in the organization are aware of the availability of information security policy, they need to become more familiar with the real situation of information security in the organization as they are not aware of the availability of information security risk assessment report. Therefore, this is a great fault in the efforts to implement effective information security measures. The study revealed common factors affecting implementation of information security measures in the organization in a positive or negative way. These factors are human resources, environmental, technical and financial factors. The four common factors may accompany each other to affect the effectiveness process or standing alone against each other. Therefore, recognition of these factors proves one of the assumptions in the conceptual framework of this study that there are factors affecting effectiveness of information security measures in the HLIs in Tanzania. Generally, awareness creation and capacity building should be effective to enable information system users to resist hackers in the changing environment of Information and Communication Technology.

Recommendations

The recommendations are based on the findings of this study on the way forward to improve implementation of information security measures at the College of Business Education (CBE) in Tanzania.

College of Business Education (CBE)

It is recommended that CBE should establish a specific and permanent team for information security risk assessment. The team should include staff members from different departments of the organization in order to make it participatory. Moreover, official and public platforms for members of organization to report information security incidents should be available and accessible such as suggestion box, official email and contact number. The study recommends that there is serious need for higher learning institutions to conduct departmental regular awareness building sessions on implementation of information security measures among employees as well as encouraging them to attend further studies. Hence, challenges facing each specific information security management activity such as technical and financial issues should be dealt with accordingly. It is further recommended that CBE should communicate their information security risk assessment report to the members of the organizations.

Government

It is recommended that government should formulate a national information security policy to guide HLIs and other private and public institutions. This may help to regulate information security management activities performed in the institutions by improving standards and procedures to effective information security measures among HLIs. The study recommends that there is a serious need for the government of the United Republic of Tanzania to establish public programs on information security awareness with a view to improve information security management practices among public and private employees and the general public as customers of the higher learning institutions.

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Examining Factors Affecting Coffee Supply Chain Management in Ethiopia: A Case of Ethiopian Commodity Exchange at Jimma Branch

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Abstract

Coffee is the most traded commodity on the global market. Hence, the purpose of this paper is to examine the factors affecting Coffee Supply Chain Management (CSCM) in Ethiopia. Data for this study were gathered from 178 respondents as sample size and the main sources of data for this survey were primary data which were collected by using survey questionnaires. This data was analyzed using descriptive and inferential statistical techniques. The results of this study show that all independent variables have a significant effect on the dependent variables. According to the regression model results, R values (94.1%) clearly show a significant relationship between the dependent variable and the predictor variables, and an adjusted R-squared reveals that all predictor variables (such as economic factors, institutional factors, infrastructure factors and marketing factors) can predict the dependent variable (coffee supply chain management) by 88.3 %. However, economic-related factors have great effects (56.48%) on CSCM in Ethiopian Commodity Exchange (ECX) at Jimma branch followed by institutional related factors which have (30.67%) effects on CSCM while infrastructural related factors and marketing related factors are the least important (10.47% and 2.38%) respectively. The study concludes that coffee supply chain management is unproductive because of corruption, lack of technology, lack of financing, insufficient training, and lack of managerial competency. Hence the study suggests that all stakeholders focus more on developing a policy for blending coffee supply chain which includes production, storage, and marketing, and preventing constraints such as corruption, poor management systems, and insufficient training to improve coffee supply chain management and marketing systems, particularly in Ethiopian Commodity Exchange at Jimma Branch.

Keywords: *Coffee, Coffee Supply Chain Management, Coffee Production, Marketing.*

1.0 Introduction

Coffee is an agricultural raw material widely traded on a global and regional scale (Bali et al., 2020, Wakjira, 2021). In today's global market, various commodities are available in the international market, with coffee being one of the most important commodities (Bali et al., 2020). Coffee is a vital production for development activities that provides a living for millions of people worldwide by generating financial returns in subsistence economies (Gebermedin & Tolera, 2015). Coffee production and harvesting in developing countries are labor-intensive, and it is a valuable source of rural employment for both men and women (Mutandwa et al., 2009). It is unique is that, coffee is grown in practically every non-arid tropical country. Over 50 countries produce considerable amounts of coffee, and the sources of their income are

largely based on coffee exports which are critical to the country's balance of payments (Chauhan et al., 2015; Gebermedin & Tolera, 2015). In the Ethiopian economy, agricultural products particularly coffee accounts for about half of Gross Domestic Product (GDP) (Lemecha, 2019). It is nearly accounts for about 47% of GDP, 80% of export revenues, and employment for 85% of the communities, and all of these made it the country's economic backbone (Nguni, 2016).

Multiple studies in Ethiopia show that coffee is one of the most essential commodities in international and local consumption and trade, which provides a significant source of income for several nations (Temesgen & Tufa, 2017; Aliyi, 2019, Asefa et al., 2016; Wakjira, 2021). This suggests that the expansion and development of the coffee business can have a major impact on national, regional, and household economic growth (Gebre, 2020; Kebede et al., 2021). However, the coffee value chain has not yet fully capitalized on its role as a supplier of most of the world's greatest coffees (Degaga, 2020).

Ethiopian coffee supply chain faces numerous problems due to a lack of market outlets, insufficient market information among participants, and limited investments in market linking activities (Amamo, 2014; Minten et al., 2019). As a result of these and other factors, the farmers' share of the present price has decreased and Ethiopia's government also recognized the issue and allowed coffee unions to sell their members' products directly to international markets, without any middlemen. However, while these cooperatives or unions may be able to shorten the coffee supply chain, they are having trouble in adding value to their members' products in terms of logistics, marketing, and institutional factors (Aliyi, 2019).

Currently, various literature and study have been conducted on CSCM in Ethiopia. For instance the study by Angula, 2010; Kabeta, 2021; Kassaye et al., 2018; Shumeta & D'Haeseb, 2016; Temesgen, 2020. In this regard, coffee supply chain analysis is an intriguing procedure that needs extra attention in this field of research. However, most of these studies did pay attention to determinants/factors affecting the coffee supply chain rather than the extent to which those factors impact CSCM. Therefore, the main objective of this research was to bridge this practical gap by examining the extent to which those factors impact CSCM of Ethiopian Commodity Exchange (ECX) at the Jimma Branch. Specifically, the study was to examine the extent of institutional, infrastructural, market, and economic factors impacts on the Ethiopia's CSCM. This study is significant to inform the Coffee Regulatory Authority in Ethiopia and other stakeholders in coffee industry about the level of impact of each factor and suggesting the appropriate measures.

2.0 Related Literatures

Coffee is one of the five main important commodities in the world markets (Ibrahim & Zailani, 2010). In today's dynamic economic environment, individual companies may begin to compete as distinct entities instead of as active participants in a bigger supply chain that encompasses a network of different businesses and partnerships. As a result, suppliers operate in an ever-changing environment and are vulnerable to a wide range of risks at all levels due to a constantly changing landscape caused by variety of factors (Ibrahim & Zailani, 2010). Many supply chains span large areas and are susceptible to a variety of global risks (Butner, 2010;

Christopher & Holweg, 2011). Customers are becoming increasingly demanding of product customization, pricing, and service level (Christopher & Holweg, 2011; Sayed et al., 2017).

Product variation is also continuing to increase as a result of high clock frequency in so many companies which leads to rapid technological changes and the ongoing launch of new technology to the market. Besides, the external environment is extremely vibrant leading to economic (energy costs, raw material prices, and availability, currency values), socioeconomic (civil disorder, changing customer needs), and natural events (Sayed et al., 2017). In such, businesses must be incredibly agile to stay alive in this complicated world, as well as build a large level of adaptability and mitigating risk skills, as well as a porous structure that allows for rapid response to these problems. According to Christopher & Holweg (2011), structural flexibility is the supply chain's ability to adjust to essential changes in the market. However, adaptability and perseverance come with a cost in the form of an extra resource base such as safety stock and extra space, as well as higher transaction costs (Christopher & Holweg, 2011).

Firms must have the greater profile of the entire supply chain, the essential speed to respond rapidly to changes, and effective coordination with vendors and distributors in terms of balancing the usually needed level of resilience and flexibility and the cost of achieving it (Christopher & Holweg, 2011). It is also critical in assisting supply chains in coping with the issues of an ever-changing environment and a plethora of risks at all stages. Supply chain interactions are being elevated to a new level, with the potential of human-to-thing interaction and independent cooperation between many 'things' while still being retained in an institution or transported between various supply chain organizations (Mulyati & Indrawan, 2021; Phyllis, 2014; Sarker, 2018). These new tools provide a huge opportunity for dealing with confronted more successfully. It enables new levels of logistics, flexibility, and versatility to deal with a variety of supply chain management challenges (Ellis et al., 2015). This will permit for a decrease in time among data collection and judgment, letting supply chains respond to events in real-time, enabling for levels of nimbleness and ability to respond never seen (Ellis et al., 2015).

Ethiopia's economy is mostly reliant on agriculture, which accounts for roughly 40% of GDP and 80% of exports (Sarker, 2018). Coffee in Ethiopia is most important agricultural export product, accounting for 65% of the country's foreign exchange revenues. In a country where a huge portion of the population lives in poverty, coffee farming is critical to the country's cultural and socioeconomic well-being.

According to a World Bank assessment, over 25% of Ethiopia's population is dependent on coffee cultivation, processing, and marketing, either directly or indirectly (Umaran et al., 2022). Ethiopia is noted for having a suitable environment for growing coffee, with a mix of optimum height, temperature, rainfall, and soil type, and Ethiopia is the source of Arabica coffee. For this Arabica coffee, the country has a diverse genetic background with significant variation. Ethiopia produces a variety of coffees and they have significant potential for specialty coffee sales (Sayed et al., 2017).

2.1. Factors Affecting Coffee Supply Chain Management in Ethiopia

While new markets emerge, many coffee-dependent poor countries, such as Ethiopia, are struggling to produce and export their coffee. Ethiopia is the world's fifth-largest coffee producer and the continent's leading producer. Most of the coffee is consumed in the country, and it has the highest domestic consumption rate on the African continent (Anwar & Nguyen, 2010).

Ethiopia is famous not only for being the birthplace of Arabica coffee but also for its high-quality coffee, which is prized for its aroma and flavor. Another appealing aspect of Ethiopian coffee is its variety of flavor and quality. There is widespread agreement that the five most significant marketing-related constraints confronting Africa's farmers revolve around five points: (1) high production and marketing costs, resulting in low profitability and a disincentive to produce for the market; (2) limited access to credit, particularly for small-scale farmers; (3) a scarcity of profitable new farm technologies to adopt and use sustainably; (4) price volatility; and (5) poor market access and competitiveness conditions (Jayne et al., 2014).

The primary goal of a coffee exchange value is to establish a fair, orderly, and efficient system for aligning supply and demand to enable "market pricing," or the true current value based on supply and demand conformity (Alam, 2020; Angula, 2010; Jima Degaga et al 2017). To attain this alignment, an exchange value can and must restrict market behavior through risk assessment equipment designed to ensure that market behavior adheres to the principles of a fair, orderly, and efficient marketing system. These tools include, among other things, limiting trading positions, trying to adjust the rate of return and other deposit prerequisites, and establishing price loop filtration to limit price swings, marketing factors, finances, government policies, and physical and human resources greatly affected coffee production (Catturani et al., 2008; Gathura, 2013; Issa & Chrysostome, 2015).

Ethiopia's export competitiveness is improved by first getting the domestic market in order, whereby three groups of problems in the commodity market are identified: 1) the lack of an integrated commodity marketing policy that addresses all processes involving transport, grading, storage, and information facilities for both producers and consumers; 2) the lack of a well-equipped institutional establishment capable of providing all marketing services to all market actors; and 3) the lack of private and public partnership in the commodity market (Alam, 2020; Angula, 2010; Gebermedin & Tolera, 2015). Thus, commodity exchanges are established for a variety of reasons, the most important of which is to address the and related challenges. Conversely, dissatisfaction with transportation and communications services; a lack of complete, accurate, and accessible global marketing information; a lack of adequate warehouses, grading, and sampling systems; and a higher premium cost for failing to pull back commodities from storage facilities on time were identified as some of the ECX difficulties for agriculture products export members (Abebaw, 2014; Shumeta et al., 2012; Shumeta & Haese, 2018).

Exchange rates can be useful throughout physical trade in emerging markets, including the financing of commodity inventories. They can lower the cost of physical exchange exploration and counterparties in deals with a number by providing a transparent, disciplined marketplace (Ngmenipuo & Issah, 2015). Commodities that work properly can encourage more efficient

and productive, storage, marketing, and agriculture sectors processing activities, as well as significantly improved agriculture sector effectiveness. (Apriyanti, 2020).

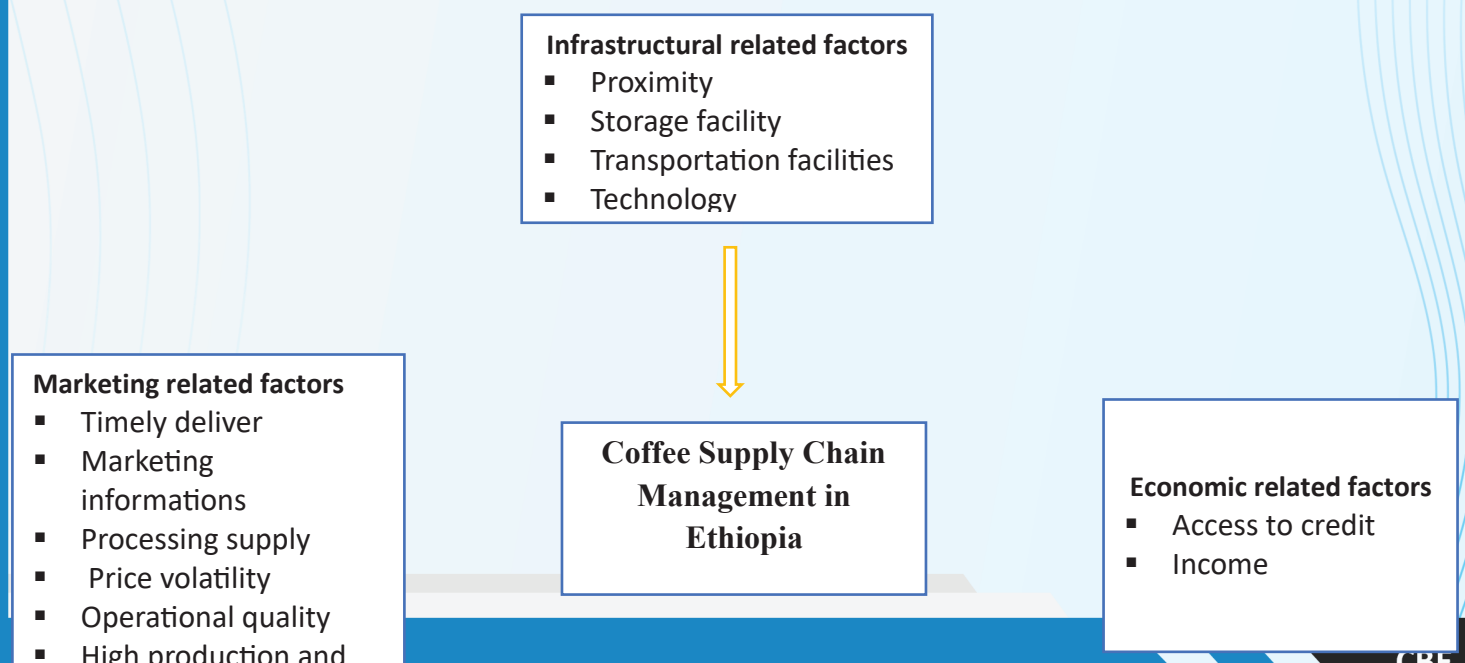
Small-scale farmers, privately held farmers, and state businesses are among the producers at this stage in Ethiopia's coffee supply chain (USDA, 2019). Producers, particularly large-scale private coffee plantations and state farms of coffee plantations, control the majority of the volume of goods mobilized, value-adding services, market share, and capital in the country's coffee value chain. Subsequently, the coffee is made and matured, those producers execute the following value-added operations in the value chain, gathering coffee chary and delivering it to processing regions (USDA, 2019)

A supply chain's primary complaint is to start producing value-added goods or services for a market location by improving an organization and utilizing infrastructure and services inside the possibility and restrictions of its institutional context. As a result, we believe that the restrictions to value progress are associated to access to the common market (municipal, geographic, and worldwide) and market alignment (Hernandez, 2015; Perdana et al., 2018; Sayed et al., 2017).

Despite its high quality, Ethiopian coffee is the least advertised and promoted on the global market. Evidence suggests that roasters are aware that Ethiopian coffee is superior, but they are unable to sell it because we have not approached them. That is, one of the problems with coffee marketing in Ethiopia is that there is insufficient effort to promote coffee and ensure trademark rights for the best and most well-known Ethiopian coffee varieties, the majority of which are motive and number one in the world. Furthermore, exporters lack experience and knowledge of the coffee market (Angula, 2010; Kabeta, 2021). However, to the best of the researcher's knowledge, none among the empirical study has been conducted in the Ethiopian Commodity Exchange (ECX) at Jimma Branch and most of these studies did pay attention to determinant/factors affecting the coffee supply chain rather than its contributions to economic growth or the extent to which those factors impacts the CSCM. Therefore, this study will be worthy of persuit to bridge this gap and add knowledge to the existing literature.

2.2 Conceptual Framework of the Study

Based on the aforementioned information and reviewed literature, the researchers presented the conceptual framework depicted in figure 1.



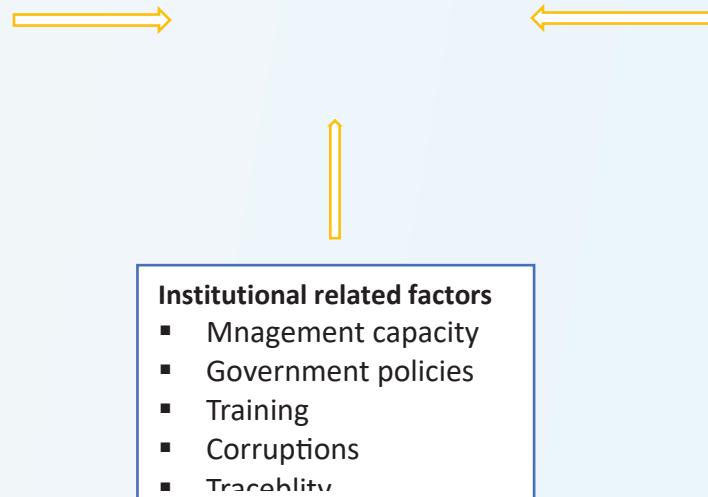


Figure 1: A Conceptual framework for factors affecting coffee supply chain management in Ethiopia

Source: Developed from reviewed literature

3.0 Methodology

3.1 Research Design

The study employed a cross-sectional survey design which incorporates both descriptive and explanatory research design to examine data and get enough information about the study's realities. The descriptive research design was used to describe the contributions and constraints of each determinant factor on coffee supply chain management and marketing system in Ethiopia at EXC of Jimma Branch. The study also used an explanatory research design to investigate the relationship between independent variables (institutional, infrastructural, marketing, and economic factors), and dependent variables (coffee supply chain management) because those variables have a cause-and-effect relationship.

3.2 Target Population and Sample Size

Agreeing to (Kothari, 2004), the "target population" refers to the intended population of a study in terms of age group and gender in a certain geographical area such as a country, region, or town. Accordingly, the study used 321 employees of the Ethiopian Commodity Exchange (ECX) of the Jimma branch as the target group of the study. Hence, the researchers selected a sample of responders among these employees. The study employed the (Yamane, 1969) sampling technique for determining sample size as shown in equation (1). Thus, the researcher chooses 178 employees as a sample size out of 321 employees.

The formula for sample determination is $n = \frac{N}{1+N(e^2)}$, whereby: n =sample size, N =Targeted population, e =Level of precision or sampling error which is 0.05.

$$\text{Thus, the sample employees of ECX, } n = \frac{321}{1+321(0.05^2)} = 178$$

3.3 Sources of Data

The main sources of information for this survey were primary data. Questionnaires and interviews were used to collect primary data. The questionnaires were created for the entire group of respondents, and it is the best and most important primary sources. The cross-section survey research method was used to collect data for this study because it is an appropriate method for measuring respondents' opinions and attitudes. The researchers had carefully crafted insightful interview questions in addition to the questionnaires. The interview was conducted under the assumption that the participants' perspectives are valuable, that they are knowledgeable in the field, that they can make accurate comments, and that their perspective influences the study's success.

3.4 Method of Data Analysis

Various statistical methods, including descriptive statistics such as mean and standard deviations, as well as inferential statistics (multiple regressions and the Automatic linear regressions model) were used to analyze the data. The study employed multiple linear regression analysis to analyze the strength of the relationship between the independent variable and various predictor variables, as well as the importance of each predictor to the relationship with the influence of other predictors. The data was then analyzed and interpreted in light of the information gathered from respondents. Accordingly, the general model for this specific study is as follows:

$$y = b + m_1x_1 + m_2x_2 + m_3x_3 + m_4x_4 + \varepsilon$$

Where,

y= The dependent variable of the regression which is coffee supply chain management (CSCM)

b= Constant or the y-intercept

m_1 = Regression coefficient of the first independent variable

x_1 = First independent variable of the regression which is Marketing related factors

m_2 = Regression coefficient of the second independent variable

x_2 = Second independent variable of the regression which is Infrastructural related factors

m_3 =Regression coefficient of the third independent variable

x_3 = Third independent variable of the regression which is Institutional related factors

m_4 = Regression coefficient of the fourth independent variable

x_4 = Fourth independent variable of the regression which is Economic related factors

ε = Model error

3.5 Validity and Reliability of the Study

Validity is a measurement trait that describes a research instrument's or tool's ability to measure what it was designed to measure. The validity of instruments is ensured in this study by using simple language when creating instruments so that respondents can understand them easily. The questionnaires were examined and checked by consultants and potential experts in quantitative research. Then were pre-tested to employees of ECX at Jimma branch who were not part of the study sample. Reliability is the degree to which a research mechanism produces reliable outcomes or data the same way each time it is used under the same condition with the

same subjects. The reliability of the study would be checked by using Cronbach alpha which was calculated by using SPSS software.

4.0 Results, and Discussion

This chapter discusses the presentation, interpretation, and analysis of the study's data. The variables in the study were the factors and their effects on CSCM. Descriptive statistical analysis, such as percentages and frequencies, was designed to present how these factors affect CSCMM. To assess the influencing factors on CSCM in Ethiopia, Multiple linear regression and automatic linear regressions were used to show the effects and importance of the predictors. To conclude, 178 questionnaires were distributed to respondents, and the collected data were presented and analyzed by using SPSS (version 26) statistical software to test the study's variables and the effects of the independent variables on the dependent variable.

4.1 Validity and Reliability of the Data

The study used Cronbach's alpha which is dealing with the amount to which item responses obtained at the same time are highly correlated with one another, and the widely accepted social science cut-off is that alpha should be greater than 0.70 for an agreed of items to be considered a scale (Field, 2009). Accordingly, the Cronbach's alpha test was performed by using SPSS 26 versions, and the results are summarized as shown in Table 1. The calculated coefficient of alpha for this study was 0.970 for all variables, which is greater than the required threshold of 0.70, indicating that the variables are internally reliable.

Table 1: Summarized Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.970	0.980	15

The inter-item correlation was also used to determine the correlation coefficients for items in the study's scale, to check and see if the items interrelated well. To be the inter-item correlation interrelated well, the threshold of the reliability test has to be greater than 0.3 (Field, 2009). This technique also shows that the survey data was statistically reliable. For all items that are inserted in the systems of Cronbach alpha, the value is greater than 0.3 which fits above the required standards. This shows the data used by the study is reliable and valid for analysis. (See below Table 2)

Table 2: The correlation coefficients for inter-item

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
o Timely delivery	59.847	56.246	0.779	0.971
o Marketing information	59.3820	56.961	0.926	0.966
o Processing and supply	61.0112	60.870	0.918	0.968
o Price volatility	59.2022	55.835	0.839	0.969
o Operational quality	59.0112	60.870	0.918	0.968
o Proximity to cooperative society	59.2921	58.920	0.874	0.967
o Storage facilities	60.5730	50.777	0.951	0.970
o Transportation facilities	59.1966	61.560	0.797	0.969
o Technology	59.0112	60.870	0.918	0.968
o Management capacity	59.1067	60.955	0.875	0.968
o Government policies	59.0052	60.755	0.865	0.968
o Training	59.0112	60.870	0.918	0.968
o Corruptions	58.9663	61.276	0.889	0.968
o Access to credit	59.2865	62.691	0.674	0.971
o Income	59.1067	60.955	0.875	0.968

As shown in Table 2 above, the overall and inter-item Cronbach's alpha values of all dependent and independent variables in the study meet the minimum requirement of reliability analysis (i.e. $\alpha > .70$). As a result of this finding, the researcher concludes that the instrument's pilot test is reliable enough to use in the current study. Additionally, all the items contribute positively to yielding the highest Cronbach's alpha for the instrument.

4.2 Descriptive Analysis

The Descriptive analysis and interpretation are based on the respondent's responses and clear sentences to express obtained data by using the table of frequencies, percentage, mean and standard deviations; whereas the data collected through interviews were analyzed qualitatively to strengthen the analysis of the results from the study. The descriptive analysis mainly focuses on explaining the contributions of the independent variables such as Marketing related factors (Timely delivery, Marketing information, Processing and supply, Price volatility, and Operational quality), Institutional related factors (lack of management capacity, Inadequate training, and Corruptions), Infrastructural related factors (Proximity to cooperative society, Storage facilities, Transportation facilities, and Technology) and Economic related factors (Access to credit and Income) for dependent variables such as coffee supply chain management and marketing.

Descriptive analysis was used to summarize the results of each variable based on the response for each item and analyzed by comparing the "mean" and "standard deviation" scores of each

variable. According to Zaidaton & Bagheri (2009), the mean score below 3.39 was considered as low, the mean score from 3.40 up to 3.79 was considered moderate, and the mean score above 3.8 was considered as high as illustrated below. (*See below Table 3*)

Table 3: Comparison bases of the mean score of the five-point Likert scale instrument

Mean Score	Description
<3.39	Low
3.40 -3.79	Moderate
>3.80	High

Hence, based on the above table 3 descriptive statistics were employed to analyze the data that was calculated by using SPSS, and the interpretations of each descriptive statistic were presented in table 4. (*See below Table 4*)

Table 4: The descriptive results for each independent variable

	Descriptive Statistics		
	N	Mean	Std. Deviation
Marketing related factors	178	3.9506	0.64714
Infrastructural related factors	178	4.1222	0.64672
Institutional related factors	178	4.6278	0.45352
Economic related factors	178	4.4438	0.45060
Valid N (listwise)	178		

The results of above table 4 show the average mean and standard deviations of the predictor variables that have a significant effect on dependent variables. Hence the above table shows that Marketing related factors have a mean of 3.95 with standard deviations of 0.647, Infrastructural related factors have a mean of 4.122 with standard deviations of 0.646, Institutional related factors have a mean of 4.627 with standard deviations of 0.453, and Economic related factors has a mean of 4.443 with standard deviations of 0.450. According to Zaidaton & Bagheri (2009), the mean score below 3.39 was considered as low, the mean score from 3.40 up to 3.79 was considered moderate, and the mean score above 3.8 was considered as high. Based on this information all the above results are greater than the cutoff point or above the average which means that all independent variables (Marketing related factors, Infrastructural related factors, Institutional related factors, and Economic related factors) have greater effects on dependent variables (coffee supply chain management and marketing).

4.3 Inferential Statistics

The analysis and interpretation based on the respondent's responses were also interpreted by inferential statistics such as multiple regressions and automatic linear models to clearly state the relationships between each variable and their effects on (ECX) at Jimma Branch deeply disclosed according to the following (*See below Table 5*)

Table 5: Model Summary of relationships between variables of the study

Model Summary				Std. Error of the Estimate
Model	R	R Square	Adjusted R Square	
1	0.941 ^a	0.886	0.883	0.16688
a. Predictors: (Constant), Economic related factors, Marketing related factors, Institutional related factors, Infrastructural related factors				

The model summary is depicted in the above Table 5 shows, R which indicates a highly significant relationship between the dependent variable and the linear combination of the predictor variables is (0.941) which is the set of all independent variables explained 94.1%. R-squared, on the other hand, measures the proportion of the difference in the dependent variable that can be described by independent variables, irrespective of how well they are correlated with the dependent variable. Thus, the R Square value is (0.886) which indicates all independent variables explained 88.6% of the disparity in the dependent variables. However, this is not a desirable characteristic of goodness-fit of the results of the statistics. Hence, Adjusted R – squared, also provides an adjustment to the R-squared statistic, such as independent variables that correlate with the dependent variable. Accordingly, adjusted R-squared is preferable to R-squared for determining the model's success in the real world. Therefore, adjusted R-squared is the proportion of deviation described by the regression of the dependent variable on the combined effect of all predictor variables, which is 88.3%. Hence, the independent variables (such as economic, marketing, institutional, and infrastructure factors) can predict the dependent variable (coffee supply chain management) by 88.3 %.

Table 6: ANOVA results showing average amount of deviation described by the model and residual

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	37.300	4	9.325	334.852	0.000 ^b
	Residual	4.818	173	0.028		
	Total	42.118	177			
a. Dependent Variable: Coffee supply Chain Management						
b. Predictors: (Constant), Economic related factors, Marketing related factors, Institutional related factors, Infrastructural related factors						

The ANOVA (Analysis of variance) Table 6 above shows that, based on the total observation value (42.118), the regression model was explained by the majority of the observations (37.300). The remaining observation values (4.818) were explained by extraneous variables. The mean square of the model (regression) represents the average amount of deviation described by the model is 9.325; whereas the mean square of the residual is 0.028 and represents the average amount of deviation described by extraneous variables (the unsystematic variation). The F – ratio (334.852) is a degree of the percentage of deviation described by the model to variation explained by extraneous variables. Thus, the value of F is large enough to conclude that the model represents an actual practice of the business operators under study. The significant value in the model, also known as the P-Value ($p \leq 0.001$), indicates that the independent variables in the model explain the dependent variable. (*See below Table 7*)

Table 7: Regression coefficients results for related factors which predicts CSCM

Coefficients ^a					
Model		b	Std. Error	t	Sig.
1	(Constant)	1.717	0.220	7.794	0.000
	Marketing related factors	0.308	0.079	3.881	0.000
	Infrastructural related factors	0.432	0.116	3.730	0.000
	Institutional related factors	-0.732	0.079	-9.215	0.000
	Economic related factors	0.670	0.070	9.504	0.000
a. Dependent Variable: Coffee supply Chain Management					

The unstandardized coefficient of an independent variable (b) which is a constant or the y-intercept in the equation, measures the strength of its relationship with the performance of the dependent variable. Thus, the coefficient for marketing-related factors is 0.308, the coefficient for infrastructure-related factors is 0.432, the coefficient for institutional-related factors is -0.732, and the coefficient for economic-related factors is 0.670. Thus, marketing, infrastructure, institutional, and economic-related factors predict coffee supply chain management by 30.8%, 43.2%, and 73.2% and 67%, respectively.

Using the regression coefficients for independent variables and the constant term given under the column labeled b, the researchers constructed the regression equation for predicting a firm's performance as follows:

$$y = b + m_1x_1 + m_2x_2 + m_3x_3 + m_4x_4 + \varepsilon$$

$$\text{Therefore, } y = 1.717 + 0.308x_1 + 0.432x_2 + 0.732x_3 + 0.670x_4 + \varepsilon$$

Generally, the above finding implies that improving coffee marketing conditions, and enhancing infrastructural and institutional facilities were among the important factors to improve coffee supply chain and marketing, thereby improving the livelihoods of coffee producers in the study area.

Table 8: Automatic linear model results for predictors' performance/Importance on CSCM

Nodes	Importance	Importance	V4	V5
Marketing related factors transformed	0.0238	0.0238	Marketing related factors	0.0238
Infrastructural related factors transformed	0.1047	0.1047	Infrastructural related factors	0.1047
Institutional related factors transformed	0.3067	0.3067	Institutional related factors	0.3067
Economic related factors transformed	0.5648	0.5648	Economic related factors	0.5648

The results in the above table 8 were obtained by using automatic linear modeling which reveals that, the most important predictors for this study are economic-related factors such as farmer's or coffee producer's access to credit. Hence economic-related factors have great (56.48%) effects on CSCM in Ethiopian Commodity Exchange (ECX) at Jimma branch followed by institutional related factors which have more (30.67%) effects on CSCM while infrastructural related factors and marketing related factors are the least important (10.47% and 2.38%) respectively. Hence, the finding of this study discloses that institutional related factors such as poor institutional managements system, absence of training, and corruption are among various factors which have a serious effect on CSCM in Ethiopian Commodity Exchange (ECX) at Jimma branch next to economic related factors. In general, it was discovered that the majority of the respondents agreed on the coffee supply chain management and marketing are ineffective.

5.0 Conclusion and Recommendations

The purpose of this study was to examine the factors affecting Coffee Supply Chain Management in Ethiopia: the case of Ethiopian Commodity Exchange at Jimma branch. The descriptive and explanatory research analysis was used for the study. The finding of descriptive statistics show that all of the independent variables have an influence on dependent variables. The finding from the inferential statistics also shows that the model represents an actual practice of the business operators under study. The significant value in the model, also known as the P-Value ($p \leq 0.001$), indicates that the independent variables in the model explain the dependent variable. The adjusted R-squared shows the proportion of deviation described by the regression of the dependent variable on the combined effect of all predictor variables, which is 88.3%.

In general, it was discovered that coffee supply chain management is ineffective, whereby corruption, lack of technology, lack of access to credit, inadequate training, and management capacity are major important factors. Therefore, the study recommends that sufficient and

interest-free credit facilities should be made available to coffee producers and other actors or members on time. Microfinance institutions play an important role in this regard, and strategies should be developed to link microfinance with all actors further the government should give attention to formulate policies regarding all these factors. Moreover, corruptive practices should be reduced by raising awareness about the effects of corruption, dismissing corrupted committees, firing the corrupted employees in the unions and, care should be taken to consider their background and ethical standards while recruiting committee members and employees.

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How Do Bank Financial Technologies Impact Total Factor Productivity of Enterprises? Evidence from China's Banking Sector and Listed Companies

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Abstract

Enhancing total factor productivity (TFP) in enterprises is crucial for achieving high-quality economic development. This study empirically investigates the impact and underlying mechanisms of bank financial technology (fintech) development on TFP, using a variable based on bank-filed invention patents alongside manually collected micro-level lending data from 2012 to 2021. The findings indicate that the advancement of bank fintech significantly enhances TFP. The robustness of these results is confirmed through a series of robustness checks and endogeneity tests. This positive effect is particularly pronounced in the private sector, firms with a high degree of digital transformation, and those operating in regions with less marketization. Moreover, the study reveals that bank fintech development enhances TFP by increasing credit supply, mitigating maturity mismatch risks in enterprise financing, alleviating financing constraints, optimizing financial resource allocation, promoting the transition of enterprises from hypothetical activities to real activities, and fostering innovation. These insights provide valuable implications for strengthening the role of financial services in supporting the real economy, thereby driving high-quality economic development in China.

Keywords: *bank financial technology, total factor productivity, financing constraints, devirtualization, listed companies.*

I. Introduction

During China's critical economic transition, the traditional development model driven by capital and labor factors has exhibited diminishing marginal returns. Consequently, sustained economic growth now increasingly depends on improvements in total factor productivity (TFP) (Huang et al., 2019). Enterprises, as key market players and vital contributors to economic and social development, are instrumental in determining whether China can achieve high-quality growth through the effective enhancement of its TFP. As traditional economic growth models lose effectiveness, technological innovation, particularly the rapid development of financial technology (fintech), has become a key driver of economic growth by optimizing financial resource allocation and enhancing enterprise productivity. Consequently, understanding the role of fintech in improving firms' TFP has become a critical focus for both scholars and policymakers (Huang et al., 2019).

Since 2013, the widespread adoption of emerging technologies such as cloud computing, big data, artificial intelligence, and blockchain in the financial sector has rapidly reshaped the financial industry's landscape. Fintech has thus become a strategic priority for banks, leading to significant digital transformation efforts. According to the *China Fintech and Digital Inclusive Finance Development Report (2023)* and various bank annual reports, fintech investment and financing in China totaled 53.13 billion RMB across 184 transactions in the first three quarters of 2022. In 2021, 28 commercial banks collectively invested 176.623 billion RMB in fintech, representing a substantial 15.63% increase compared to 2020.

In this context, a critical question emerges: Can the development of bank fintech enhance firms' TFP and serve as a catalyst for improving the quality of financial services to the real economy? What are the underlying mechanisms? While existing research has predominantly focused on the impact of institutional reforms (Zhang et al., 2022; Zhang et al., 2023), local public debt (Zhu et al., 2022), and environmental regulations (Peng et al., 2021) on firms' TFP, there remains a lack of scholarly work exploring the influence of bank fintech development on firms' TFP and the mechanisms at play.

China's financial system is bank-dominated, with bank credit being the main source of external financing for enterprises in the real economy (Lin, 2011). As a result, the bank credit channel emerges as a crucial pathway for leveraging fintech to empower the real economy. Elucidating the relationship between bank fintech development and firms' TFP carries significant theoretical and practical implications for deepening banking sector reforms, enhancing the financial system's support to the real economy, and ultimately promoting high-quality economic development in China.

This paper constructs a novel variable representing the development level of bank financial technology (fintech) based on banks' patent applications and combines it with manually collected micro-level data on bank-enterprise lending from 2012 to 2021 to empirically investigate the impact of bank fintech development on firms' TFP and its underlying mechanisms. The findings reveal that the advancement of bank fintech significantly enhances firms' TFP, with the baseline results remaining robust across various robustness

checks. To address potential endogeneity concerns, the study employs the average time of the first application for fintech patents by each bank within the firm's loan portfolio as an instrumental variable. The results remain consistent and robust even after instrumental variable regression.

Furthermore, based on company ownership, the degree of firms' digital transformation, and the level of marketization in the firm's province, it demonstrates that the positive impact of bank fintech development on firms' TFP is particularly pronounced in non-state-owned enterprises, firms with a higher degree of digital transformation, and those in less market-oriented regions. Bank fintech fosters TFP growth by increasing credit supply, mitigating the risk of maturity mismatch in financing, and easing financing constraints. Additionally, it optimizes the allocation of financial resources, promotes financial rebalancing towards the real economy, and ultimately leads to substantial improvements in firms' TFP.

The marginal contributions of this paper are as follows:

Focusing on the Real Economy: This study perspective focusing on the impact of bank fintech on the real economy enriches and complements the literature in the field of fintech. Existing literature mainly studies the impact on small and micro enterprises' credit supply (Gopal and Schnabl, 2022) and corporate innovation (Ding et al. 2022) from the perspective of non-bank fintech. This paper uniquely examines the effects from the perspective of bank fintech—a relatively underexplored area. Although a few studies, such as Cheng and Qu (2022), utilize text mining and Baidu search engine data to construct a bank fintech index and link it to reduced credit risk in Chinese commercial banks, and Bian et al. (2024) employed machine learning to analyze fintech-related terms in banks' annual reports to assess bank performance, our research breaks new ground. It not only confirms that bank fintech development is a critical driver of firms' TFP but also delves into the mechanisms through which this occurs, offering deeper insights into the influence of bank fintech on firms' TFP.

Innovative Measurement Methodology: This paper introduces a novel approach to measure bank fintech. By identifying bank fintech patent information through the ICP classification number of bank invention patents, we construct a unique variable to represent the development level of bank fintech, which is a beneficial attempt in terms of research tools, offering a more precise and differentiated measure of bank fintech.

New Insights for Economic Transition: The study provides new insights into how the financial sector can better serve the real economy and promote high-quality economic development during China's crucial economic transition period. By examining the impact of bank fintech development on the banking system, we find that it enhances credit supply, reduces the risk of maturity mismatch, and alleviates financing constraints. Furthermore, it optimizes financial resource allocation, fostering a shift towards the real economy, and ultimately leads to substantial improvements in firms' TFP. These insights not only deepen our understanding of the relationship between fintech and economic growth but also offer practical implications for policymakers aiming to harness fintech for economic development.

II. Theoretical Analysis and Hypothesis Development

Bank Fintech Facilitating Bank Transformation and Enterprise Development

Since 2013, banks have accelerated their involvement in the fintech sector by establishing fintech subsidiaries, collaborating with leading internet and fintech companies, increasing investment in technological research and development, and recruiting specialized fintech talent. These efforts are aimed at generating endogenous growth momentum. The development of fintech has disrupted the traditional, homogeneous competitive landscape of the financial industry, compelling banks to reinvent their business processes, enhance service quality and efficiency, and innovate financial products (Elia et al., 2023). For example, banks have leveraged fintech to streamline the financing process for intellectual property pledges, expand the collateralization of intangible assets, and address issues in inclusive finance such as a lack of credit, information, and trust. Ultimately, these advancements have led to an increase in the quantity of bank credit supply and an improvement in the quality of financial resource allocation.

Information asymmetry is a major cause of credit risk (Liao et al., 2009). Ma et al. (2019) indicated that resolving the pain points of "difficult and expensive financing" for enterprises hinges on addressing the issue of information asymmetry between banks and enterprises. Banks, by adopting a "scenario + finance" model and relying on advanced technologies such as big data platforms, cloud computing, and blockchain, can achieve dynamic customer segmentation and precise enterprise profiling, thereby significantly reducing information asymmetry and enhancing banking efficiency (Lee et al., 2021). Additionally, bank fintech, through the digital transformation of credit approval processes, the application of big data credit evaluations, and intelligent risk control models, has been shown to reduce credit risk (Cheng and Qu, 2020) and increase banks' risk tolerance (Wu et al., 2023). New technologies enable banks to collect unstructured and dynamic customer information from multiple dimensions and at higher frequencies, allowing for automated continuous monitoring and intelligent identification of potential risk points and transmission paths. This enhances the proactiveness and foresight of risk management (Li et al., 2022).

These transformations brought about by bank fintech empower banks to promote enterprise development. Therefore, this paper proposes:

H1: The higher the level of bank fintech development, the higher the total factor productivity of enterprises.

Bank Fintech, Financing Constraints, and Firms' Total Factor Productivity

A significant body of research indicates that widespread financing constraints (Zhang, 2019; Wu and Huang, 2022) are a major factor leading to a decline in enterprise TFP. Short-term borrowing for long-term investments, often adopted by enterprises as a substitute strategy when facing external financing constraints, reflects the inadequacy of China's traditional

financial system in serving the real economy. Enterprises in the real economy are in urgent need of new financial service models (Leppänen et al., 2023). Banks, leveraging big data platforms and technologies, can collect unstructured and dynamic information from customers across more dimensions, thereby gaining timely, accurate, and comprehensive insights into business operations. This enables dynamic customer segmentation, precise enterprise profiling, and the mitigation of information asymmetry. Consequently, banks can increase credit supply, reduce the risk of maturity mismatch in financing, alleviate financing constraints, and ultimately enhance enterprise TFP. Based on this, the paper proposes:

H2: Bank fintech enhances banks' information screening capabilities, increases credit supply, reduces the risk of maturity mismatch in enterprise financing, and thereby alleviates financing constraints.

Bank Fintech, Devirtualization, and Enterprise Total Factor Productivity

In China, due to banks' "ownership preference" (Cao et al., 2023), there is a significant issue of credit misallocation (Weng et al., 2024). Many technology-driven and labor-intensive firms, lacking the collateral required by banks, often resort to holding their cash as financial assets as a form of "precautionary savings" to hedge against future financing uncertainties, thereby forming a risk-averse financialization motive (Zhong et al., 2023). Additionally, when returns from real economic activities are insufficient, some firms, driven by a profit-seeking bias and short-term profit maximization, shift towards higher-yielding financial investments (Chen et al., 2023A).

The development of bank fintech can provide "precise enhancement" in terms of quality, enhancing firms' access to credit and bringing inclusive financing effects. Improved financing stability and overall profitability support increased investment in research and development (R&D), thereby enhancing firms' core competitiveness. Based on this, we propose the following hypothesis:

H3: Bank fintech enhances Enterprise total factor productivity by optimizing the allocation of financial resources and promoting the devirtualization of enterprises.

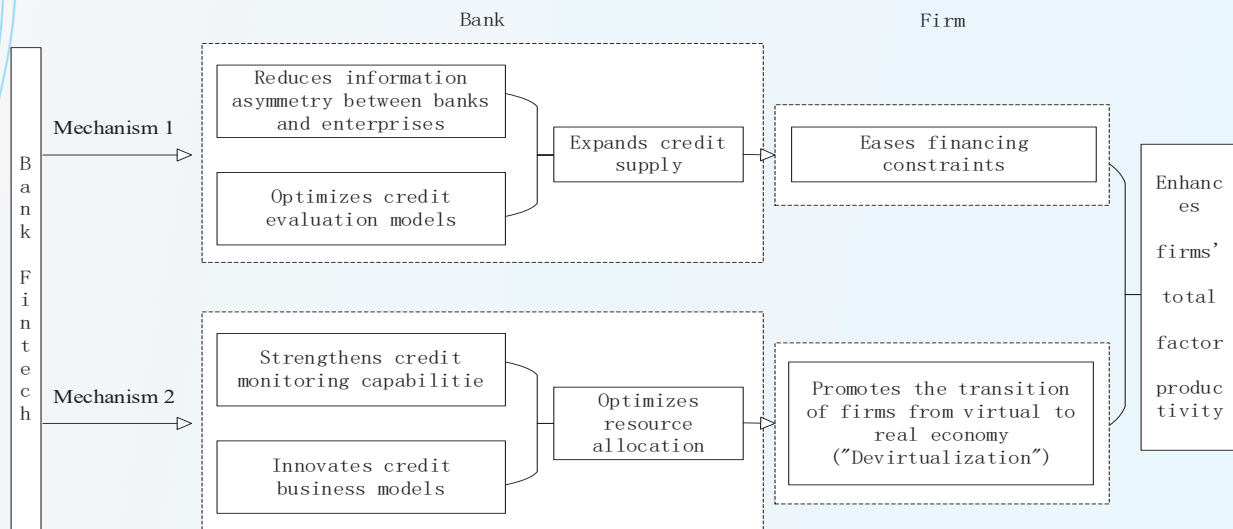


Figure 1. Mechanisms through which Bank Fintech Enhances Enterprise Total Factor Productivity

III. Research Design

Sample Selection and Data Sources

This study manually collected detailed data on loans issued by banks to listed companies, short-term commercial paper issuers, and bond issuers from 2012 to 2021, due to the availability of data. The data includes loan contracts with information such as the borrowing company, lending bank, loan interest rates, and loan terms. The borrowing information is obtained from sections in the annual reports of listed companies, such as "Top Five Long-term Loans Due within One Year," "Top Five Long-term Loans," "Details of Long-term Loans," "Details of Short-term Loans," and "Clarifications on Long-term Loan Classifications," as well as from the "Interest-bearing Liabilities" section of the short-term commercial paper and bond catalogues. Duplicate records were removed based on borrower, lending bank, loan year, loan amount, and loan term, resulting in a base dataset structured as "firm-year-lending bank-loan amount."

To construct a measure of bank fintech development, this paper utilizes banks' invention patent data, identified by the International Patent Classification (IPC) codes. The IPC system is an internationally accepted tool for the classification and retrieval of patent documents and is widely used in patent management and research. Using objective IPC codes for patent identification is relatively straightforward and has established applications in both industry and academia. For instance, the "2019 Global Fintech Invention Patent Rankings (TOP100)" jointly released by IPR daily and the incoPat Innovation Index Research Center, defines fintech-related patents using the IPC codes G06Q20, G06Q30, and G06Q40. Similarly, Lerner et al. (2021) use U.S. patent data and point out that the classification of bank fintech patents using G06Q20 and G06Q40 codes from the Cooperative Patent Classification (CPC) system has gained wide acceptance.

In this study, bank fintech patents are defined by the IPC codes G06Q20, G06Q30, G06Q40, G06N3, G06N20, G06K9, and G07F19 from the group of invention patents filed by banks. The specific IPC classification contents for bank fintech patents are detailed in Table 1.

Table 1. IPC Classification Contents for Bank Fintech Patents

International Patent Classification (IPC) Code	Content
G06Q20	Involving data processing systems or methods, related to payment system architectures, schemes, or protocols
G06Q30	Involving data processing systems or methods, related to e-commerce
G06Q40	Involving data processing systems or methods, related to finance, insurance, and tax strategies
G06N3	Computer systems involving specific computational models, related to biological models
G06N20	Computer systems involving specific computational models, related to machine learning.
G06K9	Involving data recognition, representation, and recording media, such as graphic signal conversion and speech recognition
G07F19	Involving coin-operated devices or similar devices, such as automated teller machines (ATMs)

Note: Data sourced from the International Patent Classification (IPC) system.

Following the methodology of Li et al. (2023), we used loan amounts as a connecting bridge to establish the relationship between banks and enterprises. The base dataset was matched with the annual number of fintech patents filed by each bank. These patent filings were then weighted by loan amounts and averaged at the firm level, resulting in a panel dataset of "firm-year-weighted bank fintech patent application information."

Financial and corporate governance data at the firm level were obtained from the China Stock Market & Accounting Research (CSMAR) database, while bank-level financial data were sourced from the Wind database. The initial sample underwent the following filtering procedures:

- 1.Exclude firms marked as ST (Special Treatment), *ST (Risk Warning), and PT (Particularly Transferable).
- 2.Exclude financial and insurance companies.

3.Exclude companies that have been listed for less than one year, delisted, or suspended from trading.

4.Remove firms with missing data.

After applying these filters, the final dataset comprised 4,104 firm-year observations. To mitigate the influence of outliers on the study's conclusions, continuous variables at the firm level were winsorized at the 1% and 99% levels.

Variable Definitions

Dependent Variable: Firms' Total Factor Productivity

Common methods for calculating total factor productivity (TFP) include the Levinsohn-Petrin (LP) method (Levinsohn & Petrin, 2003) and the Olley-Pakes (OP) method (Olley & Pakes, 1992). This study uses the LP method to estimate enterprise TFP and employs the OP method for robustness checks, denoting them as TFP_LP and TFP_OP, respectively. Addressi (2014) noted that the OP method requires that the proxy variable (investment) maintains a monotonic relationship with total output, meaning that TFP cannot be estimated for firms with zero investment. On the other hand, Beveren,V (2012) highlights that the OP method must account for firm entry and exit to construct an exit variable, which could introduce some bias in unbalanced panel data.

Independent Variable: Bank Fintech Development Level

Following Li et al. (2023), we use the loan relationship between banks and firms as a connection and consider the comprehensive nature of fintech patents. We calculate the bank fintech patent variable weighted by loan amount at the firm level. The specific formula is:

$$BFinTech2C_{it} = \sum_{b=1}^N \frac{loan_{ibt}}{loan_{it}} \times patent_{bt} \quad (1)$$

Where, $patent_{bt}$ represents the natural logarithm of the number of bank b 's fintech patents in year t , identified using International Patent Classification (IPC) codes, plus one. $loan_{ibt}$ indicates the loan amount received by enterprise i from bank b in year t . $loan_{it}$ denotes the total loan amount received by enterprise i in year t . By weighting the bank-level fintech patents by loan volume, we obtain the enterprise-level variable representing the development level of bank fintech ($BFinTech2C$). A key assumption here is that the influence of bank fintech on enterprise behavior is significantly and positively related to the scale of loans between banks and enterprises. Although this assumption aligns with economic intuition, to ensure the reliability of our results, we also conduct specific tests on the choice of weights in the robustness checks.

Control Variables

To minimize omitted variable bias, we control for various factors at both the firm and bank levels.

Firm-Level Control Variables:

- 1) Firm Size (Size): Natural logarithm of total assets.
 - 2) Leverage (Lev): Total liabilities divided by total assets.
 - 3) Return on Assets (ROA): Net income divided by total assets.
 - 4) Tobin's Q (TobinQ): Market value of the firm divided by total assets.
 - 5) Intangible Asset Ratio (IAR): Proportion of intangible assets to total assets.
 - 6) Cash Flow Level (Cash): Net cash flow from operating activities divided by total assets.
 - 7) Firm Age (Age): Natural logarithm of the firm's establishment year.
 - 8) State-Owned Enterprise (SOE): Indicator variable where 1 indicates a state-owned enterprise, and 0 indicates otherwise.
 - 9) Equity Balance (EQU): Ratio of the shareholding percentage of the second to fifth largest shareholders to that of the largest shareholder.
 - 10) Institutional Investor Shareholding Ratio (IISR): Proportion of shares held by institutional investors.
 - 11) Dual Role (Dual): Indicator variable where 1 indicates that the chairman also serves as the CEO, and 0 indicates otherwise.
 - 12) Bank-Level Control Variables:
 - 13) Bank Size (Size_b): Natural logarithm of total bank assets.
 - 14) Bank ROA (ROA_b): Net profit divided by total bank assets.
 - 15) Non-Performing Loan Ratio (NPL_b): Ratio of non-performing loans to total loans.
 - 16) Bank Age (Age_b): Natural logarithm of the bank's establishment year.
- The specific definitions of these variables are summarized in Table 2.

Table 2: Variable Definitions

Variables	Variable Description
<i>TFP_LP</i>	Total Factor Productivity of Enterprises Calculated by LP Method

<i>TFP_OP</i>	Total Factor Productivity of Enterprises Calculated by OP Method
<i>BFinTech2C</i>	The Bank Fintech development level. The fintech patents identified by the IPC classification number plus one and taking the natural logarithm ,weighted by loan amount at the firm level
<i>BFinTech2Cw</i>	Bank fintech development level. According to Li et al. (2023) bank fintech variable construction method, the custom fintech dictionary is used to identify bank fintech patents by searching patent applications/abstracts. The natural logarithm of the identified bank fintech patents is weighted by loan amount at the firm level
<i>Ptime</i>	Instrumental variable of bank fintech development level. In the loan bank portfolio corresponding to the enterprise, the average time of each bank's first application for a fintech patent is taken as the instrumental variable, where the difference between the current accounting deadline and the date of the bank's first application for a fintech patent is less than 0.
<i>KZ</i>	Financing Constraints, KZ Index (Kaplan and Zingales, 1997). The larger the value, the higher the financing constraint
<i>Loan</i>	Loan amount, which is in the natural logarithm
<i>SFLI</i>	Short term loan and long term investment mismatch. Calculated as ; Short term loan and long term investment= Cash outflows for fixed asset purchases and construction -(increase in long term loans +cash inflow from the sale of fixed assets).A higher value indicates greater mismatch risk.
<i>Finhold</i>	The financialization of enterprises. Proportion of financial assets to total assets, include trading financial assets, derivative financial assets, net amount of purchased financial assets, net available-for-sale financial assets, net amount of loans and advances, net amount of held-to-maturity investments, net amount of long-term equity investments and investment property net amount.
<i>PhyCI</i>	Physical capital investment. Physical capital investment =(net fixed assets + net intangible assets + net long-term investment + net construction in progress)/ total assets.
<i>RD</i>	Enterprise R&D investment. The value is the ratio of R&D expenditure to total assets
<i>Cdigit</i>	Enterprise Digital Transformation Index. The data sourced from CSMAR database.

<i>PEA</i>	Marketization Level. Ratio of private industrial enterprise revenue to revenue of large and medium-sized industrial enterprises in the firm's province
<i>Size</i>	Firm size. It's the natural logarithm of the bank's total assets.
<i>Lev</i>	Leverage ratio. Ratio of total liabilities to total assets.
<i>ROA</i>	Return on assets. Ratio of net profit to total assets.
<i>TobinQ</i>	Firm value. The ratio of the market value of an enterprise to its total assets.
<i>IAR</i>	Intangible assets Ratio.
<i>Cash</i>	Cash flow level. The ratio of net cash flow from operating activities to total assets.
<i>Age</i>	Firm Age. Natural logarithm of the Firm's establishment year
<i>SOE</i>	State-owned enterprise indicator. 1 For state-owned enterprises, 0 for others.
<i>Equ</i>	Equity balance. The ratio of shareholding percentage of the second to fifth largest shareholders to that of the largest shareholder.
<i>IISR</i>	Institutional investor shareholding ratio.
<i>Dual</i>	Dual role indicator. 1 if the Chairman also serves as the CEO, 0 for others.
<i>Size_b</i>	Bank size. The natural logarithm of a bank's total assets.
<i>ROA_b</i>	Return on assets. The ratio of the bank's net profit to its total assets.
<i>NPL_b</i>	Non-performing loan ratio of banks.
<i>Age_b</i>	Bank age. Natural logarithm of the Bank's establishments year.
<i>PKFIIC</i>	Peking University Financial Inclusion Index. Natural logarithm of the inclusive finance index of the city where the lending enterprise is located.
<i>GDP</i>	Regional Gross Domestic Product. Natural logarithm of the regional gross domestic product where the enterprise is located
<i>SecendR</i>	The proportion of secondary industry. The ratio of the secondary industry GDP to regional GDP in the city where the enterprise is located.
<i>MKT</i>	Fan Gang marketization index

Model Specification

Following Li et al. (2023), who designed a model to verify the impact of bank fintech on enterprise financialization, this study employs a two-way fixed effects model to investigate the effect of the development level of bank fintech on firms' total factor productivity.

$$TFP_{i,t} = \alpha_0 + \alpha_1 BF\text{intech}2C_{i,t} + \alpha Controls_{i,t} + \sigma_j + \mu_t + \varepsilon_{it} \quad (2)$$

Where $TFP_{i,t}$ is the total factor productivity of enterprise i in year t , measured using both the LP method and the OP method. $BF\text{intech}2C_{i,t}$ is the development level of bank fintech for enterprise i in year t . $Controls_{i,t}$ represents a set of control variables. σ_j and μ_t represent unobservable industry-level heterogeneity and year-level shocks, respectively. Li et al. (2023) point out that the main reason for controlling for industry rather than firm fixed effects is that whether banks apply for fintech patents is not directly related to individual enterprise characteristics. Instead, factors at the industry level influence banks' lending preferences toward enterprises, and there are significant differences in how improved bank fintech levels affect different industries. ε_{it} is the random disturbance term, α_1 is the core coefficient of interest, indicating the effect of the development level of bank fintech on firms' total factor productivity. If α_1 is significantly positive, it suggests that the development of bank fintech contributes to enhancing firms' total factor productivity.

Empirical Results and Analysis

Descriptive Statistics

The descriptive statistics for this study are shown in Table 3. During the sample period, the mean total factor productivity (TFP) calculated using the LP method is 8.80, slightly higher than the mean of 7.02 obtained using the OP method. The medians are 8.71 and 6.93, respectively, suggesting no obvious skewness in the data. The mean value of the bank fintech development level, weighted at the enterprise level, is 3.34, with a standard deviation of 1.83, indicating significant differences in the number of fintech patents applied for by different enterprises. The statistical information for other control variables is like previous studies.

Table 3: Descriptive Statistics

Variables	Observations	Mean	SD	Min	Median	Max
<i>TFP_LP</i>	4104	8.7952	1.0990	6.4937	8.7069	11.5102
<i>TFP_OP</i>	4104	7.0245	0.9289	5.1664	6.9284	9.4234
<i>BFinTech2C</i>	4104	3.3401	1.8251	0.0000	3.1355	6.8448
<i>BFinTech2Cw</i>	4104	1.9967	1.9784	-1.8362	1.8215	6.7262
<i>Ptime</i>	4104	3.0674	3.1657	0.0027	1.7679	11.9726
<i>KZ</i>	4104	1.7529	1.9182	-3.8373	1.9217	6.0618
<i>Loan</i>	4104	10.4912	1.7725	6.3099	10.4773	14.6309
<i>SFLI</i>	4104	-28.5452	80.6864	-539.1841	-4.1668	20.2478
<i>Finhold</i>	4104	0.0736	0.0937	0.0000	0.0403	0.5060
<i>PhyCI</i>	4104	0.3093	0.2147	0.0024	0.2775	0.8282
<i>RD</i>	3332	0.0191	0.0169	0.0001	0.0160	0.0731
<i>Cdigit</i>	4104	3.5524	0.2660	3.1533	3.5223	4.1738
<i>PEA</i>	3130	0.5255	0.2210	0.0685	0.5356	1.1487
<i>Size</i>	4104	22.8758	1.4222	20.3261	22.7004	27.1493
<i>Lev</i>	4104	0.5235	0.1883	0.1112	0.5276	0.9162
<i>ROA</i>	4104	0.0462	0.0606	-0.2244	0.0469	0.2031
<i>TobinQ</i>	4104	1.3674	1.2929	0.0835	0.9728	7.1369
<i>IAR</i>	4104	0.0533	0.0696	0.0001	0.0346	0.4471
<i>Cash</i>	4104	0.0385	0.0628	-0.1471	0.0396	0.2075
<i>Age</i>	4104	2.9948	0.2898	2.1972	3.0445	3.6376
<i>SOE</i>	4104	0.4369	0.4961	0.0000	0.0000	1.0000
<i>EQU</i>	4104	0.7123	0.5870	0.0298	0.5476	2.6416
<i>IISR</i>	4104	0.4691	0.2389	0.0109	0.4877	0.9148
<i>Dual</i>	4104	0.2334	0.4231	0.0000	0.0000	1.0000
<i>Size_b</i>	4104	20.8972	0.6712	18.8504	21.0384	21.9276

<i>ROA_b</i>	4104	0.0123	0.0027	0.0067	0.0120	0.0179
<i>NPL_b</i>	4104	1.4069	0.2642	0.7510	1.4556	2.1874
<i>Age_b</i>	4104	3.2811	0.2958	2.1972	3.3673	3.6376
<i>PKFIIC</i>	4104	5.4330	0.3536	4.2246	5.5426	5.8623
<i>GDP</i>	4104	9.0718	1.1210	6.2091	9.2598	10.6739
<i>SecendR</i>	4104	0.3861	0.1146	0.1580	0.4020	0.6065
<i>MKT</i>	4104	9.6102	1.7173	4.0760	9.8130	12.3900

Baseline Regression Analysis

Table 4 reports the regression results of the impact of the development level of bank fintech on firms' total factor productivity. Columns (1) and (2) have TFP_LP as the dependent variable, showing the regression results without and with control variables, respectively. The regression coefficient of BFinTech2C is significantly positive at the 5% level. Columns (3) and (4) have TFP_OP as the dependent variable, and the regression coefficient of BFinTech2C remains significantly positive, indicating that the development of bank fintech is conducive to improving enterprise TFP. In terms of economic effects, taking Column (2) as an example, a one-standard-deviation increase in the development level of bank fintech associated with an enterprise leads to a 4.36% (0.0239×1.8251) increase in enterprise TFP, which is equivalent to 0.50% ($4.36 / 8.7952$) of the sample mean. The results in Table 4 support Hypothesis H1, which posits that the development of bank fintech breaks through the limitations of traditional banking financial services, empowers enterprises, and is beneficial for enhancing enterprise TFP.

Table 4: Bank Fintech and Firms' Total Factor Productivity

Variables	(1) <i>TFP_LP</i>	(2) <i>TFP_LP</i>	(3) <i>TFP_OP</i>	(4) <i>TFP_OP</i>
<i>BFinTech2C</i>	0.0460*** (3.5008)	0.0229** (2.3929)	0.0298*** (2.7709)	0.0166* (1.8311)
<i>Size</i>		0.5832*** (37.4989)		0.4062*** (27.0977)
<i>Lev</i>		0.5951*** (5.4098)		0.4625*** (4.6351)
<i>ROA</i>		1.8474***		1.6129***

	(7.6936)	(7.1759)
<i>TobinQ</i>	-0.0023	-0.0048
	(-0.1712)	(-0.3793)
<i>IAR</i>	-0.9159***	-1.0293***
	(-3.5009)	(-4.1671)
<i>Cash</i>	0.6092***	0.2710
	(3.2982)	(1.4997)
<i>Age</i>	0.0623	0.0524
	(1.0866)	(0.9789)
<i>SOE</i>	0.0289	0.0624*
	(0.7685)	(1.7379)
<i>EQU</i>	-0.0456*	-0.0589***
	(-1.8955)	(-2.5956)
<i>IISR</i>	-0.0794	-0.1526**
	(-1.1361)	(-2.2604)
<i>Dual</i>	-0.0287	-0.0266
	(-0.9874)	(-0.9610)
<i>Size_b</i>	-0.0650***	-0.0465**
	(-2.7120)	(-2.0309)
<i>ROA_b</i>	0.0940	-5.9636
	(0.0138)	(-0.9106)
<i>NPL_b</i>	0.0985	0.0413
	(1.6246)	(0.6786)
<i>Age_b</i>	0.0572	0.0038
	(1.5505)	(0.1037)
<i>PKFIIC</i>	0.6112***	0.6588***

		(3.8391)		(4.4440)
<i>Cons</i>	7.8358***	-6.7962***	6.0862***	-4.8258***
	(35.5850)	(-7.9272)	(27.6030)	(-5.8215)
Industry fixed effect	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes
<i>N</i>	4104	4104	4104	4104
<i>Adj R</i> ²	0.3198	0.7659	0.3830	0.6993

Addressing Endogeneity

While we have attempted to control factors that might simultaneously influence the development level of bank fintech and firms' total factor productivity, the empirical results could still be subject to unobserved factors. This omitted variable problem could result in biased estimates of the coefficient for the development level of bank fintech. To address potential endogeneity issues and ensure the reliability of our empirical results, we employ an instrumental variable (IV) approach.

Following Li et al. (2023), we use the average time of the first fintech patent application by banks in the loan bank portfolio corresponding to each enterprise (*APtime*) as an instrumental variable. On one hand, the earlier a bank applies for fintech patents, the more substantial its fintech technology reserved, which has a greater impact on the current development level of bank fintech, fulfilling the relevance requirement. On the other hand, the time of the first fintech patent application by banks does not have a direct impact on enterprise behavior, satisfying the exogeneity condition. Table 5 reports the instrumental variable regression results. Column (1) of Table 5 presents the first-stage estimation results, where the coefficient of *Ptime* is significantly positive at the 1% level, indicating that the earlier banks apply for fintech patents, the higher their subsequent development level of fintech. Column (2) shows the second-stage estimation results, where the positive effect of bank fintech development on enterprise TFP remains significant, consistent with the previous findings.

Table 5: Instrumental Variable Regression: Average Time of First Fintech Patent Application by Banks

Variables	(1)	(2)
	<i>BFintech</i>	<i>TFP_LP</i>
<i>APtime</i>	0.0873***	
	(15.1690)	

$\hat{BFintech2C}$		0.0787*
		(1.8937)
Constant	-30.7703***	-5.1509***
	(-30.9660)	(-3.4998)
Controls	Yes	Yes
Industry fixed effect	Yes	Yes
Year fixed effect	Yes	Yes
Kleibergen-Paap rk LM		178.7278
		[0.0000]
Kleibergen-Paap rk Wald F		229.9043
		{16.38}
N	4,104	4,104
Adj R^2	0.7700	0.7640

Notes:

1. Due to space constraints and to focus on the primary results, the regression results without control variables are presented here.

2. The values in parentheses are t-values, the values in brackets are P-values, and the values in curly braces are the critical values from the Stock-Yogo weak identification test at the 10% level.

Robustness Analysis

Effect of Weight Choice

We are particularly interested in how, given the bank-enterprise relationship, the development level of bank fintech affects enterprise total factor productivity. To establish the connection between bank fintech and enterprise TFP, we use loan amounts as a weighted bridge. We construct variables in the following ways to determine whether the estimated effect of *BFintech2C* on enterprise TFP is due to changes in loan weights or changes in fintech patents.

First, we fix the loan weights. We select the earliest lending bank for each enterprise in the sample and use its loan amount as a fixed weight, considering only changes in bank fintech patents, creating a new variable, *BFintech2Cp*. Second, we fix the number of fintech patents. We fix the number of fintech patents for the earliest lending bank for each enterprise in the sample and consider only changes in the proportion of loans from banks in the loan portfolio,

creating a new variable, BFinTech2Cd. If the regression coefficient of *BFinTech2Cp* is still significantly positive while the regression coefficient of *BFinTech2Cd* is not significant, then the conclusion that the development of bank fintech improves enterprise TFP in the baseline regression is due to changes in the number of fintech patents; if the regression coefficient of *BFinTech2Cp* is not significant, while the regression coefficient of *BFinTech2Cd* is significantly positive, then the improvement in enterprise TFP due to the development of bank fintech is mainly determined by the loan weights. Columns (1) and (2) in Table 6 report the estimation results for *BFinTech2Cp* and *BFinTech2Cd*, respectively. The study finds that *BFinTech2Cp* is significantly positive at the 5% level, while the estimation result for *BFinTech2Cd* is not significant, thus to some extent, excluding the effect of weight choice.

Table 6: Robustness Check: Effect of Weight Choice

Variables	(1)	(2)
	<i>TFP_LP</i>	<i>TFP_LP</i>
<i>BFinTech2Cp</i>	0.0172** (2.1699)	
<i>BFinTech2Cd</i>		0.0009 (0.1094)
<i>Size</i>	0.5813*** (37.5316)	0.5843*** (37.2222)
<i>Lev</i>	0.6015*** (5.4528)	0.5996*** (5.4268)
<i>ROA</i>	1.8439*** (7.7043)	1.8479*** (7.7023)
<i>TobinQ</i>	-0.0019 (-0.1436)	-0.0021 (-0.1512)
<i>IAR</i>	-0.9376*** (-3.5968)	-0.9172*** (-3.5105)
<i>Cash</i>	0.6163*** (3.3368)	0.6080*** (3.2856)
<i>Age</i>	0.0588	0.0651

	(1.0265)	(1.1273)
<i>SOE</i>	0.0282	0.0298
	(0.7494)	(0.7924)
<i>EQU</i>	-0.0470**	-0.0451*
	(-1.9645)	(-1.8760)
<i>IISR</i>	-0.0800	-0.0783
	(-1.1480)	(-1.1179)
<i>Dual</i>	-0.0295	-0.0292
	(-1.0129)	(-0.9979)
<i>Size_b</i>	-0.0520**	-0.0307
	(-2.4887)	(-1.5529)
<i>ROA_b</i>	0.6567	-0.4532
	(0.0970)	(-0.0663)
<i>NPL_b</i>	0.0975	0.0797
	(1.6005)	(1.3053)
<i>Age_b</i>	0.0520	0.0460
	(1.4287)	(1.2592)
<i>PKFHC</i>	0.6238***	0.6147***
	(3.9096)	(3.8463)
<i>Cons</i>	-7.0580***	-7.4666***
	(-8.5940)	(-9.0514)
Industry fixed effect	Yes	Yes
Year fixed effect	Yes	Yes
<i>N</i>	4104	4104
<i>Ajd R²</i>	0.7661	0.7656

Variable Substitution, Adding Fixed Effects, and Control Variables

On one hand, to enhance the robustness of the explanatory variable, this study follows the variable construction method of Li et al. (2023). We use a self-built fintech dictionary to search the abstracts of each bank's patent applications. If the abstract contains fintech-related keywords, we classify the patent as a bank fintech patent. We take the natural logarithm of the identified bank fintech patents and weight them by loan amounts to form the enterprise-level variable BFinTech2Cw. The regression results are shown in Column (1) of Table 7. On the other hand, to reduce the impact of city-level heterogeneity and omitted variables, we add city fixed effects and city-level control variables in Columns (2) and (3) of Table 7 and re-estimate the model. The new test results are consistent with the baseline results.

Table 7: Robustness Check - Variable Substitution, Adding Fixed Effects, and Control Variables

Variables	(1)	(2)	(3)
	<i>TFP_LP</i>	<i>TFP_LP</i>	<i>TFP_LP</i>
<i>BFinTech2C</i>		0.0197**	0.0195**
		(2.0774)	(2.0614)
<i>BFinTech2Cw</i>	0.0212**		
	(2.1521)		
<i>Size</i>	0.5835***	0.5952***	0.5952***
	(37.5298)	(38.4038)	(38.3940)
<i>Lev</i>	0.5995***	0.6501***	0.6512***
	(5.4346)	(6.0174)	(6.0362)
<i>ROA</i>	1.8467***	1.5927***	1.5936***
	(7.6847)	(6.7603)	(6.7791)
<i>TobinQ</i>	-0.0024	0.0052	0.0053
	(-0.1757)	(0.3916)	(0.3933)
<i>IAR</i>	-0.9171***	-0.9110***	-0.9133***
	(-3.4934)	(-2.9647)	(-2.9759)
<i>Cash</i>	0.6110***	0.5615***	0.5606***
	(3.3077)	(3.1448)	(3.1430)
<i>Age</i>	0.0618	0.0672	0.0668

	(1.0799)	(1.1278)	(1.1213)
<i>SOE</i>	0.0298	0.0277	0.0279
	(0.7921)	(0.7248)	(0.7277)
<i>EQU</i>	-0.0456*	-0.0458*	-0.0456*
	(-1.8950)	(-1.9072)	(-1.8986)
<i>IISR</i>	-0.0803	-0.1138	-0.1146*
	(-1.1507)	(-1.6451)	(-1.6508)
<i>Dual</i>	-0.0285	-0.0142	-0.0144
	(-0.9802)	(-0.4944)	(-0.5012)
<i>Size_b</i>	-0.0544**	-0.0570**	-0.0559**
	(-2.4392)	(-2.4693)	(-2.4192)
<i>ROA_b</i>	-0.4503	-4.2246	-4.3785
	(-0.0661)	(-0.6323)	(-0.6549)
<i>NPL_b</i>	0.0974	0.0600	0.0601
	(1.6019)	(1.0441)	(1.0469)
<i>Age_b</i>	0.0489	0.0263	0.0264
	(1.3401)	(0.7239)	(0.7248)
<i>PKFHC</i>	0.6086***	0.1637	0.1473
	(3.8192)	(0.5547)	(0.4963)
<i>GDP</i>			0.0182
			(0.1587)
<i>SecendR</i>			-0.1652
			(-0.4101)
<i>MKT</i>			-0.0296
			(-1.2482)
<i>Cons</i>	-6.9484***	-5.7788***	-5.5650***

	(-8.0910)	(-4.2263)	(-3.5405)
Industry fixed effect	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes
City fixed effect	No	Yes	Yes
<i>N</i>	4104	4104	4104
<i>Adj R</i> ²	0.7659	0.7890	0.7889

Lagging Core Explanatory Variables and Control Variables

To mitigate the impact of reverse causality, this study lags the core explanatory variable and control variables by one period and re-estimates the model. The new regression results, shown in Table 8, remain consistent with the baseline results, indicating that the research conclusions are robust.

Table 8: Robustness - Lagged One Period

Variables	(1) <i>TFP_LP_t</i>	(2) <i>TFP_LP_t</i>
<i>BFinTech2C_{t-1}</i>	0.0650*** (2.9840)	0.0368** (2.1082)
<i>Size_{t-1}</i>		0.5916*** (24.4636)
<i>Lev_{t-1}</i>		0.4229** (2.0469)
<i>ROA_{t-1}</i>		1.8202*** (4.3758)
<i>TobinQ_{t-1}</i>		0.0179 (0.7506)
<i>IAR_{t-1}</i>		-0.7876** (-2.2386)
<i>Cash_{t-1}</i>		0.3732

		(1.1582)
Age_{t-1}		0.1311
		(1.4551)
SOE_{t-1}		0.0118
		(0.2057)
EQU_{t-1}		-0.0723*
		(-1.8328)
$IISR_{t-1}$		-0.1758
		(-1.4683)
$Dual_{t-1}$		-0.0025
		(-0.0522)
$Size_b_{t-1}$		-0.0386
		(-1.0453)
ROA_b_{t-1}		-0.7924
		(-0.0586)
NPL_b_{t-1}		0.0602
		(0.6040)
Age_b_{t-1}		0.0610
		(1.0989)
$PKFIIC_{t-1}$		0.4525*
		(1.9500)
$Cons$	7.7434***	-6.9621***
	(34.1748)	(-5.7864)
Industry fixed effect	Yes	Yes
Year fixed effect	Yes	Yes
N	1713	1713

<i>Adj R²</i>	0.3776	0.7686
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Heterogeneity Analysis

Heterogeneity Analysis Based on Enterprise Ownership Nature

State-owned enterprises (SOEs) in China enjoy unique advantages in the credit market (Gao et al., 2023), whereas non-state-owned enterprises (non-SOEs) face “size discrimination” and “ownership discrimination” in financing processes, often lacking effective financial support (Luo and Ying, 2014), which severely hinders the improvement of enterprise total factor productivity. The enhancement of bank fintech levels can improve banks’ ability to process soft information, increasing the availability of credit to enterprises (Kowalewski and Pisany, 2022), thereby alleviating the problems of lack of credit, information, and trust for non-SOEs, which in turn has a greater impact on their TFP.

We divide the research sample into SOEs and non-SOEs based on enterprise ownership nature. Table 9 presents the subgroup regression results. The study finds that the coefficient of BFinTech2C is significantly positive at the 5% level in the non-SOE sample (Column (2)), while the coefficient of BFinTech2C is not significant in the SOE sample (Column (1)). This indicates that the development of bank fintech primarily enhances the TFP of non-SOEs.

Table 9: Heterogeneity Analysis: Enterprise Ownership Nature

Variables	(1)	(2)
	SOE	NON-SOE
	<i>TFP_LP</i>	<i>TFP_LP</i>
<i>BFinTech2C</i>	0.0180	0.0268**
	(1.1976)	(2.0954)
<i>Size</i>	0.5826***	0.6034***
	(20.4153)	(31.6960)
<i>Lev</i>	0.6651***	0.5829***
	(3.5636)	(4.2140)
<i>ROA</i>	2.1401***	1.6666***
	(4.6900)	(5.8424)
<i>TobinQ</i>	0.0170	0.0058
	(0.4726)	(0.3750)
<i>IAR</i>	-0.8285**	-1.2729***
	(-2.2664)	(-4.1575)
<i>Cash</i>	0.5097*	0.6834**
	(1.8693)	(2.5638)
<i>Age</i>	0.2747***	-0.0319
	(2.6190)	(-0.4573)
<i>EQU</i>	-0.1230***	-0.0084
	(-2.9175)	(-0.2940)
<i>IISR</i>	-0.1003	-0.0150
	(-0.5946)	(-0.1954)
<i>Dual</i>	0.0246	-0.0365
	(0.4341)	(-1.0841)
<i>Size_b</i>	-0.0362	-0.0719**

	(-0.9866)	(-2.2909)
<i>ROA_b</i>	-8.3346	0.9228
	(-0.7138)	(0.1070)
<i>NPL_b</i>	0.0389	0.0990
	(0.4202)	(1.2745)
<i>Age_b</i>	0.0214	0.0457
	(0.3767)	(0.9878)
<i>Cons</i>	-4.9602***	-4.5507***
	(-4.8736)	(-6.4911)
Industry fixed effect	Yes	Yes
Year fixed effect	Yes	Yes
<i>N</i>	1793	2311
<i>Adj R²</i>	0.7744	0.7501

Heterogeneity Analysis Based on the Degree of Enterprise Digital Transformation

The extent to which bank fintech empowers enterprises is influenced by the quality of enterprise information. Enterprise digital transformation can effectively reduce information asymmetry (He et al., 2024) and improve the quality of enterprise information disclosure (Liu et al., 2022). The higher the synergy between bank fintech development and enterprise digital transformation, the easier it is for bank fintech to overcome the limitations faced by such enterprises in traditional financial services, and the more conducive it is to empowering high-quality enterprise development through bank fintech.

We calculate an enterprise digital transformation index based on six indicators: strategic leadership, technology-driven, organizational empowerment, environmental support, digital outcomes, and digital applications. We divide the research sample into two groups according to the mean value of this index: enterprises with a high degree of digital transformation and those with a low degree of digital transformation, and conduct separate regressions. Table 10 presents the heterogeneity regression results based on the degree of enterprise digital transformation. Column (1) represents the group with a high degree of digital transformation, where the regression coefficient of BFinTech2C is significant at the 5% level; Column (2) represents the group with a low degree of digital transformation, where the regression coefficient of BFinTech2C is not significant. This indicates that to fully leverage the empowering role of bank fintech in promoting high-quality enterprise development, both the real industry and the financial industry need to advance digitalization collaboratively.

Table 10: Heterogeneity Analysis: Degree of Enterprise Digital Transformation

Variables	(1)	(2)
	High	Low
	<i>TFP_LP</i>	<i>TFP_LP</i>
<i>BFinTech2C</i>	0.0309** (2.1896)	0.0091 (0.6712)
<i>Size</i>	0.6112*** (28.3207)	0.5422*** (27.3296)
<i>Lev</i>	0.6979*** (4.8795)	0.5342*** (3.7568)
<i>ROA</i>	1.1246*** (3.8297)	2.8086*** (8.4621)
<i>TobinQ</i>	0.0295* (1.8128)	-0.0277 (-1.4929)
<i>IAR</i>	-1.6882*** (-3.5255)	-0.5232** (-2.1350)
<i>Cash</i>	0.9303*** (3.5707)	0.3834 (1.5629)
<i>Age</i>	0.0524 (0.6066)	0.1079 (1.5259)
<i>SOE</i>	0.0302 (0.5896)	0.0653 (1.3133)
<i>EQU</i>	-0.0586* (-1.7821)	-0.0409 (-1.3744)
<i>IISR</i>	-0.1487 (-1.6308)	-0.0191 (-0.2042)
<i>Dual</i>	-0.0198	-0.0330

	(-0.4958)	(-0.8793)
<i>Size_b</i>	-0.0556	-0.0628*
	(-1.6038)	(-1.9288)
<i>ROA_b</i>	-19.1565**	14.4651
	(-1.9719)	(1.5903)
<i>NPL_b</i>	-0.0233	0.1877**
	(-0.2828)	(2.3686)
<i>Age_b</i>	-0.0268	0.0897**
	(-0.4664)	(2.0289)
<i>PKFIIC</i>	0.4103*	0.6860***
	(1.8958)	(3.3888)
<i>Cons</i>	-6.2130***	-6.7135***
	(-5.4715)	(-5.8999)
Industry fixed effect	Yes	Yes
Year fixed effect	Yes	Yes
<i>N</i>	1904	2200
<i>Adj R²</i>	0.7885	0.7661

Heterogeneity Analysis Based on the Degree of Marketization

In regions with a higher degree of marketization, financial intermediaries are more developed, information asymmetry is lower, and the efficiency of credit resource allocation is higher (Hui et al., 2023). As a result, the role that bank fintech can play in improving traditional financial services is relatively smaller in these cities. The private economy is a crucial component of China's economy, playing a vital role in job creation and technology introduction. In this study, we measure the degree of marketization (PEA) using the ratio of annual sales revenue of private industrial enterprises to the sales revenue of above-designated-size industrial enterprises. A higher value indicates a higher level of private enterprise activity and a higher degree of marketization in the province where the enterprise is located.

Table 11 reports the results of the heterogeneity analysis based on the degree of marketization. We divide PEA into two groups based on the mean value: a high degree of marketization group and a low degree of marketization group, and perform separate regressions. The regression results show that the development of bank fintech has improved

the total factor productivity (TFP) of enterprises in both groups. Through inter-group coefficient difference tests, we find that this enhancing effect is more pronounced in the low degree of marketization group, suggesting that the development of bank fintech complements regions with insufficient marketization progress.

Table 11: Heterogeneity Analysis: Degree of Marketization

Panel A:

Variables	(1)	(2)
	High	Low
	<i>TFP_LP</i>	<i>TFP_LP</i>
<i>BFinTech2C</i>	0.0206*	0.0361**
	(1.7282)	(2.5086)
<i>Size</i>	0.5825***	0.6107***
	(32.4436)	(25.1043)
<i>Lev</i>	0.5281***	0.5575***
	(4.4246)	(3.0866)
<i>ROA</i>	1.8107***	1.4652***
	(6.1606)	(3.8713)
<i>TobinQ</i>	-0.0125	0.0171
	(-0.7729)	(0.8248)
<i>IAR</i>	-0.6793**	-1.1760***
	(-2.0839)	(-3.0127)
<i>Cash</i>	0.3730*	0.9642***
	(1.6731)	(3.1704)
<i>Age</i>	0.0555	0.1430
	(0.8401)	(1.4770)
<i>SOE</i>	0.0352	-0.0379
	(0.8639)	(-0.5685)
<i>EQU</i>	-0.0430	-0.0505

	(-1.6412)	(-1.1870)
<i>IISR</i>	-0.1371*	0.0022
	(-1.7034)	(0.0191)
<i>Dual</i>	-0.0606*	0.0331
	(-1.7914)	(0.6860)
<i>Size_b</i>	-0.0823***	-0.0413
	(-2.9027)	(-1.0429)
<i>ROA_b</i>	-5.5133	0.7546
	(-0.7006)	(0.0578)
<i>NPL_b</i>	0.1120	-0.0115
	(1.5546)	(-0.1145)
<i>Age_b</i>	0.0208	0.0686
	(0.4907)	(1.0713)
<i>PKFHC</i>	0.3022*	0.6963**
	(1.7409)	(2.5413)
<i>Cons</i>	-4.6528***	-8.4741***
	(-4.7245)	(-6.0908)
Industry fixed effect	Yes	Yes
Year fixed effect	Yes	Yes
<i>N</i>	2620	1484
<i>Adj R²</i>	0.7870	0.7433
Panel B:		
b[high_PEA]-b[Low_PEA]-]	-0.0155**	
P value	0.0204	

Mechanism Analysis

Bank Fintech, Financing Constraints, and Firms' Total Factor Productivity

Widespread financing constraints (Zhang, 2019; Wu and Huang, 2022) are a primary cause of declines in enterprise total factor productivity (TFP). The development of bank fintech can alleviate information asymmetry, expand credit supply, reduce financing constraints, and lower the risk of term mismatch in corporate financing.

We use the KZ index to measure financing constraints, where a higher value indicates greater financing constraints. Table 12 reports the analysis results of the financing constraint mechanism. In Column (1) of the table, the interaction term between BFinTech2C and KZ is significantly negative at the 5% level, and the regression coefficient of BFinTech2C is significantly positive at the 1% level, indicating that easing financing constraints can promote the improvement of enterprise TFP. To further confirm that this easing effect stems from banks expanding credit scale, we use the natural logarithm of bank loan size at the enterprise-year level as the dependent variable for regression. The regression results are shown in Column (2) of the table, where the regression coefficient of BFinTech2C is significantly positive, indicating that the development of bank fintech promotes banks to expand credit supply. Short-term loans for long-term investment (SFLI) serve as an alternative strategy adopted by enterprises facing external financing constraints (Chen et al., 2023B). Following the method of Frank and Goyal (2004), we construct the SFLI variable, where a higher value indicates a higher risk of term mismatch in corporate financing. Column (3) of the table further examines whether the development of bank fintech helps to reduce the risk of term mismatch in corporate financing. The regression coefficient of BFinTech2C is significantly negative, indicating that the development of bank fintech has a restraining effect on the risk of term mismatch in corporate financing. The above regression results demonstrate that the development of bank fintech can alleviate financing constraints for enterprises, which in turn helps to enhance enterprise TFP.

Table 12: Mechanism Analysis: Bank Fintech, Financing Constraints, and Enterprise Total Factor Productivity

Variables	(1) Financing Constraints <i>TFP_LP</i>	(2) Credit Supply <i>Loan</i>	(3) Short Loan Long Investment <i>SFLI</i>
<i>BFinTech2C</i> × <i>KZ</i>	-0.0055** (-1.9694)		
<i>BFinTech2C</i>	0.0318*** (3.0724)	0.3739*** (14.9709)	-1.7531** (-2.1697)

<i>KZ</i>	-0.0217 (-1.4435)		
<i>Size</i>	0.5826*** (37.6734)	0.5981*** (18.8084)	-41.8621*** (-10.6941)
<i>Lev</i>	0.8411*** (6.4616)	0.9911*** (5.5094)	22.0468** (2.4212)
<i>ROA</i>	1.5956*** (6.4844)	1.1778** (2.4134)	71.8630*** (3.6614)
<i>TobinQ</i>	0.0093 (0.6776)	0.0198 (0.7805)	4.5504*** (5.0306)
<i>IAR</i>	-0.8603*** (-3.3156)	0.5079 (1.0435)	-6.0156 (-0.1608)
<i>Cash</i>	0.0469 (0.1923)	-0.4699 (-1.1395)	-140.6334*** (-6.3226)
<i>Age</i>	0.0644 (1.1301)	0.0454 (0.4040)	16.6641 (1.3483)
<i>SOE</i>	0.0363 (0.9703)	0.0248 (0.3714)	8.7618 (1.4143)
<i>EQU</i>	-0.0468** (-1.9628)	-0.0202 (-0.4149)	-12.8055*** (-3.3645)
<i>IISR</i>	-0.0923 (-1.3234)	0.1171 (0.8248)	-70.9605*** (-7.5546)
<i>Dual</i>	-0.0298 (-1.0310)	0.0341 (0.5690)	-0.5637 (-0.2152)
<i>Size_b</i>	-0.0636*** (-2.6685)	-0.5932*** (-9.9337)	-2.3917 (-0.8062)

<i>ROA_b</i>	-0.2753 (-0.0405)	-6.1908 (-0.3274)	-13.2433 (-0.0159)
<i>NPL_b</i>	0.1002* (1.6649)	0.2716* (1.7948)	8.9116 (1.3746)
<i>Age_b</i>	0.0538 (1.4668)	0.0345 (0.3760)	4.1253 (0.9431)
<i>PKFHC</i>	0.5855*** (3.7079)	-0.4607 (-1.5482)	-35.3195** (-1.9850)
<i>Cons</i>	-6.7233*** (-7.8252)	8.4730*** (4.4171)	159.1990* (1.8043)
Industry fixed effect	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes
<i>N</i>	4104	4104	4104
<i>Adj R²</i>	0.7650	0.4241	0.3069

Bank Fintech, "Moving from Virtual to Real," and Enterprise Total Factor Productivity

The development of bank fintech can optimize the allocation of financial resources, guiding financial resources toward industries and enterprises that align with national strategic development directions, providing stronger support for the rapid development of the real economy.

Table 13 reports the analysis results of the "moving from virtual to real" mechanism. We use the ratio of R&D investment to total assets as a proxy variable for corporate innovation and take it as the dependent variable. In Column (1) of the table, the regression coefficient of BFinTech2C is significantly positive, indicating that the development of bank fintech promotes corporate innovation. In Column (2), we use enterprise financialization (Finhold) as the dependent variable, and the regression coefficient of BFinTech2C is negative and significant at the 5% level; in Column (3) of the table, we take enterprise physical capital investment (PhyCI) as the dependent variable, and the regression coefficient of BFinTech2C is significantly positive at the 1% level. Together, these findings suggest that the development of bank fintech restrains the tendency of enterprises to become more financially oriented and promotes their physical capital investment. Based on the above regression results, our research finds that the development of bank fintech can optimize resource

allocation within enterprises, promote "moving from virtual to real," and thereby enhance enterprise total factor productivity.

Table 13: Mechanism: Bank Fintech, "Moving from Virtual to Real," and Enterprise Total Factor Productivity

Variables	(1)	(2)	(3)
	Enterprise Innovation	Financialization	Physical Capital
	<i>RD</i>	<i>Finhold</i>	<i>PhyCI</i>
<i>BFinTech2C</i>	0.0004 (1.6047)	-0.0033** (-2.3735)	0.0053*** (2.8528)
<i>Size</i>	-0.0003 (-0.7998)	0.0087*** (2.9850)	-0.0038 (-0.9117)
<i>Lev</i>	-0.0029 (-1.1568)	-0.1329*** (-6.7962)	0.0505** (2.1314)
<i>ROA</i>	0.0072 (1.3307)	-0.0651** (-2.0357)	-0.1790*** (-3.7072)
<i>TobinQ</i>	0.0018*** (4.7225)	-0.0023 (-1.1690)	0.0006 (0.1965)
<i>IAR</i>	-0.0067 (-1.3993)	-0.0813** (-2.3142)	0.8557*** (11.0317)
<i>Cash</i>	0.0160*** (3.1994)	-0.0138 (-0.5114)	0.5124*** (10.5723)
<i>Age</i>	-0.0027** (-2.0764)	0.0380*** (4.4340)	-0.0335** (-2.4143)
<i>SOE</i>	-0.0012 (-1.1858)	0.0019 (0.3105)	0.0415*** (4.4937)
<i>EQU</i>	-0.0002 (-0.3390)	-0.0012 (-0.3034)	-0.0034 (-0.5922)

<i>IISR</i>	0.0001 (0.0603)	-0.0008 (-0.0761)	0.0476*** (2.8960)
<i>Dual</i>	0.0005 (0.6832)	-0.0146*** (-3.5983)	0.0051 (0.7123)
<i>Size_b</i>	-0.0005 (-0.8359)	-0.0066* (-1.8965)	0.0251*** (4.3503)
<i>ROA_b</i>	-0.0864 (-0.4585)	-1.2250 (-1.1345)	1.5431 (0.9993)
<i>NPL_b</i>	-0.0023 (-1.4609)	-0.0060 (-0.6797)	-0.0086 (-0.5808)
<i>Age_b</i>	0.0019* (1.9190)	-0.0006 (-0.1033)	0.0011 (0.1166)
<i>PKFIIC</i>	0.0151*** (3.9984)	0.1018*** (4.4675)	-0.2090*** (-5.5794)
<i>Cons</i>	-0.0375* (-1.6732)	-0.5883*** (-5.1106)	1.2825*** (7.0206)
Industry fixed effect	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes
<i>N</i>	3332	4104	4104
<i>Adj R²</i>	0.4596	0.2044	0.6450

Conclusion and Policy Implications

This study utilizes a novel variable derived from bank patent application data for fintech innovations, combined with manually collected micro-level lending data from 2012 to 2021, to empirically assess the impact of bank fintech development on enterprise TFP and its underlying mechanisms. Our findings demonstrate that the advancement of bank fintech significantly enhances enterprise TFP. The robustness of these results has been confirmed through a series of robustness tests and endogeneity checks. The positive impact of fintech development is particularly pronounced in non-state-owned enterprises, firms with a high degree of digital transformation, and in regions with lower levels of marketization. Further

analysis reveals that bank fintech development boosts enterprise TFP by increasing credit supply, mitigating maturity mismatch risks in corporate financing, alleviating financing constraints, optimizing the allocation of financial resources, and encouraging a shift from speculative finance to the real economy.

Based on these conclusions, the following policy implications are proposed:

Government Level: The government should deepen financial supply-side reforms and actively promote the development of a bank fintech system to enhance the role of fintech in boosting enterprise TFP. This can be achieved by gradually liberalizing financial industry regulations, optimizing the market environment, strengthening digital information infrastructure, and facilitating the orderly circulation of data elements. Additionally, the government should provide the necessary technical foundations and institutional support for financial institutions, including banks, to undergo digital transformations and better serve the real economy.

Bank Level: Banks should actively harness the potential of fintech to enhance enterprise TFP and address the issue of "moving from the real to the speculative." This can be achieved by promoting advanced applications such as smart risk control, "privacy computing + blockchain" architecture, and knowledge graphs to improve information identification capabilities. Furthermore, banks should strengthen supervision over the allocation of credit funds, increase the provision of long-term credit to enterprises aligned with national strategic development goals, and address funding allocation imbalances caused by credit discrimination. Utilizing advanced technologies such as big data can enable banks to accurately identify enterprise risks and build a comprehensive digital financial service system that offers both standardized and customized services, providing private enterprises with more equitable access to financial services.

Enterprise Level: Enterprises should capitalize on the synergistic effects of fintech by actively pursuing digital transformation, reshaping business processes, transforming business models, and optimizing organizational structures. To complement these efforts, they should enhance internal disclosure and control mechanisms, actively seek long-term credit funding from banks, and encourage entrepreneurs to focus on their core business rather than short-term gains. By doing so, they can maintain long-term competitiveness through craftsmanship and continuous innovation.

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Long-Term Relationship between Deeper Investment Provisions and FDI Inflows in East African Community.

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ABSTRACT

The objective of this paper is to examine the relationship between deeper trade agreement and Foreign Direct Investment (FDI) flows into the East African Community (EAC). Data was collected from the World Development Indicators (WDI) from 1985 to 2022. applied Autoregressive Distributed Lag Model (ARDL) to determine long and short run equilibrium relationship between the FDI inflows and the multivariate variables applied in this study. Result of the ARDL test showered that equilibrium error correction coefficient (ECM) estimate of -0.79 is highly significant, with the correct sign. This implies a high speed of adjustment to equilibrium after a shock. Approximately 80 percent of disequilibria from the previous year's shock converge back to the long-run equilibrium in the current year. This suggests that approximately 80% of disequilibrium deviations of FDI inflows in East African Community from their optimal level are being corrected. The error correction term also suggests that with an adjustment rate of approximately 80 percent, the speed of adjustment of total FDI inflows in EAC towards long-run equilibrium is satisfying as it stands above 80 percent in the short run. This suggests that the EAC has satisfactory ability to restore the disequilibrium deviation of FDI inflows from their optimal level. However, the coefficient of the lagged error correction terms, and the adjusted speed to restore the equilibrium differ. For instance, while Tanzania, Kenya and Burundi are satisfactory at 57%, 81% and 73%, respectively, it is sufficient to restore the disequilibrium deviation of FDI inflows from their optimal level. This suggests that the three countries have more than 50% ability to restore the long-run disequilibrium of the FDI inflows annually. Uganda and Rwanda have lower than 50% adjustment speed, which means the ability of the two countries to restore the disequilibrium of the FDI inflows on an annual basis is below satisfactory. These imbalances need to be urgently addressed to ensure equitable distribution of benefit.

1.0 Introduction

The establishment of Preferential Trade Agreements (PTA) has become increasingly popular since the setting up of the World Trade Organization (WTO) in 1995. These spikes in PTAs have particularly been accompanied by the widespread establishment of a Regional Trade Agreements (RTA). According to WTO (2011) the number of PTA have increased from 50 in the early 1990's to 377 by the beginning of 2018. On average each WTO member have signed an average of 11 PTA. This change have also been associated with expansive sets of investments provisions which have implication on the investment admission, liberalization and protection and (Mattoo et al., 2020a). Similarly, the change is also meant to expand the scope of the PTA beyond trade cover issues which have been referred in the literatures as deeper trade agreements.

This change in the landscape of PTA, has also come with an increased interest in trying to understand the implications of the formation of PTAs for the inflow of Foreign Direct Investment (FDI) into the region as a whole and to each participating Member. One aspect of particular interest is its relationship to FDI inflows to participating members (Marszk, 2014b). Atsumi (2013) has also pointed out that no country can escape from the systemic effects of PTA with some having either a separate investment chapter like the one with NAFTA or investment provision embodied within the trade provision. The provisions cover for example services chapter, competition policy, intellectual property rights, dispute settlement and standards.

The inclusion of these chapters in the current PTAs indicates that the predominant drivers of these agreements extend well beyond trade objectives, thereby motivating this study to explore their implication on FDI inflows, with PTA often going beyond what countries have committed to the WTO. While tariff preferences are negotiated in all trade agreements, they matter much less today than they did 100 years ago. According to Horn *et al.* (2010), the major reason is that most favoured nations (MFN) have declined over time, with more than half of global merchandise trade having applied to MFN rates of zero. Secondly, more than tariffs, preferential trade agreements today are about regulatory measures and other so-called non-tariff measures that were once the exclusive domain of domestic policy-making.

The East African Community is not immune against this global move, the treat for the second wave of the East African Integration process was signed in year 2000, followed by the custom Union in 2005 and Common Market Protocol in 2009. The monetary Union which is the third pillar of the EAC was also endorsed in 2011. The endorsed of this milestone has made EAC to cross the bridge from shall into deeper integration process. Deeper integration process have been pursued by EAC Partner States as an alternative means to encourage FDI inflows among the participating members. The deeper integration issues have been associated with a sets of expansive investment provisions, which describe the manner in which the investment admission, promotion, and protection. Similarly DTA give signal to the deeper commitment made the EAC Partner States. Kennedy, (2014), integration have expanded with the reduction of investment barriers and inclusion of investment provision in the existing treaty and protocols, similarly investment issues have been covered in the services chapter indicated in

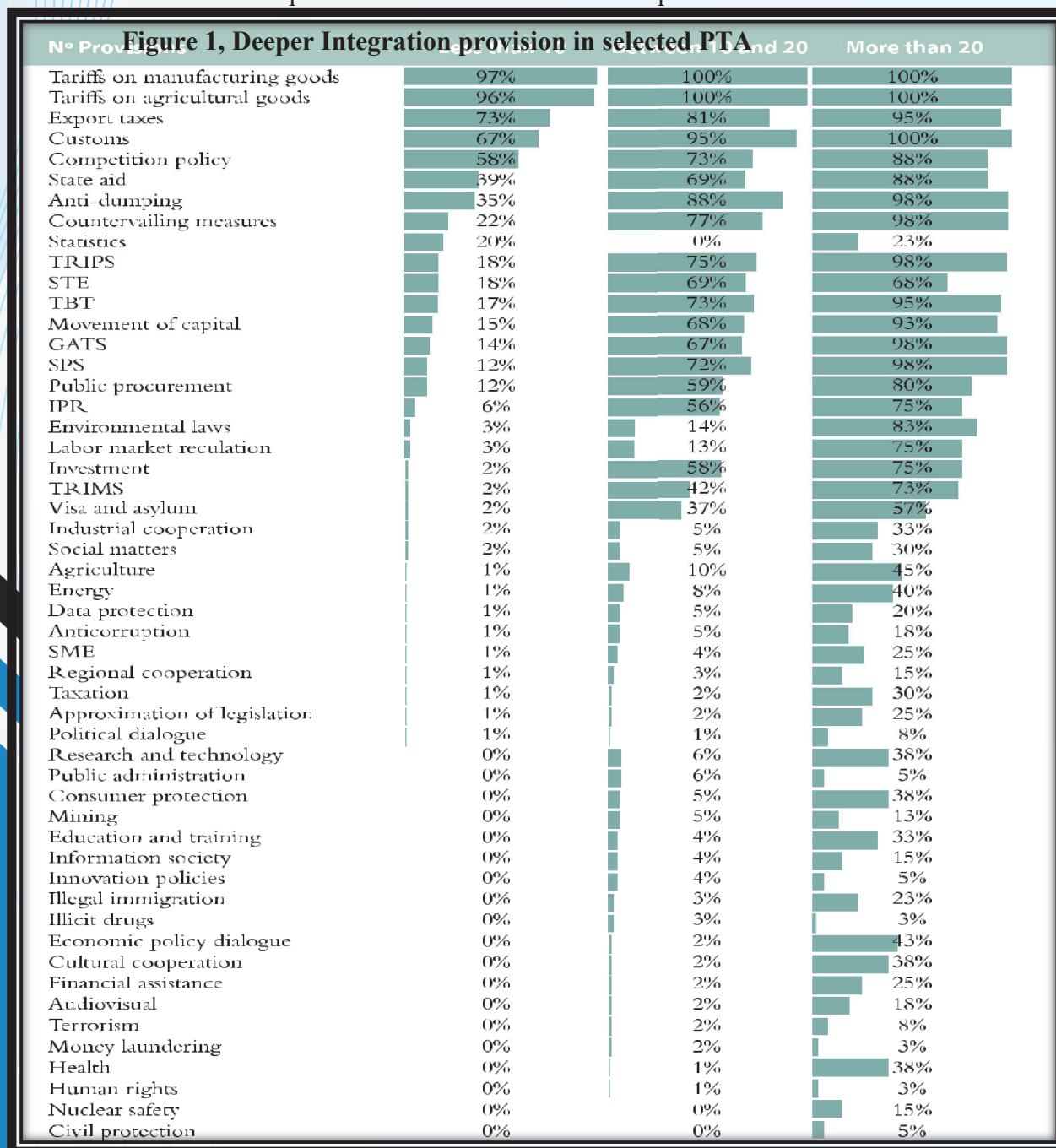
the common market protocol. Investment chapter laydown the mechanism investment promotion, admission and protection in the EAC.

However the impact of Deeper integrations provisions is less straightforward, trade and FDI can either compliment or substitute each other, depending on the investment motivation, the specific industry and on the way in which the FDI provisions are shaped in the PTA Schuman, R (2019) has suggested that horizontal FDI occurs when firms replicate domestic activities in a foreign country are associated with FDI substituting for trade. Hence in the presence of horizontal FDI, PTAs are expected to decreases FDI. On the other hand vertical FDI occurs when firms split activities between different geographical regions, create complimentary relationship between trade, PTA and FDI.

The objective of this paper is to investigate the extent to which the inclusions of the deeper integration issues in the PTA and its implication to FDI inflows to participating Countries. What effects will the DTA have from the perspective of a south- south FTA, how will it affects FDI inflows from the rest of the world? Should we expect to see winners and losers? More specifically the paper will employ Autoregressive Distributed Lag Model (ARDL) to examine the long-term relationship between the deeper integration issues in the East African Community and FDI inflows for the period 2000 to 2020 using data from the world development indicator (WDI).

2.1 Evolution of the Deeper Integration provisions in various PTA.

Table 1 below provides some of the investments provisions included in selected PTAs.



The comparison of figure 1 and 2, below, highlight that most of the DTA covered by the PTA involving developed Countries are also the topical policy issues covered in African PTAs. Which also suggest that this new landscape of the PTA have been the Global phenomenal.

Figure 2, Deeper Integration provision covered by African RTA

	East African Community (EAC)	Common Market for East and South Africa (COMESA)	South African Development Community (SADC)	Economic Community of West African States (ECOWAS)	West African Economic and Monetary Union (WAEMU)	South African Customs Union (SACU)	Economic and Monetary Community of Central Africa (CEMAC)	African Continental Free Trade Area (AfCFTA)
Tariffs on manufactured goods	✓	✓	✓	✓	✓	✓	✓	✓
Tariffs on agricultural goods	✓	✓	✓	✓	✓	✓	✓	✓
Export taxes	✗	✓	✓	✗	✓	✗	✓	✓
Customs	✓	✓	✓	✓	✗	✓	✗	✓
Competition policy	✓	✓	✓	✗	✓	✓	✓	✓
State aid	✓	✓	✓	✗	✗	✗	✓	✗
Antidumping	✗	✓	✓	✓	✗	✗	✓	✓
Countervailing measures	✗	✓	✓	✗	✗	✗	✗	✓
STEs	✗	✗	✗	✗	✗	✗	✗	✓
TBTs	✓	✓	✓	✗	✗	✓	✓	✓
GATS	✓	✓	✓	✓	✓	✗	✓	✓
SPS measures	✓	✓	✓	✗	✗	✓	✓	✓
Movement of capital	✓	✓	✗	✓	✓	✗	✓	✓
Public procurement	✓	✗	✗	✗	✗	✗	✗	✗
IPRs	✓	✗	✗	✗	✗	✗	✗	✓
Investment	✓	✓	✓	✗	✗	✗	✗	✓
Environmental laws	✓	✓	✗	✓	✗	✗	✓	✗
Labor market regulations	✓	✓	✗	✗	✗	✗	✗	✗

Source: Based on Hofmann, Osnago, and Ruta (2017).

Note: ✓ = policy area covered; ✗ = policy area not covered; AfCFTA = African Continental Free Trade Area; GATS = General Agreement on Trade in Services; IPRs = intellectual property rights; PTAs = preferential trade agreements; SPS = sanitary and phytosanitary; STEs = state trading enterprises; TBTs = technical barriers to trade.

Source: UNECA (2022)

According to figure 1 and 2 above, the majority of new agreements covered fewer than 10 policy areas. Since the 2000s, most new PTAs have covered between 10 and 20 policy areas, with some having even more than 20. A study by Horn et al. (2010) identified up to 52 policy areas that have been covered by at least one of the agreements. Agreements with broader coverage between 10 and 20 policy areas tend to include trade-related regulatory issues, such as subsidies or technical barriers to trade. Finally, agreements with more than 20 provisions often include policy areas that are not directly related to trade, such as labor, environment, and movement of people.

However a study by the Mattoo et al., (2020b) covered policy areas which are frequently covered by the new generation PTA which includes (a) a set of 18 policy areas that are covered in 20 percent or more of trade agreements notified to the WTO. (b) tariffs on industrial and agricultural goods, which are covered by all trade agreements; (c) customs and export taxes, which are regulated in more than 80 percent of PTAs; (d) services and movements of capital, which are regulated in roughly half of the PTAs; and (e) environmental and labor issues, which are covered by around 20 percent of all trade agreements. Other issues that are sometimes

(although infrequently) regulated in trade agreements, such as education, nuclear safety. Similarly DTAs also include policy areas that aim to support these economic integration rights by limiting government discretion. Actions by importing governments that limit international flows can be taken at the border and behind the border and are often of a regulatory nature. The policy areas that fall in this category are: (a) customs; (b) rules of origin; (c) trade remedies; (d) public procurement; (e) technical barriers to trade (TBT); (f) sanitary and phytosanitary measures (SPS); (g) state-owned enterprises (SOEs); (h) subsidies; and (i) competition policy.

Furthermore, DTAs cover policy areas that aim to enhance social or consumer welfare by regulating the behavior of exporters. Policy areas such as environment and labor impose obligations on exporters to further consumer or social interests in importing countries. Rules in areas such as competition, SOEs, and subsidies can have a dual aspect: in addition to regulating action that undermines economic integration rights, they can aim to address distortionary actions that lower economic efficiency, thus hurting consumer or social welfare.

The proliferation of the DTA in the second generation PTA have emerged with some difficulties at the empirical level on how the current setting of PTA would be estimated and measured. This difficulties arises from the fact that some policy areas are inherently more complex than others and their description requires a larger number of questions to reflect the more detailed provisions. While other policy areas focus primarily on substantive provisions: specific commitments on integration, such as market access commitments, and specific obligations such as harmonization of standards. Others tend to have a larger number of procedural provisions, such as transparency provisions and procedural requirements. As highlighted by Michele Ruta (2022) the heterogeneity across policy areas have also associated with methodological issues on the proper estimation of the DTAs.

2.0 The Link between Deeper Integration and FDI inflows

Literature has addresses the link between Deeper integration and FDI, in key main aspect, through horizontal and vertical integration. However a study by (Mulabdic et al., (2017) the inclusion of DTA issues tend to alter the macroeconomic environment where firm operate by strengthening fiscal discipline , macroeconomic stability and the rule of law in the host country which create a more favourable conditions for FDI. Similarly the World Bank et al., (2018) indicated that there are two channels through which regional integration through the formation of a Preferential Trade Area (PTA) could influence the inflow of FDI into the integrating region. The first channel is through economic liberalisation by dismantling barriers to free movement of goods, capital and services. The rationally behind this channel is that deeper integration process is associated with macroeconomic convergence, the idea is that once a countries enter into a free trade agreement, economic convergence among key macroeconomic variables will begin to occur due to the catch-up effect on technology transfers, increased labour and capital productivity among other factors. According to Solow (1956) growth model as quoted in (Solow, 2007) an economy will converge towards it steady state because of diminishing returns to investment in physical capital.

This channel is more effective in promoting FDI when the PTA integration process moves from a customs union to a single market and eventually to political federation and includes some provisions for capital movements. The second channel is through inclusion of a set of investment promotion provisions in the integrating treaties or outright treaties on investments to provide a predictable policy and regulatory frameworks for FDI inflows.

Therefore, the main link between FDI and PTAs is mainly derived from the effect of the agglomeration effects. The agglomeration tends to reduce trade cost, which, within the context of this study, has been referred to, and regarding reduction of the integration risk, the study has classified the integration risk into political risk, economic risk and financial risk. The reduction of these risks tends to broaden market access and improve economic and policy credibility to members participating in a PTA, hence the reduction risk tends to influence FDI inflows into the PTA as a whole and to a specific member in particular. This is one additional reason why further integration through the creation of a PTA is currently the key driver of FDI inflows to developing countries.

Evidence from UNCTAD (2013) demonstrates that FDI has a close relationship with the process of PTAs. PTA influences FDI by extending the effective size of the market through participating countries. Equally important, PTA tends to strengthen the investment climate for investors from outside the region. Anderson (2016) also argues that the major motivation for pursuing regional economic integration in the EU has been to facilitate restructuring or rationalisation of industry across the region on the most efficient basis for the purpose of reaping the economies of scale as well as strengthening the competitiveness of each country's industries. It follows that the formation of the single market in the EU has increased its share of the global FDI from nearly 30 percent in the 1980s to about 50 percent in the 1990s and has remained at that level. A sharp rise of FDI inflows has been prominent in Mexico since becoming a part of NAFTA, and the value of FDI inflows has increased from US \$ 12 billion per year in 1992 to 1993, to US \$ 54 billion during the period 2000 to 2002 (Akin & Kose, 2007).

Globerman and Shapiro (2008) have a different view with regard to the role of the market size following the formation of the PTA. They pointed that following accession, the individual member's market size may no longer be a limiting factor, since the PTA pact increases the size of the country and the entire PTA may be accessed from any member country. This postulation may be possible depending on the location advantage of the country in a PTA, and the quality of the institutional structure; for example, a landlocked country in a PTA like Rwanda in EAC. Consequently, a firm that has established itself in Rwanda will face many difficulties to access the entire EAC market, and this would be possible for Tanzania and Kenya.

Kawai and Naknoi (2015) studied aggregate FDI flows to Mexico and other Caribbean countries from 1980 to 2000 and used time series analysis of Mexican economic indicators as well as inter-sector, inter-regional and international comparisons. They found that the expectation of joining a PTA in the next two years is associated with a one-third increase in FDI flows. The study concluded that the NAFTA treaty has helped Mexico get closer to the levels of development of its NAFTA partners. The study suggested further that Mexico's global export would have been about 25% lower without NAFTA, and FDI would have been about

40% less without NAFTA. Additionally, the amount of time required for Mexican manufacturers to adopt US technological innovations was cut in half.

It follows that when a country enters into an RTA, trade and non-trade barriers are eliminated among the partner countries, which opens room for a tariff-jumping FDI to other parts of the world. But this outflow may not happen if the FDI is targeted to exploit intangible assets such as technological and marketing expertise present in the host country. The formation of PTA results in the aggregation of the market among the PTA members into a single market, which tends to attract large scale FDI inflows. This relationship is not straightforward as sometimes the formation of the single market could result in the reduction of FDI from outside the region if they are substitutes to each other.

When two countries agree to form FTA, a fall in trade cost benefits vertical FDI and there will be a less tariff-jumping incentive for horizontal FDI. The skill level in the RTA partners is a very important determinant of the FDI flows. FTA should have a positive effect on FDI where the difference in skill level among the member countries is large and should have a negative effect on FDI when the difference in skill level is small. In addition to this, factors such as the scope of the RTA, the degree of liberalisation, complementarity of members relative to non-member countries, exclusive investment chapters and whether trade and FDI are substitutes or complements influence the quantum of FDI flow from home country to host country.

The positive effect on FDI inflows from outsiders is likely to arise from the size of the market being created as a result of the formation of the PTA. This, in turn, generates increasing returns to scale and makes larger markets a more profitable investment opportunity than smaller markets. The market size effect applies mostly to market-seeking FDI, although vertical FDI (driven by a cost reduction motive) may also be stimulated if the output is destined for other members of the PTA.

Interregional FDI may also increase if the average level of external protection increases or is expected to increase as a result of the RTA. Regarding intra-regional FDI, the lowering of internal tariffs tends to reduce the incentives for tariff-jumping FDI, but on the other hand, facilitates vertical FDI that delocalises the production process to countries with the best location advantages. Intra-regional FDI motivated by the exploitation of intangible assets should not be negatively affected by the lowering of internal tariffs. Finally, the significant efficiency benefits brought about by an RTA may feed into higher growth rates and possibly more R&D, which would further stimulate both interregional and intraregional FDI IMF (2017).

Therefore, the link between FDI and PTAs is mainly derived from the effect of the aggregation of member state markets into a single market. This aggregation tends to reduce trade cost, broaden market access and improve policy credibility for individual economies. This is one additional reason why further integration through the creation of a PTA is also expected to promote FDI. Athukorala (2013) in this regard proposes two kinds of FDI that would suit this description, horizontal investment or market-seeking FDI (HFDI) and vertical or efficiency-seeking FDI (VFDI). Horizontal FDI reduces trade cost for multinational enterprises (MNEs) by eliminating transport cost of exporting goods from one country to another because MNEs produce the same goods or services in different countries or locations. VFDI, by contrast, fits

to MNEs that like to fragment production of goods into a number of stages to improve efficiency. According to Athukorala (2013), HFDI can promote intraregional trade through enlargement of markets. Trade between countries in the same region may further increase if member economies have similarities in income and demand, but diversity in preferences. The author indicates that formation of a RTA or regional trading agreement can attract HFDI inflows by creating incentives for new investments. Head and Mayer (2013) have also added that liberalisation of the economies in the same region may expand markets and therefore facilitate better utilisation of resources, which benefits the HFDI regimes of all member states. On the other hand, RTAs among developing countries have limited impact on intraregional VFDI flows because members have similar factor endowments. However, VFDI may take place in the case of economic integration among developing countries that have differences in stages of development.

The other potential regional integration linkages on FDI are linked to the dynamic effects of degree of competition, high efficiency of resources allocation and accelerated economic growth, which is exalted by the creation of PTAs (Petroulos, 2007). The creation of monetary integration is the third stage of the PTA process linked to the reduction of exchange rate volatility. By reducing related transaction costs, the monetary integration tends to boost FDI inflows. Di Mauro (2000) argues that the net effect of a monetary union on FDI is unclear before the creation of said monetary union. From the theoretical framework above, the relation between PTAs and FDI is neither self-evident nor straightforward. This is because the decision for foreign investment depends upon many factors including economic, social and political ones. The extent that Tanzania will be the best location of FDI choice relative to other EAC countries will depend on the extent to which Tanzania has integrated EAC investment policy change in relation to other EAC countries. The choice will also depend on the opportunity through which Tanzania will realise from the PTAs due to the aggregating individual country market into a PTA market and additional economic growth associated with PTA formation. The aggregated market will enhance investment climate, stimulate investment inflows, enlarge export market, increase competition and allow countries to exploit economies of scale as permitting them to specialise in production of goods and services best suited to their resources and factor endowment (Domazet & Marjanović, 2017).

4.0 Methodology

This study examines the relationship between the EAC Integration process and FDI inflows in Tanzania. Both short and long-run relationship have been estimated. This study has employed several econometrics methods being pooled mean group, and mean group. The impact of a change in FDI inflows is also analyzed using panel ARDL method. The data was collected from multiple sources such as the World Development Indicators, UNCTAD, Transparency International and the Heritage Foundation. Table 4 presents all the variables used in the study, sources of data and their expectations. Our dependent variable is foreign direct investment inflows of Tanzania. Control variable for fundamental regional integration process, includes, Openness index which provide the extent to which policy have been liberalized and harmonized in the EAC, Aggregate GDP for the EAC Countries which signal about the market size created

by the EAC integration process., similarity index which give a picture as to whether FDI tend to receive similar or differentiated FDI. Per capital differences measure the extent to which FDI inflows in EAC is based on the factor endowment or is due to efficiency created by the EAC integration process.

Table 4: Definition of Variables and Sources.

Variable	Measurement	Source	Exp Sign
FDI	FDI inflows of Tanzania	UNCTAD	+
Level of liberalization done by EAC Partner states	Openness Index	WDI	+
Market Size	Aggregate GDP for the EAC Countries	WDI	+
Stability	GDP per capital for the EAC Partner States	WDI	+
	Interest rate		
Inflation	Consumer price index	WDI	-
Infrastructure	Gross fixed capital formation	WDI	+
Capital Formation	Capital formation to GDP	WDI	+
Human Capital			
Quality of Labour Force	Secondary School leavers	WDI	+
Investment Climate	Return on Investment	WDI	+
	Broad money	WDI	+
Nature of FDI inflows of Tanzania from EAC	Per capital Differences for the EAC Partner States	WDI	+
	Similarity Index for the EAC Partners States	WDI	+

Source: Author Formulation.

4.1 Panel Autoregressive Distributed Lag (ARDL) Estimation Method

Pesaran et al. (2000) and Ditzgen (2018) discuss various models for testing long run relationship in panel data models. Their work compares and acknowledges the relevance of various panel models such Autoregressive Distributed Lag Model (ARDL) and Cross Sectionally Distributed lag (CS-DL) panel models; the Dynamic panel OLS; the Full Modified Dynamic OLS (FM-OLS) and a pooled mean group (PMG) in capturing cross-sectionally dependent errors in heterogeneous panels. In this paper, we adopt a Pooled Mean Group panel ARDL model from the grounds that; it takes care of unobserved cross-sectional factors (H. Pesaran *et al.*, 2015); the model, while confining sameness of long run coefficients, it allows for heterogeneity of short run coefficients across countries and the model is not only appropriate with relatively large sample size but also it gives consistent estimates when the panel data has variables integrated at different levels, preferably variables at I(0) and I(1), (Asghar & Nadeem, 2015; Onuoha, Okonkwo, & Okoro, 2018).

When conducting panel ARDL model estimation, firstly we need to carry out three steps, namely model definition, descriptive statistics and correlation test. As mentioned earlier in this study, we should go straight to unit root test and selection of optimal lag length. And then, the cointegration test is considered, which helps us to observe the long-term relationship between the main variables. The second is the Hausman test, which can help us to choose the best analysis method among mean group (MG), pooled mean group (PMG) and dynamic fixed effects (DFE). Finally, we need to estimate the model and organize the causality test.

More specifically, the autoregressive distributed lag (ADRL) form proposed by Pesaran and Smith (1995) is as follows. :

$$\Delta y_t = \alpha_0 + \gamma Y_{t-1} + \gamma_2 X_{t-1} + \gamma_3 Z_{t-1} + \sum_{i=1}^n a_{2,i} \Delta X_{t-i} + \sum_{i=1}^n a_{3,i} \Delta Z_{t-i} + \mu_t$$

$$i = 1, 2, \dots, N; t = 1, 2, \dots, T \dots \dots \dots (1)$$

The term α_0 represents the constant term, also the terms γ_i and α_i represent the long-term and short-term coefficients, respectively. In addition, in the specific example, it is possible to include other determinant variables such as the time variable, various pseudo-variables and additional extraneous terms, with a certain number of time lags. Subsequently, the next statistical check follows:

$$H_0; \gamma_1 = \gamma_2 = \gamma_3 = 0 \dots \dots \dots (2)$$

$$H_1; \gamma_1 \neq 0 \text{ or } \gamma_2 \neq 0 \text{ or } \gamma_3 \neq 0 \dots \dots \dots (3)$$

In the case where in the above statistical control the null hypothesis is rejected, this lead us to the conclusion mean that there is a cointegration relation to the variables of the model, whereas, if we accept the null hypothesis, we accept that there is no cointegration. Also, F-statistic is used to perform the test, which is modified by Pesaran Shin and Smith in 2001. Furthermore, they calculated necessary critical values against the number of variables and also calculated the case where a constant term or time trend is included in the model. The critical values calculated are displayed in the form of a detailed interval. The lower end of the space is based on the fact that the variables are I(0), ie they have a zero order of completion while the upper end is based on the fact that the variables are I(1) ie are completed first degree.

Therefore, three different cases can arise from F-statistics. The first case much arises is F-statistic to be smaller than the lower end then we accept the null hypothesis from which it implies that there is no coincidence. The second case that may occur is that F-statistic arises larger than the upper end and therefore, the null hypothesis is rejected, so the result is that there is a coincidence. In the third and final case where the F statistic is between the two extremes, the fact that is reached requires a further investigation of the issue. The next step is to select the best ARDL model that is best suited to data based on specific criteria, such as the Akaike criterion, the Schwarz criterion, and the Hannan and Quinn criteria. In the next relationship we have the general form of an ARDL model (ρ, q_1, q_2) to declare time lags, so we have:

$$Y_t = \beta_0 + \sum_{i=1}^{\rho} \beta_{1,i} Y_{t-i} + \sum_{i=0}^{q_1} \beta_{2,i} X_{t-i} + \sum_{i=0}^{q_2} \beta_{3,i} Z_{t-i} + \varepsilon_t$$

.....(4)

Further, the long term coefficient are the following

$$a_0 = \frac{\beta_0}{1 - \sum_{i=1}^{\rho} \beta_{1,i}}, a_1 = \frac{\sum_{i=0}^{q_1} \beta_{2,i}}{1 - \sum_{i=1}^{\rho} \beta_{1,i}}, a_2 = \frac{\sum_{i=0}^{q_2} \beta_{3,i}}{1 - \sum_{i=1}^{\rho} \beta_{1,i}}$$

.....(5)

With a_0, q_1, q_2 to represent long term coefficients, finally, we calculate the estimates of short-term coefficients by creating the appropriate error correction model as a function of the excellent ARDL found previously so the model will take the following form:

$$\Delta Y_t = \sigma_0 + \sum_{i=1}^{\rho} \delta_{1,i} \Delta Y_{t-i} + \sum_{i=1}^{q_1} \delta_{2,i} \Delta X_{t-i} + \sum_{i=1}^{q_2} \delta_{3,i} \Delta Z_{t-i} + \xi ECT_{t-1} + \varepsilon_t$$

.....(6)

The error correction term is represented by the ECT_{t-1} and the coefficient ξ represents the adjustment factors in equilibrium after an exogenous shock.

Since the ARDL model has an autoregressive structure, the model needs to be dynamic and relatively stable. This means that the inverse roots of the feature equation associated with the model are strictly within the unit circle. When this prerequisite is met, bounds testing can be performed. According to Pesaran et al. (2001), only when bound testing provides a cointegration conclusion can the long-term equilibrium relationship between variables be predicted.

One of the most benefits of panel ARDL method is that it can contain both integrated I(0) and I(1) variables, but it must not have I(2) in the regression. In order to overcome the potential multicollinearity and the high degree of autocorrelation between variables, all the variables related to currency or money in this paper are natural logarithms. In addition, this paper uses the Im, Pesaran and Shin (IPS) method for unit root testing, which assumes that the variable has heterogeneous slopes, which is more in line with the actual situation of the data. Meanwhile, the time trend of variables will not be included in the unit root inspection process. The unit root test results are shown in Table 3 (where is Table 3? below. All variables are stationary under the condition of I(0) or I(1). For logarithm of GDP (LnGDP), it is not significant at the significance level of 0.05 but significant at the significance level of 0.10, and

its $I(1)$ is very "nonstationary". Therefore, $\ln GDP$ is included in the $I(0)$ stable group in this paper. The panel unit root test results for all the groups is presented in the Table 21 below (where is Table 21?). After examining the stationarity of the variables involved in the study, an attempt was made to figure out the level of co integration between the examined variables, i.e., those tied in a long-run relationship. Co integration Test is conducted to determine the long-run economic relationship between the variables (Thomas, 1993).

4.2 Unit Root Test

Smeeke and Wijler (2020) argued that time series behaviors of an individual variable should be well approximated. This is important since if the series has a unit root, it will not be stationary and its mean and variance might be changing over time eventually the OLS will not apply. Additionally, running a model with non-stationary variables yields bogus results that are difficult to interpret and fail to conform to the basic assumptions of a linear regression model. To minimize the non-stationary in panel variables, transforming of the variables is very crucial. Therefore, the need for testing whether panel variables are stationary or non-stationary is essential and determination of the order of integration for each time panel variable is required.

Breitung & Pesaran, (2005) indicated that to test for panel unit root test the first test is the Levin, Lin and Chu (LLC test) which has appeared to be most popular in the panel unit root test. Levin and Li in 1992 developed one of the first unit root test of panel data which Levin and Li first presented this test in a paper which created in 1992 and finally published in 2002 with Chu as a co-writer (Levin, Li & Chu, 2002). This abbreviation of this test is LL, is referred from the initials of their names of the first two authors. It is also worth noting that the event Levin and Li adopted a test that can be regarded as an extension of DF unit root test. The reason for the choice of this test is the fact that it is based on the ADF principle. Furthermore, LLC test assumes homogeneity in the dynamics of the autoregressive (AR) coefficients for all panel members. Concretely, LLC test assumes that each individual unit in the panel shares the same AR (1) coefficient, but allows for individual effects, time effects and eventually a time trend. Lags of the dependent variable may be introduced to allow for serial correlation in the errors. The test may be viewed as a pooled Dickey-Fuller test, or an Augmented Dickey- Fuller (ADF) test when lags are included, with the null hypothesis that of non-stationary ($I(1)$) behaviour.

The second applied unit root test will be Im, Pesaran and Shin (IPS) test, which is heterogeneous panel unit root test based on individual ADF test. Im et al. (2003) proposed this test as a solution to the homogeneity issue. The test allows for heterogeneity in both the constant and slope terms of the ADF regression. In the study of Asterios (2006), it is referred that the LL test has a major disadvantage that limits the p to be homogeneous for all i . The test is expounded by Im, Pesaran and Shin (1997), allowing for heterogeneity in the coefficient of $Y_{i,t-1}$ variable and as a main test is suggested the average of the individual unit-root test statistics. Simultaneously, the IPS test has different estimates for each i section, where different specifications are allowed of the parametric values, the residual variance and finally the lag lengths. Because of the disadvantage of the LLC test and the nature of this study that my panel data have some gaps then LLC is not recommended rather, hence because of the gaps

in my panel IPS test is the most recommended test. Table 5. Presents the results of the Unit Root Test.

Table 5 : Result of the Unit Root Test

		Summary Statistics	P-Value	Test for Unit Root in level
Ho: panel data has unit root(not stationary)			Ha: panel data has not unit root (stationary)	
Dpcidiff	Per capital differences between Tanzania and her Trading Partners in EAC	-7.789653	0.000	I(1)
Dfditz	Tanzania FDI Inflows	-1.400	0.000	I(0)
Dopenei	Openness Index of Tanzania in EAC	-6.1479	0.000	I(0)
Dregyij	Aggregate GDP for the EAC Partner States	-5.0938	0.000	I(0)
Dinteri	Interest Rate of Tanzania	-5.3080	0.000	I(1)
Dinterj	Interest Rate of Trading Partners in EAC	-4.8795	0.000	I(1)
dsimindex	Similarity Index	-2.6155	0.045	I(0)
Dlnpincj	Relative Factor Endowment	-4.0386	0.000	I(0)
Logygj	Per Capital Growth Rate of Tanzania Trading Partner in EAC	-16.5299	0.000	I(0)
Logygi	Per Capital Growth Rate of Tanzania	-4.9377	0.000	I(1)
Dopenej	Openness Index of Tanzania in EAC	-6.1941	0.000	I(1)

Table 6 : Result of Short and Long Term Relationship

D.logfditz	Coef.	Std. Err.	Z	P>z	[95% Conf.	Interval]
Long run relationship						
__ec						
logopenei	1.465083	0.451638	3.24	0.0010	0.579889	2.350277
loginteri	-1.02215	0.520434	-1.96	0.0500	-2.04218	-0.00212
logsimindex	40.01239	3.997168	10.01	0.0000	32.17809	47.8467
loginterj	-0.6336	0.201053	-3.15	0.0020	-1.02766	-0.23954
dlogregyij	-2.68203	0.710488	-3.77	0.0000	-4.07456	-1.2895
dlogopnessj	-6.41329	1.685625	-3.8	0.0000	-9.71706	-3.10953
dlogrritz	13.54488	1.854236	7.3	0.0000	9.910641	17.17911
dlogpcidiff	7.727192	1.784758	4.33	0.0000	4.229131	11.22525
Error Correction model						
SR						
__ec	-0.56756	0.14067	-4.03	0.0000	-0.84327	-0.29185
Short term Relationship of each Variable						
logopenei						
D1.	-0.85809	1.099453	-0.78	0.4350	-3.01298	1.296794
Loginteri						
D1.	-0.71824	0.140975	-5.09	0.0000	-0.99455	-0.44193
logsimindex						
D1.	15.48486	13.61854	1.14	0.2560	-11.207	42.17672
Loginterj						
D1.	0.047739	0.091767	0.52	0.6030	-0.13212	0.227598
dlogregyij						

D1.	6.954678	4.998795	1.39	0.1640	2.84278	16.7524
dlogopnessj						
D1.	2.009653	0.922032	2.18	0.0290	0.202504	3.816803
dlogrritz						
D1.	-3.5745	1.348266	-2.65	0.0080	-6.21706	-0.93195
Dlogpcidiff						
D1.	-1.97301	0.745622	-2.65	0.0080	-3.4344	-0.51162
_cons	-1.42492	6.683332	-0.21	0.8310	-14.524	11.67417

Since the main focus of this research project was to establish the relationship of the regional integration on FDI inflows in EAC, with FDI inflows in Tanzania as the dependent variable. Hence to Tanzania automatically enters the autoregressive distributed lag model as an explained variable. As explained earlier in this section, tests of stationary indicated presence of a mix of orders of integration among variables where some were found to be integrated of order zero and others of order one after first differencing. According to theory as discussed above, if such a mix of order of integration is detected then an autoregressive distributed lag modelling becomes an appropriate data generating process (DGP) which can best work in $I(1)$ variables. The model estimation was then run using STATA statistical software and the results which separately displays short and long run relationships between FDIs and the other variables are presented in the above table.

As is customary, the error correction equation which captures short run dynamics among variables is extracted and presented below.

Error Correction Model

$$D \log FDI_i = -0.57 D \log FDI_i - 0.86 \log open_i - 0.72 \log int er_i + 15.49 \log se \min dex_{ij} + int er_j + 6.96 d \log regy_{ij} + 2.01 d \log openes_j - 3.58 d \log rri_{ij} - 1.97 d \log pcidiff + \varepsilon$$

.....(7)

As evident in the ECM above, the results indicate that approximately 57% of disequilibrium deviations of FDI inflows from their optimal level are being corrected. The error correction term also suggests that with an adjustment rate of approximately 57 percent the speed of adjustment of FDI towards long run equilibrium is satisfying as it stands above 50 percent. In the short run, Tanzania interest rate is found to negatively cause FDI inflows to Tanzania. One unit decrease in interest rate in Tanzania is expected to attract more FDI by nearly 72%. This result was expected since theoretically the two are expected to move in opposite directions.

An increase in interest rates on capital loans are more likely to discourage current and prospective investors from desiring to borrow for investing. Not surprising, interest rates in the Other EAC Partner States positively causes more inflows. Similarly Increase in interest rates in EAC Partner states will cause potential investors in the Region. Aggregate Gross domestic product in all the countries of the block, Tanzania inclusive, show positive causality with FDI inflows to Tanzania in the short run, which is not something of a surprise, since for example, within a country, an increase in aggregate GDP is theoretically more likely to cause increases in government public expenditures, increase in employment opportunities, resulting in increased aggregate demand providing an expanded market place for new or potential investments.

As might have been expected, lending rates (*rri*) in Tanzania are found to negatively cause FDI in the same country. A one unit increase in lending rates in Tanzania leads to FDI inflows to fall by approximately 36% on average. Like interest rates, lending rates in the rest of the countries of the block moves in opposite directions with the Tanzania FDI inflows. An increase in the lending rates in partner countries are found to be likely to attract more FDI to Tanzania. Per capita difference is in the short run negatively related to the FDI inflows to Tanzania with findings showing that a unit increase in it reduces Tanzania's FDIs by 20%.

Cointegration Equation: Long Run Relationships

$$D \log FDI_i = \alpha_{ij} + 1.47 \log Openness_i - 1.02 \log \text{int } er_i + 40 \log \text{se min } dex_{ij} - 0.63 \log \text{int } er_j - 2.68 \log regy_{ij} - 6.41d \log openness_j + 13.6d \log rri_j + 7.73d \log peidiff_{ij} + \varepsilon$$

.....(8)

The integrating equation above captures the long run equilibrium relationship between FDI and the explanatory variables of the model. In the long run, Tanzania trade openness behaves the same way as the short run in terms of its equilibrium relationship with the same country's FDI. In fact, in the short run, openness is negatively related to FDI where as in the long run the same is true. Improvements in openness within Tanzania tends to reduce foreign direct investment inflows both in the short and long runs with the long run impact reaching 51% more than the short run causality. Openness in partner countries is positively related to FDI flows to Tanzania. Evidence from findings presented in the ECM above indicated that a one unit increase in openness in partner country in the short run increases FDI inflows to Tanzania by 20% approximately. Interest rates on the other hand, and as economic thought would suggest, records negative relationship with FDI inflows. Like in the short run, in the long run equilibrium, FDI in Tanzania tends to decrease with increases in within country interest rates.

Moreover, the model results reveal that the magnitude of impact on FDI due to changes within Tanzania's interest rates tend to increase with time horizons where roughly in the long run the impact on Tanzania's FDI increases by 30% of the short run impact. Also, in the long run, Interest rates of Tanzania's partner countries i.e country *J* behave negatively against Tanzania's FDI. One unit increase in partner country's interest rate decreases Tanzania's FDI inflows by almost 63%.

5.0 Conclusions and Policy Recommendations

Result from ARDL has demonstrated that the long run relationship exists among aggregate GDP for the EAC Partner States, openness index, business regulator environment and Tanzania

FDI inflows this suggest that deeper integration process will generate more FDI inflows to Tanzania than the short run effect, Tanzania is expected to enjoy more benefits from the EAC integration process in the long run than the short run, with a speed of adjustment of 57% which has also positive impact on FDI inflows in Tanzania. This speed is above 50% which is sufficient to ensure sustaining long run benefits at the equilibrium level.

Furthermore the autoregressive distributed lag model test revealed that there exist a long run relationship between Tanzania Return on Investment and FDI inflows which also provides the expected sign and significant. Similarly, Tanzania interest rate with interest rates of other EAC Partner states relate positively with FDI inflows of Tanzania. Furthermore, Tanzania Openness index and the openness index of other EAC Partner state at equilibrium level have positive relationship with FDI inflows in Tanzania, since openness provide the measure of the level of liberalization done in the EAC integration process from Customs Union, Common Market and Monetary union, which is a typical milestone of the deeper integration process. This evidence demonstrates that in the long run the pattern of FDI inflows of Tanzania from EAC will be more based on the deeper integration aspect provide for by the creation of Common market and Monetary union, This evidence further suggests that the pattern of FDI inflows will shift from resources seeking FDI to efficiency and market seeking. Hence, it is evident that deeper integration process will generated more FDI inflows to Tanzania than the short run effect. Tanzania is expected to enjoy more benefits from the EAC integration process in the long run than in the short run.

On the other hand, the study findings showed a fairly strong speed of convergence towards the long run equilibrium. i.e approximately 57% of disequilibrium deviations of FDI inflows from their optimal level are being corrected. The error correction term also suggests that with an adjustment rate of approximately 57 percent the speed of adjustment of FDI towards long run equilibrium is satisfying as it stands above 50 percent. Four variables out of the six multi-variables in the sample were significant and positively related to Tanzania FDI in the short run. These variables include per capital differences between Tanzania and her Trading Partners in EAC, interest rate, Return on investment, and openness index.

The establishment of the EAC Common market has been implemented through the elimination of barriers on free movement of people, goods, capital and services, However, no substantial effects have been realised in the short run because most of the variables had no effect on FDI in the short run. The EAC need to complement the implementation of the Common Market protocol through the implementation of the regional law or act that add more weight to the process similar to what was done in the establishment of Single European Union Act. Consolidation of the market will create a unified market across EAC, so market-seeking FDI from outside the EAC would be strongly attracted to the EAC because of the size of the domestic market and the possibilities of exploiting economies of scale and reducing transaction costs. The expectation is that positive relationship in a long run is likely to change the pattern of FDI inflows from resources seeking to efficiencies seeking and market seeking FDI. The Common market is also likely to increase FDI between member states, because of the significant differences in costs among them, especially labor costs, combined with relatively short supply chains and low transaction and coordination costs. Hence, EAC countries need to

speed up the harmonization of domestic policies to enhance proper functioning of the common market. On top of that the integration process need to be complimented by compensatory and complimentary policies to ensure equilibrium relationship indicated by the integration variables is well sustained.

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Examining the Factors Affecting Coffee Supply Chain Management in Ethiopia: A Case of Commodity Exchange at Jimma Branch

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Abstract

Coffee is the most traded commodity on the global market. Hence, the purpose of this paper is to examine the factors affecting Coffee Supply Chain Management (CSCM) in Ethiopia. Data for this study were gathered from 178 respondents as sample size and the main sources of data for this survey were primary data which were collected by using survey questionnaires. This data was analyzed using descriptive and inferential statistical techniques. The results of this study show that all independent variables have a significant effect on the dependent variables. According to the regression model results, R values (94.1%) clearly show a significant relationship between the dependent variable and the predictor variables, and an adjusted R-squared reveals that all predictor variables (such as economic factors, institutional factors, infrastructure factors and marketing factors) can predict the dependent variable (coffee supply chain management) by 88.3 %. However, economic-related factors have great effects (56.48%) on CSCM in Ethiopian Commodity Exchange (ECX) at Jimma branch followed by institutional related factors which have (30.67%) effects on CSCM while infrastructural related factors and marketing related factors are the least important (10.47% and 2.38%) respectively. The study concludes that coffee supply chain management is unproductive because of corruption, lack of technology, lack of financing, insufficient training, and lack of managerial competency. Hence the study suggests that all stakeholders focus more on developing a policy for blending coffee supply chain which includes production, storage, and marketing, and preventing constraints such as corruption, poor management systems, and insufficient training to improve coffee supply chain management and marketing systems, particularly in Ethiopian Commodity Exchange at Jimma Branch.

Keywords: *coffee, coffee supply chain management, coffee production, marketing*

1.0 Introduction

Coffee is an agricultural raw material widely traded on a global and regional scale (Bali et al., 2020, Wakjira, 2021). In today's global market, various commodities are available in the international market, with coffee being one of the most important commodities (Bali et al., 2020). Coffee is a vital production for development activities that provides a living for millions

of people worldwide by generating financial returns in subsistence economies (Gebermedin & Tolera, 2015). Coffee production and harvesting in developing countries are labor-intensive, and it is a valuable source of rural employment for both men and women (Mutandwa et al., 2009). It is unique in that, coffee is grown in practically every non-arid tropical country. Over 50 countries produce considerable amounts of coffee, and the sources of their income are largely based on coffee exports which are critical to the country's balance of payments (Chauhan et al., 2015; Gebermedin & Tolera, 2015). In the Ethiopian economy, agricultural products particularly coffee accounts for about half of Gross Domestic Product (GDP) (Lemecha, 2019). It nearly accounts for about 47% of GDP, 80% of export revenues, and employment for 85% of the communities, and all of these made it the country's economic backbone (Nguni, 2016).

Multiple studies in Ethiopia show that coffee is one of the most essential commodities in international and local consumption and trade, which provides a significant source of income for several nations (Temesgen & Tufa, 2017; Aliyi, 2019, Asefa et al., 2016; Wakjira, 2021). This suggests that the expansion and development of the coffee business can have a major impact on national, regional, and household economic growth (Gebre, 2020; Kebede et al., 2021). However, the coffee value chain has not yet fully capitalized on its role as a supplier of most of the world's greatest coffees (Degaga, 2020).

Ethiopian coffee supply chain faces numerous problems due to a lack of market outlets, insufficient market information among participants, and limited investments in market linking activities (Amamo, 2014; Minten et al., 2019). As a result of these and other factors, the farmers' share of the present price has decreased and Ethiopia's government also recognized the issue and allowed coffee unions to sell their members' products directly to international markets, without any middlemen. However, while these cooperatives or unions may be able to shorten the coffee supply chain, they are having trouble in adding value to their members' products in terms of logistics, marketing, and institutional factors (Aliyi, 2019).

Currently, various literature and study have been conducted on CSCM in Ethiopia. For instance the study by Angula, 2010; Kabeta, 2021; Kassaye et al., 2018; Shumeta & D'Haeseb, 2016; Temesgen, 2020. In this regard, coffee supply chain analysis is an intriguing procedure that needs extra attention in this field of research. However, most of these studies did pay attention to determinants/factors affecting the coffee supply chain rather than the extent to which those factors impact CSCM. Therefore, the main objective of this research was to bridge this practical gap by examining the extent to which those factors impacts CSCM of Ethiopian Commodity Exchange (ECX) at the Jimma Branch. Specifically, the study were to examine the extent of institutional, infrastructural, market, and economic factors impacts on the Ethiopia's CSCM. This study is significant to inform the Coffee Regulatory Authority in Ethiopia and other stakeholders in coffee industry about the level of impact of each factor and suggesting the appropriate measures.

2.0 Related Literatures

Coffee is one of the five main important commodities in the world markets (Ibrahim & Zailani, 2010). In today's dynamic economic environment, individual companies may begin to compete as distinct entities instead of as active participants in a bigger supply chain that encompasses a

network of different businesses and partnerships. As a result, suppliers operate in an ever-changing environment and are vulnerable to a wide range of risks at all levels due to a constantly changing landscape caused by variety of factors (Ibrahim & Zailani, 2010). Many supply chains span large areas and are susceptible to a variety of global risks (Butner, 2010; Christopher & Holweg, 2011). Customers are becoming increasingly demanding of product customization, pricing, and service level (Christopher & Holweg, 2011; Sayed et al., 2017).

Product variation is also continuing to increase because of high clock frequency in so many companies which leads to rapid technological changes and the ongoing launch of new technology to the market. Besides, the external environment is extremely vibrant leading to economic (energy costs, raw material prices, and availability, currency values), socioeconomic (civil disorder, changing customer needs), and natural events (Sayed et al., 2017). In such, businesses must be incredibly agile to stay alive in this complicated world, as well as build a large level of adaptability and mitigating risk skills, as well as a porous structure that allows for rapid response to these problems. According to Christopher & Holweg (2011), structural flexibility is the supply chain's ability to adjust to essential changes in the market. However, adaptability and perseverance come with a cost in the form of an extra resource base such as safety stock and extra space, as well as higher transaction costs (Christopher & Holweg, 2011).

Firms must have the greater profile of the entire supply chain, the essential speed to respond rapidly to changes, and effective coordination with vendors and distributors in terms of balancing the usually needed level of resilience and flexibility and the cost of achieving it (Christopher & Holweg, 2011). It is also critical in assisting supply chains in coping with the issues of an ever-changing environment and a plethora of risks at all stages. Supply chain interactions are being elevated to a new level, with the potential of human-to-thing interaction and independent cooperation between many 'things' while still being retained in an institution or transported between various supply chain organizations (Mulyati & Indrawan, 2021; Phyllis, 2014; Sarker, 2018). These new tools provide a huge opportunity for dealing with confronted more successfully. It enables new levels of logistics, flexibility, and versatility to deal with a variety of supply chain management challenges (Ellis et al., 2015). This will permit for a decrease in time among data collection and judgment, letting supply chains respond to events in real-time, enabling for levels of nimbleness and ability to respond never before seen (Ellis et al., 2015).

Ethiopia's economy is mostly reliant on agriculture, which accounts for roughly 40% of GDP and 80% of exports (Sarker, 2018). Coffee in Ethiopia is most important agricultural export product, accounting for 65% of the country's foreign exchange revenues. In a country where a huge portion of the population lives in poverty, coffee farming is critical to the country's cultural and socioeconomic well-being.

According to a World Bank assessment, over 25% of Ethiopia's population is dependent on coffee cultivation, processing, and marketing, either directly or indirectly (Umaran et al., 2022). Ethiopia is noted for having a suitable environment for growing coffee, with a mix of optimum height, temperature, rainfall, and soil type, and Ethiopia is the source of Arabica coffee. For this Arabica coffee, the country has a diverse genetic background with significant

variation. Ethiopia produces a variety of coffees and they have significant potential for specialty coffee sales (Sayed et al., 2017).

2.1. Factors Affecting Coffee Supply Chain Management in Ethiopia

While new markets emerge, many coffee-dependent poor countries, such as Ethiopia, are struggling to produce and export their coffee. Ethiopia is the world's fifth-largest coffee producer and the continent's leading producer. Most of the coffee is consumed in the country, and it has the highest domestic consumption rate on the African continent (Anwar & Nguyen, 2010).

Ethiopia is famous not only for being the birthplace of Arabica coffee but also for its high-quality coffee, which is prized for its aroma and flavor. Another appealing aspect of Ethiopian coffee is its variety of flavor and quality. There is widespread agreement that the five most significant marketing-related constraints confronting Africa's farmers revolve around five points: (1) high production and marketing costs, resulting in low profitability and a disincentive to produce for the market; (2) limited access to credit, particularly for small-scale farmers; (3) a scarcity of profitable new farm technologies to adopt and use sustainably; (4) price volatility; and (5) poor market access and competitiveness conditions (Jayne et al., 2014).

The primary goal of a coffee exchange value is to establish a fair, orderly, and efficient system for aligning supply and demand to enable "market pricing," or the true current value based on supply and demand conformity (Alam, 2020; Angula, 2010; Jima Degaga et al 2017). To attain this alignment, an exchange value can and must restrict market behavior through risk assessment equipment designed to ensure that market behavior adheres to the principles of a fair, orderly, and efficient marketing system. These tools include, among other things, limiting trading positions, trying to adjust the rate of return and other deposit prerequisites, and establishing price loop filtration to limit price swings, marketing factors, finances, government policies, and physical and human resources greatly affected coffee production (Catturani et al., 2008; Gathura, 2013; Issa & Chrysostome, 2015).

Ethiopia's export competitiveness is improved by first getting the domestic market in order, whereby three groups of problems in the commodity market are identified: 1) the lack of an integrated commodity marketing policy that addresses all processes involving transport, grading, storage, and information facilities for both producers and consumers; 2) the lack of a well-equipped institutional establishment capable of providing all marketing services to all market actors; and 3) the lack of private and public partnership in the commodity market (Alam, 2020; Angula, 2010; Gebermedin & Tolera, 2015). Thus, commodity exchanges are established for a variety of reasons, the most important of which is to address the aforementioned and related challenges. Conversely, dissatisfaction with transportation and communications services; a lack of complete, accurate, and accessible global marketing information; a lack of adequate warehouses, grading, and sampling systems; and a higher premium cost for failing to pull back commodities from storage facilities on time were identified as some of the ECX difficulties for agriculture products export members (Abebaw, 2014; Shumeta et al., 2012; Shumeta & Haese, 2018).

Exchange rates can be useful throughout physical trade in emerging markets, including the financing of commodity inventories. They can lower the cost of physical exchange exploration and counterparties in deals with a number by providing a transparent, disciplined marketplace (Ngmenipuo & Issah, 2015). Commodities that work properly can encourage more efficient and productive, storage, marketing, and agriculture sectors processing activities, as well as significantly improved agriculture sector effectiveness. (Apriyanti, 2020).

Small-scale farmers, privately held farmers, and state businesses are among the producers at this stage in Ethiopia's coffee supply chain (USDA, 2019). Producers, particularly large-scale private coffee plantations and state farms of coffee plantations, control the majority of the volume of goods mobilized, value-adding services, market share, and capital in the country's coffee value chain. Subsequently, the coffee is made and matured, those producers execute the following value-added operations in the value chain, gathering coffee chary and delivering it to processing regions (USDA, 2019). A supply chain's primary complaint is to start producing value-added goods or services for a market location by improving an organization and utilizing infrastructure and services inside the possibility and restrictions of its institutional context. As a result, we believe that the restrictions to value progress are associated to access to the common market (municipal, geographic, and worldwide) and market alignment (Hernandez, 2015; Perdana et al., 2018; Sayed et al., 2017).

Despite its high quality, Ethiopian coffee is the least advertised and promoted on the global market. Evidence suggests that roasters are aware that Ethiopian coffee is superior, but they are unable to sell it because we have not approached them. That is, one of the problems with coffee marketing in Ethiopia is that there is insufficient effort to promote coffee and ensure trademark rights for the best and most well-known Ethiopian coffee varieties, the majority of which are motive and number one in the world. Furthermore, exporters lack experience and knowledge of the coffee market (Angula, 2010; Kabeta, 2021). However, to the best of the researcher's knowledge, none among the empirical study has been conducted in the Ethiopian Commodity Exchange (ECX) at Jimma Branch and most of these studies did pay attention to determinant/factors affecting the coffee supply chain rather than its contributions to economic growth or the extent to which those factors impact the CSCM. Therefore, this study will be worthy of persuit to bridge this gap and add knowledge to the existing literature.

2.2 Conceptual Framework of the Study

Based on the aforementioned information and reviewed literature, the researchers presented the conceptual framework depicted in figure 1.

Infrastructural related factors

- Proximity
- Storage facility
- Transportation facilities
- Technology



Marketing related factors

- Timely deliver
- Marketing informations
- Processing supply
- Price volatility

Coffee Supply Chain
Management in Ethiopia

Economic related factors

- Access to credit
- Income



Figure 2: A Conceptual framework for factors affecting coffee supply chain management in Ethiopia

Source: Developed from reviewed literature

3.0 Methodology

3.1 Research Design

The study employed a cross-sectional survey design which incorporates both descriptive and explanatory research design to examine data and get enough information about the study's realities. The descriptive research design was used to describe the contributions and constraints of each determinant factor on coffee supply chain management and marketing system in Ethiopia at EXC of Jimma Branch. The study also used an explanatory research design to investigate the relationship between independent variables (institutional, infrastructural, marketing, and economic factors), and dependent variables (coffee supply chain management) because those variables have a cause-and-effect relationship.

3.2 Target Population and Sample Size

Agreeing to (Kothari, 2004), the "target population" refers to the intended population of a study in terms of age group and gender in a certain geographical area such as a country, region, or town. Accordingly, the study used 321 employees of the Ethiopian Commodity Exchange (ECX) of the Jimma branch as the target group of the study. Hence, the researchers selected a sample of responders among these employees. The study employed the (Yamane, 1969) sampling technique for determining sample size as shown in equation (1). Thus, the researcher chooses 178 employees as a sample size out of 321 employees.

The formula for sample determination is $n = \frac{N}{1+N(e^2)}$, whereby: n =sample size, N =Targeted population, e =Level of precision or sampling error which is 0.05.

$$\text{Thus, the sample employees of ECX, } n = \frac{321}{1+321(0.05^2)} = 178$$

3.3 Sources of Data

The main sources of information for this survey were primary data. Questionnaires and interviews were used to collect primary data. The questionnaires were created for the entire

group of respondents, and it is the best and most important primary sources. The cross-section survey research method was used to collect data for this study because it is an appropriate method for measuring respondents' opinions and attitudes. The researchers had carefully crafted insightful interview questions in addition to the questionnaires. The interview was conducted under the assumption that the participants' perspectives are valuable, that they are knowledgeable in the field, that they can make accurate comments, and that their perspective influences the study's success.

3.4 Method of Data Analysis

Various statistical methods, including descriptive statistics such as mean and standard deviations, as well as inferential statistics (multiple regressions and the Automatic linear regressions model) were used to analyze the data. The study employed multiple linear regression analysis to analyze the strength of the relationship between the independent variable and various predictor variables, as well as the importance of each predictor to the relationship with the influence of other predictors. The data was then analyzed and interpreted considering the information gathered from respondents. Accordingly, the general model for this specific study is as follows: $y = b + m_1x_1 + m_2x_2 + m_3x_3 + m_4x_4 + \varepsilon$

Where;

y = The dependent variable of the regression which is coffee supply chain management (CSCM)

b = Constant or the y-intercept

m_1 = Regression coefficient of the first independent variable

x_1 = First independent variable of the regression which is Marketing related factors

m_2 = Regression coefficient of the second independent variable

x_2 = Second independent variable of the regression which is Infrastructural related factors

m_3 =Regression coefficient of the third independent variable

x_3 = Third independent variable of the regression which is Institutional related factors

m_4 = Regression coefficient of the fourth independent variable

x_4 = Fourth independent variable of the regression which is Economic related factors

ε = Model error

3.5 Validity and Reliability of the Study

Validity is a measurement trait that describes a research instrument's or tool's ability to measure what it was designed to measure. The validity of instruments is ensured in this study by using simple language when creating instruments so that respondents can understand them easily. The questionnaires was examined and checked by consultants and potential experts in quantitative research. Then were pre-tested to employees of ECX at Jimma branch who were not part of the study sample. Reliability is the degree to which a research mechanism produces reliable outcomes or data the same way each time it is used under the same condition with the same subjects. The reliability of the study would be checked by using Cronbach alpha which was calculated by using SPSS software.

4.0 Results, and Discussion

This chapter discusses the presentation, interpretation, and analysis of the study's data. The variables in the study were the factors and their effects on CSCM. Descriptive statistical analysis, such as percentages and frequencies, was designed to present how these factors affect CSCMM. To assess the influencing factors on CSCM in Ethiopia, Multiple linear regression and automatic linear regressions were used to show the effects and importance of the predictors. To conclude, 178 questionnaires were distributed to respondents, and the collected data were presented and analyzed by using SPSS (version 26) statistical software to test the study's variables and the effects of the independent variables on the dependent variable.

4.1 Validity and Reliability of the Data

The study used Cronbach's alpha which is dealing with the amount to which item responses obtained at the same time are highly correlated with one another, and the widely accepted social science cut-off is that alpha should be greater than 0.70 for an agreed of items to be considered a scale (Field, 2009). Accordingly, the Cronbach's alpha test was performed by using SPSS 26 versions, and the results are summarized as shown in Table 1. The calculated coefficient of alpha for this study was 0.970 for all variables, which is greater than the required threshold of 0.70, indicating that the variables are internally reliable.

Table 9: Summarized Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.970	0.980	15

The inter-item correlation was also used to determine the correlation coefficients for items in the study's scale, to check and see if the items interrelated well. To be the inter-item correlation interrelated well, the threshold of the reliability test has to be greater than 0.3 (Field, 2009). This technique also shows that the survey data was statistically reliable. For all items that are inserted in the systems of Cronbach alpha, the value is greater than 0.3 which fits above the required standards. This shows the data used by the study is reliable and valid for analysis. (See below Table 2)

Table 10: The correlation coefficients for inter-item

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
o Timely delivery	59.847	56.246	0.779	0.971
o Marketing information	59.3820	56.961	0.926	0.966

o Processing and supply	61.0112	60.870	0.918	0.968
o Price volatility	59.2022	55.835	0.839	0.969
o Operational quality	59.0112	60.870	0.918	0.968
o Proximity to cooperative society	59.2921	58.920	0.874	0.967
o Storage facilities	60.5730	50.777	0.951	0.970
o Transportation facilities	59.1966	61.560	0.797	0.969
o Technology	59.0112	60.870	0.918	0.968
o Management capacity	59.1067	60.955	0.875	0.968
o Government policies	59.0052	60.755	0.865	0.968
o Training	59.0112	60.870	0.918	0.968
o Corruptions	58.9663	61.276	0.889	0.968
o Access to credit	59.2865	62.691	0.674	0.971
o Income	59.1067	60.955	0.875	0.968

As shown in Table 2 above, the overall and inter-item Cronbach's alpha values of all dependent and independent variables in the study meet the minimum requirement of reliability analysis (i.e. $\alpha > .70$). As a result of this finding, the researcher concludes that the instrument's pilot test is reliable enough to use in the current study. Additionally, all the items contribute positively to yielding the highest Cronbach's alpha for the instrument.

4.2 Descriptive Analysis

The Descriptive analysis and interpretation are based on the respondent's responses and clear sentences to express obtained data by using the table of frequencies, percentage, mean and standard deviations; whereas the data collected through interviews were analyzed qualitatively to strengthen the analysis of the results from the study. The descriptive analysis mainly focuses on explaining the contributions of the independent variables such as Marketing related factors (Timely delivery, Marketing information, Processing and supply, Price volatility, and Operational quality), Institutional related factors (lack of management capacity, Inadequate training, and Corruptions), Infrastructural related factors (Proximity to cooperative society, Storage facilities, Transportation facilities, and Technology) and Economic related factors (Access to credit and Income) for dependent variables such as coffee supply chain management and marketing.

Descriptive analysis was used to summarize the results of each variable based on the response for each item and analyzed by comparing the "mean" and "standard deviation" scores of each variable. According to Zaidaton & Bagheri (2009), the mean score below 3.39 was considered as low, the mean score from 3.40 up to 3.79 was considered moderate, and the mean above 3.8 was considered as high as illustrated below. (See below Table 3)

Table 11: Comparison bases of the mean score of the five-point Likert scale instrument

Mean Score	Description
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<3.39	Low
3.40 -3.79	Moderate
>3.80	High

Hence, based on the above table 3 descriptive statistics were employed to analyze the data that was calculated by using SPSS, and the interpretations of each descriptive statistic were presented in table 4. (*See below Table 4*)

Table 12: The descriptive results for each independent variable

	Descriptive Statistics		
	N	Mean	Std. Deviation
Marketing related factors	178	3.9506	0.64714
Infrastructural related factors	178	4.1222	0.64672
Institutional related factors	178	4.6278	0.45352
Economic related factors	178	4.4438	0.45060
Valid N (listwise)	178		

The results of above table 4 show the average mean and standard deviations of the predictor variables that have a significant effect on dependent variables. Hence the above table shows that Marketing related factors have a mean of 3.95 with standard deviations of 0.647, Infrastructural related factors have a mean of 4.122 with standard deviations of 0.646, Institutional related factors have a mean of 4.627 with standard deviations of 0.453, and Economic related factors has a mean of 4.443 with standard deviations of 0.450. According to Zaidaton & Bagheri (2009), the mean score below 3.39 was considered as low, the mean score from 3.40 up to 3.79 was considered moderate, and the mean score above 3.8 was considered as high. Based on this information all the above results are greater than the cutoff point or above the average which means that all independent variables (Marketing related factors, Infrastructural related factors, Institutional related factors, and Economic related factors) have greater effects on dependent variables (coffee supply chain management and marketing).

4.3 Inferential Statistics

The analysis and interpretation based on the respondent's responses were also interpreted by inferential statistics such as multiple regressions and automatic linear models to clearly state the relationships between each variable and their effects on (ECX) at Jimma Branch deeply disclosed according to the following (See below Table 5)

Table 13: Model Summary of relationships between variables of the study

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate

1	0.941 ^a	0.886	0.883	0.16688
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a. Predictors: (Constant), Economic related factors, Marketing related factors, Institutional related factors, Infrastructural related factors

The model summary is depicted in the above Table 5 shows, R which indicates a highly significant relationship between the dependent variable and the linear combination of the predictor variables is (0.941) which is the set of all independent variables explained 94.1%. R-squared, on the other hand, measures the proportion of the difference in the dependent variable that can be described by independent variables, irrespective of how well they are correlated with the dependent variable. Thus, the R Square value is (0.886) which indicates all independent variables explained 88.6% of the disparity in the dependent variables. However, this is not a desirable characteristic of goodness-fit of the results of the statistics. Hence, Adjusted R – squared, also provides an adjustment to the R-squared statistic, such as independent variables that correlate with the dependent variable. Accordingly, adjusted R-squared is preferable to R- squared for determining the model's success in the real world. Therefore, adjusted R-squared is the proportion of deviation described by the regression of the dependent variable on the combined effect of all predictor variables, which is 88.3%. Hence, the independent variables (such as economic, marketing, institutional, and infrastructure factors) can predict the dependent variable (coffee supply chain management) by 88.3 %.

Table 14: ANOVA results showing average amount of deviation described by the model and residual

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	37.300	4	9.325	334.852	0.000 ^b
	Residual	4.818	173	0.028		
	Total	42.118	177			

a. Dependent Variable: Coffee supply Chain Management
b. Predictors: (Constant), Economic related factors, Marketing related factors, Institutional related factors, Infrastructural related factors

The ANOVA (Analysis of variance) Table 6 above shows that, based on the total observation value (42.118), the regression model was explained by the majority of the observations (37.300). The remaining observation values (4.818) were explained by extraneous variables. The mean square of the model (regression) represents the average amount of deviation described by the model is 9.325; whereas the mean square of the residual is 0.028 and represents the average amount of deviation described by extraneous variables (the unsystematic variation). The F – ratio (334.852) is a degree of the percentage of deviation described by the model to variation explained by extraneous variables. Thus, the value of F is large enough to conclude that the model represents an actual practice of the business operators under study.

The significant value in the model, also known as the P-Value ($p \leq 0.001$), indicates that the independent variables in the model explain the dependent variable. (See below Table 7)

Table 15: Regression coefficients result for related factors which predicts CSCM

		Coefficients ^a			
Model		b	Std. Error	t	Sig.
1	(Constant)	1.717	0.220	7.794	0.000
	Marketing related factors	0.308	0.079	3.881	0.000
	Infrastructural related factors	0.432	0.116	3.730	0.000
	Institutional related factors	-0.732	0.079	-9.215	0.000
	Economic related factors	0.670	0.070	9.504	0.000

a. Dependent Variable: Coffee supply Chain Management

The unstandardized coefficient of an independent variable (b) which is a constant or the y-intercept in the equation, measures the strength of its relationship with the performance of the dependent variable. Thus, the coefficient for marketing-related factors is 0.308, the coefficient for infrastructure-related factors is 0.432, the coefficient for institutional-related factors is -0.732, and the coefficient for economic-related factors is 0.670. Thus, marketing, infrastructure, institutional, and economic-related factors predict coffee supply chain management by 30.8%, 43.2%, and 73.2% and 67%, respectively.

Using the regression coefficients for independent variables and the constant term given under the column labeled b, the researchers constructed the regression equation for predicting a firm's performance as follows: $y = b + m_1x_1 + m_2x_2 + m_3x_3 + m_4x_4 + \varepsilon$

$$\text{Therefore, } y = 1.717 + 0.308x_1 + 0.432x_2 + 0.732x_3 + 0.670x_4 + \varepsilon$$

Generally, the above finding implies that improving coffee marketing conditions, and enhancing infrastructural and institutional facilities were among the important factors to improve coffee supply chain and marketing, thereby improving the livelihoods of coffee producers in the study area.

Table 16: Automatic linear model results for predictors' performance/Importance on CSCM

Nodes	Importance	Importance	V4	V5
Marketing related factors transformed	0.0238	0.0238	Marketing related factors	0.0238
Infrastructural related factors transformed	0.1047	0.1047	Infrastructural related factors	0.1047
Institutional related factors transformed	0.3067	0.3067	Institutional related factors	0.3067

Economic related factors transformed	0.5648	0.5648	Economic related factors	0.5648
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The results in the above table 8 were obtained by using automatic linear modeling which reveals that, the most important predictors for this study are economic-related factors such as farmer's or coffee producer's access to credit. Hence economic-related factors have great (56.48%) effects on CSCM in Ethiopian Commodity Exchange (ECX) at Jimma branch followed by institutional related factors which have more (30.67%) effects on CSCM while infrastructural related factors and marketing related factors are the least important (10.47% and 2.38%) respectively. Hence, the finding of this study discloses that institutional related factors such as poor institutional managements system, absence of training, and corruption are among various factors which have a serious effect on CSCM in Ethiopian Commodity Exchange (ECX) at Jimma branch next to economic related factors. In general, it was discovered that most of the respondents agreed on the coffee supply chain management and marketing are ineffective.

5.0 Conclusion and Recommendations

The purpose of this study was to examine the factors affecting Coffee Supply Chain Management in Ethiopia: the case of Ethiopian Commodity Exchange at Jimma branch. The descriptive and explanatory research analysis was used for the study. The finding of descriptive statistics show that all the independent variables have an influence on dependent variables. The finding from the inferential statistics also shows that the model represents an actual practice of the business operators under study. The significant value in the model, also known as the P-Value ($p \leq 0.001$), indicates that the independent variables in the model explain the dependent variable. The adjusted R-squared shows the proportion of deviation described by the regression of the dependent variable on the combined effect of all predictor variables, which is 88.3%.

In general, it was discovered that coffee supply chain management is ineffective, whereby corruption, lack of technology, lack of access to credit, inadequate training, and management capacity are major important factors. Therefore, the study recommends that sufficient and interest-free credit facilities should be made available to coffee producers and other actors or members on time. Microfinance institutions play an important role in this regard, and strategies should be developed to link microfinance with all actors further the government should give attention to formulate policies regarding all these factors. Moreover, corruptive practices should be reduced by raising awareness about the effects of corruption, dismissing corrupted committees, firing the corrupted employees in the unions and, care should be taken to consider their background and ethical standards while recruiting committee members and employees.

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Shaping Today's HEI Students: Evacuate Theoretical to Digitalized Skills and Competences

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Abstract

This paper explores the influence of technical services provided by incubators on the performance of digital entrepreneurs in Tanzania, with a focus on the University of Dar es Salaam ICT Incubator (UDICTI). Utilizing the Open Innovation theoretical framework, a mixed-methods approach was employed to gather and analyze data from 42 students benefiting from incubation services. Furthermore, data were analyzed using Seemingly Unrelated Regression (SURE) and content analysis method Findings indicate that technology training as well as industrial and experts' practitioners had positive and significant influence on blending digital startups. On further note, access to the UDICT Lab and innovation space with facilities also had positive and significant influence on the performance of digital entrepreneurs. This paper concludes that, higher learning institutions ought to adopt the components of open innovation in developing innovation hubs like UDICT where the students will access training, mentorship, expert guidance, a laboratory with learning materials and free innovation spaces that together contribute while shaping today's HEI to evacuate from the content to digitalized skills, innovation and talents development for sales, employability, and product innovativeness. The findings of this research offer valuable insights for policymakers and stakeholders in establishing supportive ecosystems that empower digital startups, driving innovation and economic growth in Tanzania and other developing regions.

Key terms: *incubates, hubs, students, innovation, digitized skills, competences*

1. Introduction

The landscape of future working environments anticipates complexities and dynamism context (Sulintang et al., 2024; Olawale et al., 2024). Nonetheless, was observed by Sikubwabo et al. (2024) that the youth graduates' unemployment has been an alarming jargon that needs appropriate mechanisms to sort out. According to Kaligotla (2023), technology deployments in teaching and learning had been upheld to root booth and catalyze reshaping and deployment of multiple competencies to graduates for jobs undertaken in the Fourth Industrial Revolution (4IR). Likewise, the alarmed curriculum components are mismatched with new labor market trends need colleges and universities to rethink, redesign, and redevelop appropriately to reflect the society's requirements (Cassaro & Lee, 2024). Social-cultural and economic practices in 4IR entail colleges and universities to focus on pillars that inculcated Autonomous Robots,

Industrial Internet of Things (IoT), Augmented Reality, Additive Manufacturing, Cybersecurity, Cloud Computing Simulation/ Digital Twin, and Big Data and Analytics.

Further, Olaya-Escobar et al. (2024) disclosed the presence of demands on procedures for technology-based approaches acquainted with paradigm shifts for 4IR competencies acquisition. Undoubtedly, Mishrif et al. (2023) insisted that realistic teaching and learning had to become not only the responsibility of academicians, but also experts, and practitioners from fields and industries. Certainly, through collaborative teaching the persistent debates that doubt the HEI graduates' competencies gaps had to be fixed. Likewise, today and future important skills including financial and digital literacy and wide attributes behaviors are advocated to be articulated by the graduates to suit sustainable socio-economic driven agendas (Merino, Maroun & Callaghan, 2024). Subsequently, revolutionization challenges brought by (4IR) pertained to the need to change the curriculum implementation from theoretical to practical skill-based endeavors and large attributes that are ventured into digital-related skills, knowledge, and competencies (Olawale et al., 2024).

Additionally, the uniqueness of globalization trends correspondingly to digitalization fostered graduates to possess other wider competencies and attributes for collaboration, communication, critical thinking and creativity (4Cs), problem-solving, and innovation to live at any space, pace, and place. The required voluntary and involuntarily wider attributes had to be substantiated and induced to students during the classroom teaching and learning process (Halloun, 2023); day-to-day contextual interaction with the society (Kaligotla, 2023); engaging with the experiential experts in the work-based environment (Cassaro & Lee, 2024). Attainability of appropriate endeavors demanded to inculcate the need to change colleges and universities' teaching and learning approaches towards engagement of hands-on activities, field practices, and internships, industry expertise dialogues as blending education sandwiches ingredients for students' exposition beyond the classroom teaching and learning walls (Sulintang et al., 2024).

Seemingly, Valarmathi et al. (2024) ascertained the need for the academic industry to shape today and future human capital to enable the significant paradigm shift towards inculcating multi-disciplinary competencies of entrepreneurship, skills commercialization, knowledge, and innovations being blended with digitalization. Habitually, colleges and universities contextual environment had to establish the digital entrepreneurs' startups and hubs that are focused on designing, developing, and supplying technological-related products or services (Hong & Evertsen, 2023; Kabelele et al., 2023). Furthermore, Ullah et al. (2023) insisted that the Higher Education Institutes (HEI) are struggling to establish small and medium innovation hubs to undertake high-tech innovations and creativity. Also, the innovation hubs in HEI are utilized not only as practical laboratories to restructure teaching and learning-delivering approaches, strategies, and procedures but also as entrepreneurial enterprises (Pokidina et al., 2023). Similarly, in the hubs and start-ups innovative-knowledge-led reflections on economic stimulation, growth, and sustainability are taking place (Hayman, 2023).

However, digital startups face various challenges hindering their operationalization and growth, including limited access to capital, inadequate managerial capabilities, and market

accessibility issues (Satalkina & Steiner, 2020). To address these challenges and foster entrepreneurial activities, the establishment of business incubators has gained prominence. Incubators provide essential support services, such as professional, technological, and critical support, nurturing technology-based ventures and enhancing individual, national, and regional socio-economic development (Leitão et al., 2022)

Countries worldwide are increasingly establishing incubation programs to provide support for new and young digital enterprises, promote technological innovation, and drive industrial regeneration (Li et al., 2020). Well-incubated digital enterprises have been shown to revolutionize socio-economic landscapes by creating jobs, stimulating high-tech businesses, encouraging technological entrepreneurship, and facilitating technology commercialization (Cavallo et al., 2020; Tang et al., 2021). A key factor contributing to this transformation is the range of services provided by incubators. For Instance, Lyken-segosebe et al. (2020) found that incubator services provide entrepreneurs with networks that facilitate the process of learning by doing, leaning by using, and learning by interactions with professionals in their field of expert. Learning by doing offers an opportunity to collaboratively develop and test prototypes, and commercializing the final product. In the incubation network, Muiruri (2020) observed that digital entrepreneurs are provided with product design and development techniques, production and marketing techniques pertinent for successful innovation.

Furthermore, technical support offered by incubators significantly impacts the innovation capacity of startups. The study by Xiao et al. (2021) observed that technical support in form of provision of laboratories spaces, technology training, research facilities, and equipment positively influence business innovation. In this view, it can be urged that, the form of technological support offered by entrepreneurs determines the level of technical innovation. For instance, Indiran et al. (2021) and Aladejebi & Oladimeji (2020) found that shared facilities, such as office space, equipment support, personal computers, and communication facilities, along with technical training, significantly influence technological innovation.

According to Leitão et al. (2022) business incubators helps in development of new ventures by fostering the opening of innovation practices by accessing knowledge, skills and techniques from university academicians in the incubation networks, digital entrepreneurs engage in the open innovation system to improve their business performance. However, Freire et al. (2020) observed that, the type of technical support accorded to entrepreneurs determines the level of innovation therein. Furthermore, Lose et al. (2020) revealed on new challenges faced by technology business incubators within their ecosystem especially in technical provision support such as lack of facilities, limited access to technology-based prototypes, lack of access to industry business skills, lack of product selection and design

Accordingly, in Tanzania, there is no uniformly developed framework for guiding HEI to undertake incubation, innovation, and entrepreneurial activities through start-ups and hubs. Nonetheless, HEI independently decides either to develop or to adopt different models and frameworks for the establishment of innovation hubs and incubation activities as part of the teaching and learning process. Supplementary, the University of Dar es Salaam ICT Incubator (UDICT), decided to adopt the Open innovation theory (OI) shown in Figure 1. The OI is

utilized as a resource to change the student's competencies from theories towards open-innovative practices, developing categorical entrepreneurial start-up firms related to the digital-technologies (Audretsch & Belitski, 2023). Moreover, the University of Dar es Salaam (UDSM) incorporated internal and external support to incorporate different stakeholders in the establishment and operationalization of digital innovation and entrepreneurial hubs for students as future workforce.

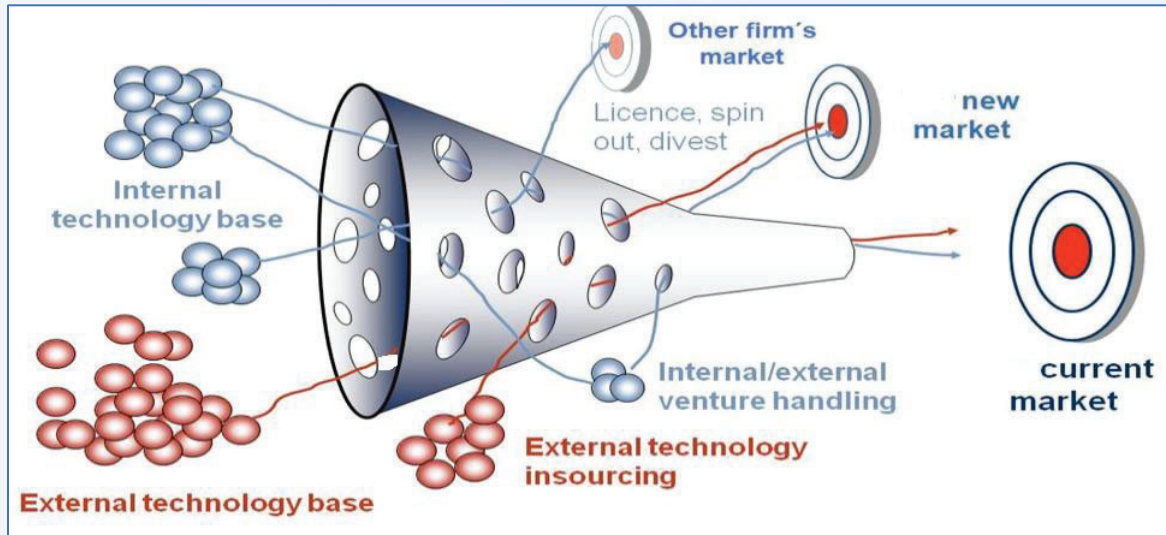


Figure 1. Open Innovation Theory Components (Chesbrough, 2012)

The UDICT deployed components of OI in guiding students to generate innovative ideas, solutions, insourcing technologies, and adaptation and commercialization to the existing and new markets (UDICTI, 2023). Also, the innovation activities in the UDICT are implemented via internally established ventures including Startup Academy, Y4C, FinHub, and NextGen, for the provision of practical training, mentorship, networking towards opportunities, sharing the experiences that enabled bridging the gap between academia and the digital industry (UDICTI, 2023). Nonetheless, these new practices eventually changed students' mindsets from job seekers after graduation instead joining entrepreneurial ecosystems as job creators, self-employed, and employers of others (Hayman, 2023). Students are nurtured and incubated in appropriate approaches, techniques, and procedures endowed with managerial skills including start-ups and innovation hubs operationalization for growth, capital accessibilities, and financial handling, business networking and market accessibilities, acquisition of technical supports, technology-based ventures and enhancing individual, national and regional socio-economic development.

However, the usefulness of OI in education perspective particularly in Tanzania HEI was relatively less unexplored about its integration to support digital start-ups and entrepreneurial performance. Based on those grounds, the paper intended to assess the deployment of OI at the University of Dar es Salaam ICT Incubator (UDICT) as an example of HEI fostering digital innovation and entrepreneurship as a mechanism to evacuate content based towards innovation, digitalization, and talents development (UDICTI, 2023). Certainly, the two objectives were covered that are to:

- i. Assess the usage of Open Innovation Theory components in blending digital start-ups at UDICT
- ii. Investigate the impact of innovation space provision on digital entrepreneurial performance at UDICT

2. Methodology

The study in hand was conducted at UDICT as an innovation hub under the College of Information and Communication Technologies, at the University of Dar es Salaam. UDICT was purposively selected due to the presence of an ICT incubator that comprises ICT incubation programs specialized in programming, mobile app development, and ICT-related projects. Also, the UDICT is the most influential actor in the technology innovation ecosystem in Tanzania (World Bank, 2017). The descriptive design was deployed through mixed research approaches. Simple random sampling was employed to select the sample of 42 active students incubates currently engaged in different ICT-related projects (UDICTI, 2023). The rationale for selecting 42 incubates was attributed to their activeness and endurance in ICT-related services as being in work up to date. Furthermore, the included incubates were still engaged with UDICT in which a close monitoring of their business undertaking was in contact and thus regarded as active incubates hence being essential for this study. Further, the quantitative data were collected via questionnaire, and qualitative through semi-structured interview guides. Data were analyzed using Seemingly Unrelated Regression (SURE) whereby each independent variable was tested with each dependent variable to establish the existing influence. Finally, the findings were presented through Tables and narrative themes.

3. Findings

3.1 Usage of Open Innovation Theory components in blending digital start-ups

Internalities and externalities factors assessed relied on the technology training and influential aspects of engaging the industrial and experts' practitioners in the provision of guidance.

3.1.1 Influence of Technology Training on the Performance of Digital Entrepreneurs

Technology-related development needs training support from different experts. Students at UDICT leveraged time and efforts for developing different technologies projects including systems for Virtual Reality (VR), Artificial Intelligence and Machine Learning, 3D printing, Cloud Computing, and Biometrics, cloud computing. Nevertheless, appropriate training, mentorship during development, and commercialization approaches to becoming digital entrepreneurs lead to succession. The study findings in Table 1 were at a 95% Confidence interval revealing that technology training influenced digital product innovativeness whereas the P value was found as $0.002 < 0.05$. Also, was found that the training enabled university students as young digital developers to sales growth holding the P value of $0.003 < 0.05$. Moreover, the employment growth on training provided through innovation hubs possessed the P value of $0.011 < 0.05$.

Table 1: Influence of Technology Training on Performance of Digital Entrepreneurs

Technology Training	Coef.	Std. Err.	Z	P	[95%Conf. Interval]	
Sales Growth	.127	.116	1.09	0.003		0.355
_cons	3.269	.552	5.92	0.000	0.101	4.352
					2.187	
Employment Growth	.108	.098	1.11	0.011	.083	.301
_cons	3.442	.463	7.43	0.000		4.350
					2.534	
Product Innovativeness	.121	.046	2.154	0.002	.075	.232
_cons	1.084	.306	5.205	0.000		1.480
					1.824	

Source: Field Data, (2024)

Furthermore, respondents through semi-structures interviews disclosed that access to technical training helped on the journey of becoming digital entrepreneurs as underneath portrayed:

... Technical training programs offered via the incubation hubs were keen to stay updated with the latest technologies and techniques, that directly impacted the designed and developed digital product development process students became more skilled to end up with the improved product quality.
(Respondent 4, Interview Session, 2024).

3.1.2 Influence of Experts and Guidance on Performance of Digital Entrepreneurs

In ascertaining the influence of technical and industry experts and guidance on the performance of new digital entrepreneurs was assessed by measuring the sales, employment growth, as well as digital and technology product innovativeness. Finding in Table 2 disclosed that the technical and industrial experts influenced the developed digital and technology projects' sales growth by a P value of $0.018 < 0.05$; the provision of guidance for employment growth had a P value of $0.014 < 0.05$ and product innovativeness held the P value of $0.002 < 0.05$.

Table 2: Influence of Experts/Guidance on Performance of Digital Entrepreneurs

Technical Experts and Guidance	Coef.	Std. Err.	Z	P	[95%Conf. Interval]	
Sales growth	.355	.224	1.58	0.018	0.085	0.796
_cons	2.285	1.002	2.28	0.023	0.320	4.250
Employment Growth	.409	.167	2.45	0.014	.081	.736
_cons	2.136	.744	2.87	0.004	2.676	3.595
Product Innovativeness	.371	.117	3.17	0.002	.142	.601
_cons	2.623	.522	5.02	0.000	1.599	3.648

Source: Field Data, (2024)

Certainly, the semi-structured interview revealed that the collaboration of the university with technical and industry experts positively contributed to influencing the performance of digital entrepreneurs as was cited:

... Consultation from technical and industry experts was cheaper and easily accessible for digital startups.... provided hands-on support, guidance, and easier navigating experienced complex challenges in developing the digital startups based on real experience (Respondent 1, Interview Session, 2024).

3.2 Impacts of Innovation Space on Digital Entrepreneurial Performance

The mixed analysis was made on accessibility to the UDICT laboratory and innovation space towards sales, employment growth, and product innovativeness through Seemingly Unrelated Regression (SURE) and thematic.

3.2.1 Influence of Access to UDICT Lab on the Performance of Digital Entrepreneurs

Seemingly unrelated regression was used to ascertain the influence of access to UDICT Lab on the performance of digital entrepreneurs. The study findings indicated the status of accessibility of UDICT lab on sales growth had a P value of $0.012 < 0.05$, employment growth had a P value of $0.007 < 0.05$ and product innovativeness had a P value of $0.012 < 0.05$ as shown in Table 3.

Table 1: Influence of UDICT Lab on the Performance of Digital Entrepreneurs

Access to University Lab	Coef.	Std. Err.	Z	P	[95%Conf. Interval]	
Sales Growth	.576	.231	2.50	0.012	0.124	1.029
_cons	1.307	1.028	1.27	0.000	0.707	3.323
Employment Growth	.475	.177	2.68	0.007	.128	.823
_cons	1.841	.790	2.33	0.020	.292	3.390
Product Innovativeness	.269	.136	1.97	0.048	.002	.536
_cons	3.076	.606	5.07	0.000		4.266
					1.887	

Source: Field Data, (2024)

Seemingly, the semi-structured interview was conducted and the respondents showed that accessibility of UDICT laboratory enabled the acquisition of technical support as was revealed:

... To develop digital startups students are enabled to access technological devices and other supportive resources accessibility of the same resources outside the university is expensive ... university laboratories enable students to conduct experiments, design, and develop prototypes play significant roles in succession as digital entrepreneurs. (Respondent 2, Interview session, 2024).

3.2.2 Influence of Innovation Space on the Performance of Digital Entrepreneurs

Similarly, the study examined the influence of innovation space on the performance of digital entrepreneurs. Obtained study findings indicate that the influence of innovation space on sales growth had a P value of $0.003 < 0.05$; the influence of innovation space on employment growth had a P value of $0.001 < 0.05$ and the influence of innovation space on product innovativeness had a P value of $0.042 < 0.05$.

Table 4: Influence of Innovation Space on Performance of Digital Entrepreneurs

Innovation Space	Coef.	Std. Err.	Z	P	[95%Conf. Interval]	
Sales Growth	.182	.198	1.92	0.003		0.571
_cons	2.070	.866	2.28	0.000	0.2017	4.770
					1.371	
Employment Growth	.135	.154	2.88	0.001	.167	.439
_cons	3.358	.674	3.98	0.000	2.035	4.680
Product Innovativeness	.123	.113	1.09	0.042	.098	.354
_cons	3.734	.494	7.56	0.000	2.766	4.703

Source: Field Data, (2024)

Also, the semi-structured interview revealed that innovation space with facilities had a positive impact on the performance of digital entrepreneurs as respondents mentioned:

.... Innovation space provided students with the perfect environment to collaborate and innovate. ... accessibility to facilities including co-working spaces, meeting rooms, and labs for prototyping development... fostered creativity and teamwork. ... University innovation spaces allowed students to freely experiment and rapidly iterate digital entrepreneurial ideas, leading to a succession of innovations to digital startups... (Respondent 8, Interview session, 2024).

4. Discussion

The technology training, experts, and guidance were found to contribute highly significant levels of increasing sales growth, employment growth, and product innovativeness to the students found at UDICT. Moreover, the findings disclosed that technology training provided by the internal and external experts was positively affecting the students to increase the sales of developed digital tools, equipment apps, and software developed from the UDICT space. Also, was found that students were easily accessible through UDICT whereas mentorship was easily made, and gradually students' digitally augmented ideas were changed towards the development of unique digital and technological products. Likewise, was found by Pokidina et al. (2023) that the training enables capacitating and influencing shifting of expertise for better performance.

Certainly, the digital product developed at UDICT was not only easily accessible to the market but also works as an open space where different stakeholders meet with student innovators, networking with different industrial practitioners and companies hence employment accessibility and growth. Audretsch and Belitski (2023) and Ullah et al. (2023) insisted that industry and firms possess valuable contributions to foster innovative education practices such as the provision of capital, networking, tools, equipment, and devices. The implication is made on the findings that HEI needs to open its doors share experience with industrial and field practitioners, and adopt curriculum flexibilities to engage more practical aspects than theories. Also, the suggestion is made that the 4IR teaching and learning process needs leverage of multiple expertise for the betterment of bringing new experiences and shaping the future workforce.

The dependent variables of laboratory and innovation space to the independent variables of sales, employment growth, and product innovativeness showed positive significant levels by P being less than 0.05. It is therefore portrayed that, access to UDICT lab allowed students as incubates to undertake different practical activities related to the digital prototypes and artifacts development that provide the solutions to existing socio-economic problems. Likewise, scholars found that the provision of free innovation working space enabled the students to explore, design, develop, try-outs, and shape the developed incubated digital artifacts in a friendly and conducive manner (Kruger & Steyn, 2024; Wang, 2023).

Nonetheless, the findings implied that student-incubates are mentored, and supported technically, materially, and financially to reach the intended digital project objectives. Moreover, the provision of innovation space implied that students-incubated are in a position to network and share ideas among themselves henceforth developing confidence in innovation procedures and processes. Certainly, the laboratory and innovations spaces are mentioned by Sun & Sun (2023) as pillars for inducing critical thinking, collaboration, communication, and creativity (4Cs) for discovery as pillars highly required in 4IR. The recommendation was made that the hands-on activities, developed digital artifacts, and application from UDICT are important in future sustainability and paradigm shift for action research holding findings to solve real existing problems.

5. Conclusion and Recommendation

The conclusion is made that HEI must adopt the components of OI in developing innovation hubs like UDICT where the students will access training, mentorship, expert guidance, a laboratory with learning materials, and free innovation spaces that together shape today's HEI to evacuate from the content to digitalized skills, innovation and talents development for sales, employability, and product innovativeness.

The findings highlight the need for incubators within higher education institutions (HEIs) to adopt structured approaches that integrate open innovation (OI) principles by providing students with access to advanced infrastructure, expert mentorship, and collaborative spaces, incubators can foster the development of market-ready skills and innovations. Moreover, strengthening partnerships with industries is essential for bridging the gap between academic

learning and practical applications. Furthermore, incubators should implement robust monitoring systems to track and improve the journey of innovations from ideation to commercialization.

For policymakers, the findings underscore the importance of creating a supportive ecosystem for innovation hubs. Policies should incentivize industry-HEI collaborations, fund resource allocation for state-of-the-art facilities, and ensure curricula and incubation programs align with labor market needs. Establishing standardized mentorship guidelines and accreditation systems can enhance the quality of innovation programs, fostering employability and entrepreneurship. These efforts collectively enable HEIs to evolve into centers of innovation, equipping students with the skills, creativity, and expertise required to thrive in the modern workforce.

Moreover, the future study recommendations are in the following aspects: -

- i. Participation of industrial practitioners to enable HEI students to gain practical experiences and competencies.
- ii. Explore the mentorship procedures offered to students incubates at the HEI to support practical learning aspects.
- iii. Assessing the legitimacy of student-incubate graduates in securing labor market jobs.

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Single Custom Territory and Market Seeking FDI Inflows: Evidence from Selected Countries in Sub-Saharan Africa

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ABSTRACT

This study investigated the impact of Single Custom Territory (SCT) on Foreign Direct Investment (FDI) in selected countries of Sub-Saharan Africa (SSA). The study employed quantitative methods using the Difference in Difference (DID) econometric technique to establish empirical evidence. The treatment and control groups were; the East African Community (EAC) member states and control group was the randomly selected Sub Sahara African countries respectively. The time series data set from the World Development Indicators (WDI) for the period of 2000 to 2019 was used. The main findings demonstrate that EAC Single Custom Territory has a significant and positive impact on Foreign Direct Inflow (FDI). The study implies that SSA should embrace a joint effort through SCT to increase the market size and boost their level of economic performance through; FDI inflow, cost reduction and cross border procedures during cross boader transport of goods. Also, EAC governments should invest in strengthening their cooperation by working closely to mitigate challenges in the implementation of SCT to reap its maximum goals.

Keywords: *foreign direct investment, single custom territory.*

1.0 Introduction

For the past quarter of a century, globalization has shown an impressive rise in global Foreign Direct Investment (FDI). Despite such growth in global FDI, Sub Saharan Africa has recorded a declining share of global FDI from 5.1 per cent in 2009 to 3 per cent in 2012 as compared to 26.0 per cent for Asia and 11.9 per cent for Central and South America (Darley, 2012). When compared to GDP levels, this figure is far less because the regional share is just 2.44 per cent of global GDP (Juma, 2012).

Some efforts have been put forth by SSA countries to attract FDI including; creating special investment zones and Export Processing Zones (EPZs), by providing investment incentives such as tax holidays that allow for duty-free imports of capital goods, production materials, and equipment. However, despite these efforts, SSA did not benefit from FDI from the 1980s to the 1990s. For example, it received only \$256 million in 1980 and \$9 billion in 1999, whereas the other developing countries attracted FDI inflows of \$7 billion in 1980 and \$216 billion in 1999 (Ideue, 2018).

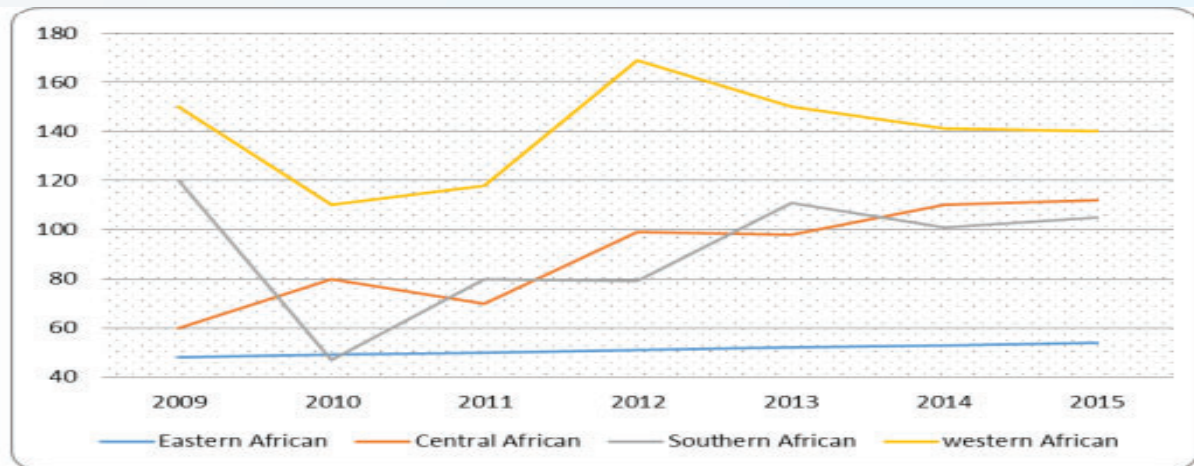


Figure 1.1: Trends of FDI inflow in SSA by sub region from 2009 to 2015(in '0' US \$ Billion)

Source: UNECA (2016)

In addressing the challenges of inadequate FDI inflows in Sub Saharan Africa some countries have embarked on joint initiatives while others continued to act independently. In 2014 for instance, the East African Community (EAC); Tanzania, Kenya, Rwanda, Uganda, and Burundi signed the treaty to implement a *Single Customs Territory (SCT)* by its member states. In a short period SCT has been impactful by the removal of restrictive regulations and minimization of internal border restrictions on goods moving between the member states with an ultimate realization of free circulation of goods.

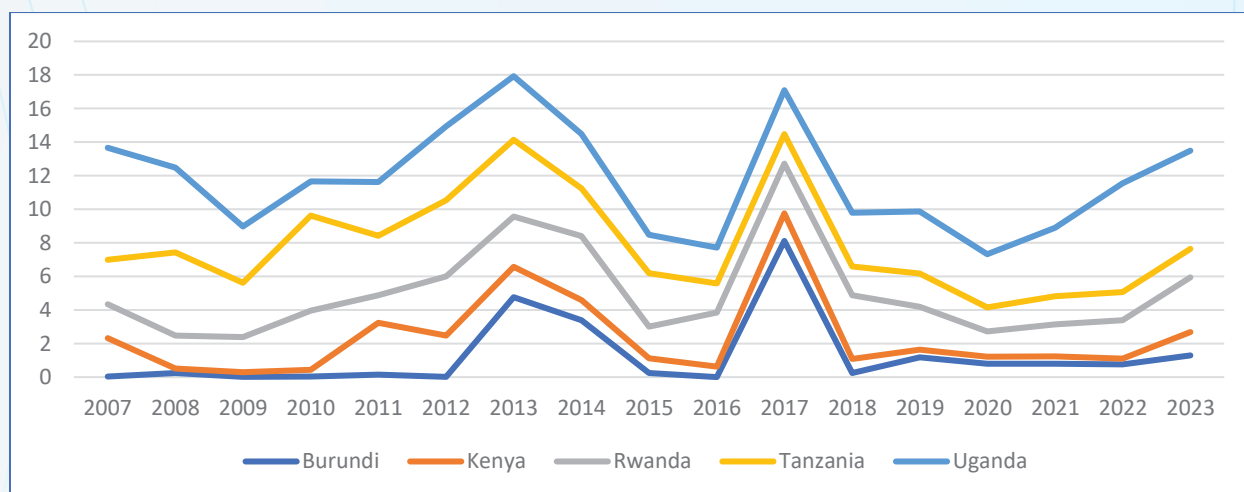


Figure 1.2: Trends of FDI inflows in EAC by country from 2007 to 2023(in % of GDP)

Source: WDI (2024)

Despite such initiatives put forth by EAC, some of the remained states in SSA have not embraced such approach and continued to act individually on their own perspectives in improving trade and investment inflows. This study therefore examines the impact of SCT on FDI inflows to countries which have adopted SCT against countries which have not adopted SCT based on EAC as a treatment case.

1.0 Objectives

2.4.1 General Objective

To explore the impact of single custom territory on FDI in selected countries in SSA.

2.4.2 Specific Objectives

- i. To examine the effect of SCT adopted by EAC on FDI inflows compared to similar effect on countries which did not adopt SCT in SSA.
- ii. To examine the differences in FDI inflows to the EAC member states which adopted SCT based on market size compared to countries which did not adopt SCT in SSA; and
- iii. To examine the differences in FDI inflows to the EAC member states which adopted SCT based on access to seaport compared to countries which did not adopt SCT in SSA.

1.1 Rationale of the Study

The contribution of this proposed study stems on a novel idea on a comparative study between countries (in this case East African member states) which adopted an impactful SCT and other economies which did not in Sub Saharan Africa. SCT is believed to have increased business and investment inflows to EAC within a short period after being implemented. The achievements include but not limited to removal of hurdles to investment inflows in EAC through an agreed and recognized snap shot documentation at borders that is accepted by the rest of the members states regardless of which country approved the documents at entry point (Darley, 2012). Knowing the importance of SCT may encourage other countries to benchmark on the best practice of EAC on SCT to revamp the sluggish pace of economic development through FDI attraction especially in SSA region which experiences inadequate FDI inflows.

2.1 Related Literature

2.1.1 OLI Electric Theory of Market Seeking FDI

The theory underpinning this study is OLI Electric Theory of Market Seeking FDI. Dunning (1988) defined OLI as Ownership advantage; Location advantage and Internationalization. The emphasis in the study is given to Internationalization in which; countries of FDI origin would wish to land their investments by taking advantage of the existing market niches of its prospective goods and services to be manufactured in the host countries. He further explained

that internalization is preceded by realizing Ownership advantage through ownership of monopoly power, technology and economies of scale. The second to ownership is Locational advantage postulating economic, social and political advantages within the host countries which are necessary for investment decision.

The SCT implies unified system of member states as one market, the united EAC sub region based on SCT terms provides conducive market through free movement and seamless movement of products just after entry to one of the member states boarder without boarder restrictions to other sovereign states. This removal of restrictions provides attractive environment to Multinational Companies to invest in EAC by taking advantage of existing market boosted by boarder free movement of partner states members.

2.1.2 Summary of Empirical Review

Little is known on the impact of single custom territory on foreign direct investment in Africa. This is because most of the studies conducted by various researchers such as Kamau and Odongo (2020), Mbwapbo (2020), Mpakaniye (2017) mainly focused on SCT effect on trade. This study explores the impact of SCT on FDI in SSA countries which has not been conducted in existing literature and therefore; gives recommendations in accordance to the revelation of the study. The study focuses on SSA states which adopted a SCT, based on comparative Difference in Difference (DID) approach to provide a comparative finding between SSA countries which adopted SCT as treatment group and SSA countries which have not adopted SCT as a control group.

3.0 Methodology

3.1 Research Approach

The study will employ the quantitative research approach and experimental strategy which seeks to determine if a specific treatment influences an outcome /impact by providing a specific treatment to one group and withholding it from another (Control Group), as the enquiry strategy for the study.

3.2 Econometric Model and Specification

The study employs Difference in Difference (DID) econometric technique that provides a comparative analysis between a treatment and control groups based on before and after time demarcations. Consider an experiment set to evaluate the impact of exogenous interventional shock such as policy that requires outcomes comparison between the effected/treatment group to an unaffected /control group, supported by time bound before and after the shock. In the same manner let's assume that there are two regions A and B subject to before and after shock context. Both regions are equally exposed to a shock free environment before a shock. The intervention time provides a cut off line into before and after periods. Assuming that region B is suddenly subject to shock intervention and exposed to after effects that result into a notable difference of group B relative to group A. The difference may be due to the shock intervention,

but also might be due to other key characteristics that varies between the two groups which also determines the outcome differences, e.g. region A might be subject to different weather condition relative to region B which might be a contributing factor to the outcome difference in the level of business performance for instance. If the outcome is sales volume which also depends on whether that varies in the two regions, a favorable weather in region B relative to region A might also contribute to a better performance of group B apart from a shock intervention exposed to group B that needs to be evaluated. A better remedy for this overlapping is to evaluate the impact of the intervention by controlling for other characteristic difference between the two regions. It's difficult to control for unobservable characteristics, even if we have enough data to control observable ones.

However, apart from the difference in characteristics that might contribute positive changes experienced by region B, it might also be contributed by other changes in a course of intervention apart from the shock that cannot be captured. Now consider a double approach that comprises of after and before associated with the treatment and control group comparative approach.

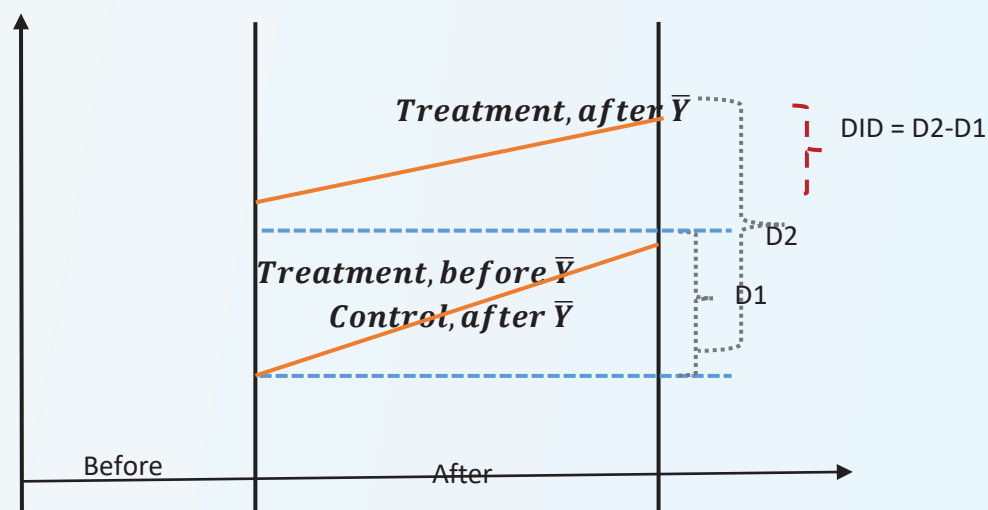


Figure 1.1: Difference in Differences Illustration
Source: Researchers' Own Construction

If the after and before difference in the control group emanates from the same difference in the treatment group, then if other changes that occur over time are also present in the control group, then these factors are controlled for when the control group after and before difference is netted out from the impact estimate.

Also, if there are important characteristics that are determinants of outcomes and that differ between the treatment and control groups, then, as long as these treatment and control group differences are constant over time, their influence is eliminated by studying changes over time so is for any time invariant unobservable characteristics which are also netted out.

Alternatively, the following mathematical equations elucidate the above pictorial presentation. Let us consider a two-group scenario $\{G= 1, 2\}$ in two different periods $\{T=1, 2\}$. Initially at

T₁, both groups are exposed to control status. At T₂ is when only G₂ is exposed to treatment status, let $T_g=1$ represents a dummy variable capturing group 2 observations at T₂ while $P_t=1$ represents a dummy variable capturing treatment period 2 observations. In the two periods two groups DID, the treatment variable is simply the product of these two dummy variables: $D_{gt}=T_g \times P_t$. This is because $D_{gt}=0$ is when both groups are exposed to the first period because $P_t=0$ and $T_g=0$; and $D_{gt}=1$ only happens when the second group is exposed to the treatment because this is when both T_g and P_t dummies are equal to 1. Let's further assume that untreated expected outcome is given by

$$Y(0)_{gt} = \beta_0 + \beta_1 T_g + \beta_2 P_t + \varepsilon_{gt} \dots \dots \dots (1).$$

Before and shock intervention, the expected outcome in the first group is β_0 in the first period while in the second period is $\beta_0 + \beta_1$. The expected untreated outcome in the second group is equal to $\beta_0 + \beta_1$ while in the second period is $\beta_0 + \beta_1 + \beta_2$. We assume a common trend applies where the coefficient on T_g provides a time-invariant difference in expected outcomes between the two groups. The group coefficient includes the combined effects of all the constant differences between the two groups and during the study period. Likewise, the coefficient P_t captures the changing combined effects between the two periods which also affect outcomes similarly in both cases. Practically, β_1 is termed as the group effect and β_2 the time trend. Basically, the model for the expected treatment outcome is the sum of untreated outcome and treatment effect, which is usually constant across observations:

$$Y(1)_{gt} = Y(0)_{gt} + \beta_3 \dots \dots \dots (2)$$

Thus generally the overall outcome is expressed as;

$$Y_{gt} = Y(0)_{gt} + D\{Y(1)_{gt} - Y(0)_{gt}\} \dots \dots \dots (3)$$

Replacing the outcomes notations with the model specification it gives;

$$Y_{gt} = \beta_0 + \beta_1 T_g + \beta_2 P_t + \varepsilon_{gt} + D_{gt}\{\beta_0 + \beta_1 T_g + \beta_2 P_t + \varepsilon_{gt} - Y(0)_{gt}\} \dots \dots \dots (4)$$

In the two-group two-period model, $D_{gt} = T_g \times P_t$, which implies that after cancelling the $Y(0)_{gt}$ terms we to obtain the standard DID estimation equation:

$$Y_{gt} = \beta_0 + \beta_1 T_g + \beta_2 P_t + \beta_3 (T_g \times P_t) + \varepsilon_{gt} \dots \dots \dots (5)$$

3.3 Identification Strategy and Estimation Technique

The DID econometric estimation technique was directly adopted from the aforesaid theoretical model as follows;

$$Y_{gt} = \beta_0 + \beta_1 T_g + \beta_2 P_t + \beta_3 (T_g \times P_t) + \varepsilon_{gt} \dots \dots \dots (6)$$

where; Y_{gt} treatment outcome in this case FDI inflows while, $\beta_0, \beta_1, \beta_2$ are constant terms for group and period coefficients respectively where β_3 is DID coefficient. T_g is a group dummy 1 if is in treatment (firms which opted for SCT) and 0 otherwise, P_t is period dummy 1 if is after treatment period and 0 otherwise, $(T_g \times P_t)$ is a composite interaction term of the treatment effect while ε_{gt} is a composite error term. The model was executed under other key assumptions of DID model including the common trend parallel assumption, time invariant group characters and period time-variant attributes and strictly exogenous policy intervention.

3.4 Data and Data Source

The study employed data from a reliable source; the World Development Indicators (WDI) which provides FDI data for the countries worldwide. The FDI inflows data from 2003 to 2019 was considered the time period before the implementation of SCT by EAC member states which is from year 2000 to 2013, and the time period after implementation of SCT which is from year 2014 to 2019.

Table 3.1: The list of Member States Included in the Sample

S/N	Country	Group	Location
1	Tanzania	Treatment group	East Africa
2	Kenya	Treatment group	East Africa
3	Burundi	Treatment group	East Africa
4	Rwanda	Treatment group	East Africa
5	Uganda	Treatment group	East Africa
6	South Sudan	Control group	East Africa
7	Malawi	Control group	Central Africa
8	Mozambique	Control group	South East Africa
9	Mali	Control group	West Africa
10	Cameroon	Control group	West Africa
11	Ethiopia	Control group	East Africa
12	Djibouti	Control group	Horn of Africa
13	Zambia	Control group	Central Africa
14	Eritrea	Control group	East Africa
15	Somalia	Control group	East Africa

Source: WDI (2023)

Treatment group is the EAC member states which adopted SCT while the control group was remaining countries in SSA which adopted SCT strategy. The list of countries involved in the study is indicated in Table 3.1

4.0 Empirical Results

This section presents a discussion of the results obtained from the research. After a pre-estimation test for a common trend parallel assumption comes the baseline and primary results of the investigation. In the end, it discusses the robustness analyses that were done in order to evaluate the baseline findings on FDI based on SCT shocks to the EAC in comparison to the benchmark group that are non- EAC.

4.1 Baseline Results

Hypothesis (i): *There is no significant difference between countries that adopted a single custom territory and those that did not in terms of FDI inflow.* This null hypothesis was tested using the Difference-in-Difference econometric technique. The result indicates the proportion of variance in the dependent variable that is explained by the model's coefficient for the treatment variable, which is SCT proxied by DID. The findings presented in Table 4.1 indicate that the DID variable is positive and statistically significant at one percent significance level. Therefore, the null hypothesis (H_0) was rejected and the alternative hypothesis (H_1) accepted. This suggests that there is a substantial difference in FDI inflow between countries in SSA that adopted SCT and those which did not. Based on estimation (1) on average, EAC member states that adopted SCT experienced a 6.5270 increase in FDI inflows compared to selected SSA member states that did not adopt SCT. The reason for relatively higher FDI to the EAC could be attributed by the availability of unified large market and investment catchment area because of SCT initiative of the EAC. Based on FDI theory by Dunning (1993) larger markets are more likely to attract FDI than smaller markets.

Table 4.1: Baseline Model on the Impact of SCT on FDI Inflows to EAC which Adopted SCT

VARIABLES	(1) FDI	(2) FDI	(3) FDI	(4) FDI
DID	6.5270*** (2.347)	7.8917*** (2.219)	6.6283*** (2.213)	6.5270*** (2.347)
Treatment	-14.5135*** (4.081)	-11.6361*** (1.408)	-15.0345*** (4.354)	
Time	-6.8510 (5.018)	-2.9283 (2.306)	-7.3006*** (2.057)	-6.8510 (5.018)
Constant	22.8458*** (4.397)	13.5651*** (3.528)	22.4121*** (3.884)	8.3323*** (2.981)
Year Dummy	Yes	Yes	No	Yes
Country Dummy	Ys	No	Yes	Yes
Observations	186	186	186	186

Robust standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

4.2 Robustness Checks

4.2.1 Market Size

Hypothesis (ii): *There is no significant difference in the Impact of SCT on FDI Inflow between large and small market economies within EAC compared to economies which did not adopt SCT in SSA.* This null hypothesis was also tested using a difference-in-difference econometric technique and a comparative analysis between countries in the treatment group between EAC member states with large market size and EAC member states with small market size to determine if there were differences in FDI inflows. Korsak (2017) analyzed the economies of the East African Community by defining their population size, therefore in this study Tanzania, Kenya and Uganda termed as large market economies with the population of more than 30 million people while Rwanda and Burundi as small market economies with the population of less than 30 million people. The first row of Table 4.2 Displays the coefficient of EAC member states with large and small market sizes respectively.

The estimates of the key variable DID for small and large market economies are positive and statistically significant by at least five per cent significance level. The null hypothesis (H_0) was therefore rejected, and the alternative hypothesis (H_1) was accepted. Based on estimation (1) and (3), the coefficients for large and small markets are 6.3513 and 6.6021, respectively. This implies that even though EAC enjoys marketing seeking FDI inflows explained by Dunning (1993), the asymmetrical inflow of FDI is evident between large and small economies in EAC. It is very interesting that even small market economies indicate higher affinity to attracting FDI versus large market economies {6.6021:6.3513}. The probable reason could be unutilized opportunities within small economies due to the fact that priority for market seeking FDI investors is normally given to large market economies meaning that small countries come next after depletion of investment opportunities in large economies. Given the FDI inflow pace in African counties which gained momentum in 1980's, it is more likely that if from the beginning investors priority was given to large market economies in EAC, to date most of investors must have shifted their interest to small market economies other things being equal.

Table 4.2 Impact of SCT on FDI Inflow for EAC Based on Market Size

	Large Market		Small Market	
VARIABLES	(1) FDI	(2) FDI	(3) FDI	(4) FDI
DID	6.3513*** (2.374)	6.5046*** (2.222)	7.3864*** (2.666)	8.7833*** (2.374)
Treatment	-8.5604*** (2.348)	-12.5587*** (1.505)	-15.4894*** (4.608)	-10.4470*** (1.602)
Time	-5.1793 (5.535)	-2.5232 (2.434)	-7.3006*** (2.061)	-6.5250*** (1.845)
Constant	9.6131*** (3.319)	12.3896*** (3.858)	22.4121*** (3.892)	12.8146*** (1.214)
Year Dummy	Yes	Yes	No	No
Country Dummy	Yes	No	Yes	No
Observations	159	159	145	145

Robust standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

4.2.2 Location

Hypothesis (iii): *There is no significant difference in the Impact of SCT on FDI Inflow between landlocked and close to seaport economies within EAC compared to economies which did not adopt SCT in SSA.* This null hypothesis was also tested using DID econometric technique and a comparative analysis between countries within EAC member states which are landlocked and EAC member states which have access to seaports in order to determine if there were differences in FDI inflows based on such locational differences. The first row of Table 4.3 (across column 1&2 and 3&4) displays the coefficient magnitudes of EAC member states which are landlocked and EAC member states which have access to seaports respectively.

The estimates of the key variable DID for landlocked and seaports access economies are positive and statistically significant by at least five per cent significance level. The null hypothesis (H_0) was therefore rejected, and the alternative hypothesis (H^1) was accepted. Based on estimation (1) and (3), the coefficients for landlocked and seaport access are 7.1994 and 5.6589, respectively. Landlocked economies indicate higher affinity to attracting FDI versus seaport access economies (7.1994:5.6589). The probable reason for relatively higher inflow level of FDI to landlocked could also be unutilized opportunities within landlocked economies due to the fact that before SCT priority was given to seaport access economies meaning that landlocked countries come next after depletion of investment opportunities in close to seaport access economies. It is more likely that from the beginning investors priority was given to close to seaport access economies in EAC due to geographical bottlenecks such as long distances to markets and higher transaction costs which characterize landlocked countries. Due to establishment of SCT some of the obstacles have been reduced and therefore, most of investors must have shifted their inflows to landlocked economies.

Table 4.3 Impact of SCT on FDI Inflow for EAC Based on location

	Landlocked		Seaport Access	
VARIABLES	(1) FDI	(2) FDI	(3) FDI	(4) FDI
DID	7.1994*** (2.350)	8.0584*** (2.159)	5.6589** (2.554)	6.2673** (2.446)
Treatment	-15.3772*** (4.444)	-10.7591*** (1.398)	-8.3924*** (2.367)	-12.7672*** (1.582)
Time	-7.3006*** (2.060)	-6.5250*** (1.843)	-3.4868 (6.152)	-2.5606 (2.503)
Constant	22.4121*** (3.889)	12.8146*** (1.213)	9.6831*** (3.576)	12.3088*** (4.248)
Year Dummy	Yes	Yes	Yes	Yes
Country Dummy	Yes	No	Yes	No
Observations	158	158	146	146

Robust standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

5.0 Conclusion and Policy Implication

This study was conducted with the intention of investigating the impact that SCT has on FDI inflows based on market seeking theory. The study used the DID econometric model to establish empirical evidence. It adopted the quantitative research approach as its method of investigation. The treatment group consisted of the member states of the EAC, and the control group was randomly chosen countries from the SSA. To reveal empirical evidence, we utilized the time series data set that was compiled by the WDI and covered the period from 2000 to 2019. The findings revealed that EAC SCT have a significant impact on FDI inflows to EAC economies.

The findings indicate that due to the implementation of SCT, even small market economies have relatively attracted more FDI compared to large market economies. This may be because before SCT, small market economies were unable to attract significant FDI due to their market size as FDI is concerned with the size of the market in developing countries (Dnning 1988). Countries with large markets have a higher potential for FDI inflows than those with small markets not on a per capita basis, but rather in aggregate size (Akin, 2009). Due to SCT, the size of the market of small market economies has increased in aggregate.

Furthermore, the findings have established that due to SCT land-locked nations have experienced more FDI inflow compared to countries in close access to seaports. This may be because initially the bottlenecks experienced by such countries and issues with high transport costs, complicated cross-border procedures, long distances, and isolation from the global market mainly caused by limited access to the seaport which impeded such countries from attracting significant FDI inflows. However, with SCT, the cost of transportation and cross-border procedures have been reduced, hence more investments.

The study recommends that SSA countries should embrace a joint effort through SCT to increase the market size which will boost the level of economic performance and reduce cost and cross border procedures during transportation of goods for economic growth.

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Towards Improved Quality of Information Services: Is Perception and Satisfaction Significant?

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Abstract

This study sets out an overview of how information units would in turn make an effective assessment of quality of information services on offer. The study used postgraduate business students as Mzumbe University to ascertain the impact of perception and satisfaction on improved quality of information services. SERVIQUAL (LibQUAL+™) model was used to govern this study. Data were collected through questionnaire and analysed using correlation and descriptive statistics methods. The study findings revealed that perception and satisfaction had positive and significant impact on the improved quality of information services. The study further concluded that perception and satisfaction that arose from users positively and significantly at less than 0.05 significance level and thus being effective in impacting improved quality of information services. The study recommends for information units to gauge users' expectations as well to set an equilibrium while ascertaining the quality of underlying services since improved quality requires both high positive perception with high level of satisfaction.

Keywords: *user perception, quality of information services, service quality*

Introduction

User satisfaction with services provided in information unit is essential for quality teaching and learning, research, and community service provision. Generally, most information units perceive service quality as a driving force for outstanding service delivery (Naidu, 2019). Previously, assessment of quality of information service on offer based on collection size and usage patterns as earmarked by underlying statistics. These strategies were deficient in meeting information needs of the users (Cullen, 2001). With the emergence of innovative mechanisms such as the use of LibQUAL+™ instrument, the quality of library services in libraries is now also assessed by understanding users' perception of the quality of library services on offer (Majumdar, 2023). Use of instruments such as LibQUAL+™ is likely to enhance the validity of assessment of quality of service delivery from the users' perspectives.

Users' perception of the quality of information services constitutes a management tool for examining how the library effectively meets the users' expectations and needs as well as determining the strengths, weaknesses and opportunities stemming from the services delivered for the purpose of identifying better ways of refining the quality of services on offer (Adam, 2017). For instance, information units have been wrongly based on what passes to be users' perception of service quality and, thus, the quality of library services provided has remained unsatisfactory (Masoy, 2019).

Furthermore, the assessment of the users' perception of the quality of services gets higher attention in business firms but less attention in service provision organisations including academic libraries (Thusithakumar, 2020). Information users to some extent lack opportunities to show how they perceive the quality of services on offer. As a result, it is difficult to understand how they perceive the quality of respective services and at what level they may be satisfied with such services provided for retention purposes (Rita, Oliveira & Farisa, 2019).

Despite the invention of modern tools such as LibQUAL+™, which are used to assess the quality of information services provided by libraries, many libraries still use traditional methods to establish the collection size, circulation statistics and number of users visiting the library in their assessment of the quality of library services (Mayende, Awuor & Namande, 2021). Yet, these traditional methods have failed to indicate user expectations, perceptions and satisfaction with the services on offer, thus failing in many cases to provide the kind of quality services that meet the information user needs (Moses *et al.*, 2016; Cristobal, 2018).

Similarly, despite the fact that more than a decade has passed since LibQUAL+™ was tested in assessing quality of information services at Mzumbe University library, the University library still uses traditional methods for assessing the quality of information services and experiences low utilisation limited remote access to remote information services, an indication of poor provision of information services (Isibika and Kavishe, 2018; Mosha, 2021). Consequently, the traditional methods used to assess the quality of information services at Mzumbe University do not capture the users' perception of and satisfaction with the quality of information services on offer, thus failing to establish whether users were satisfied with the services.

In interrogating the matter, this study will be guided by the following

- i. Users' perception has positive impact on improved quality of provided information services
- ii. Users' satisfaction has positive impact on improved quality of provided information services

Literature Review

Conceptualizing Quality of Information Services

User satisfaction is one of the key areas of concern in the library and information profession (Muthuvennila & Kannan, 2021). This is particularly so in teaching and learning institutions where libraries support learning processes. Service quality is perceived by academic libraries as a driving force for excelling in service delivery (Naidu, 2019). User satisfaction with services provided in academic libraries is essential in engendering quality research as well as the teaching and learning process. Collection size, user statistics and suggestion boxes are commonly used as strategies for gauging user satisfaction. But these strategies are not very effective in identifying the information needs of the users (Kalankesh, 2020) from the users' perspective. As alluded to by Donati, Festo and Consolata (2024), the incorporation of users' expectations and user needs into the provision of library services is one of the effective ways

of boosting the quality of library services. This marked the shift from traditional methods of assessing service quality in libraries to modern methods motivated by developments and change in technology. With the emergence of innovative mechanisms in technology the quality of services of different institutions, including academic libraries incorporated tools that involve users' perception to improve service quality (Msamula, 2015).

Users' Perceived Quality of Information Services in Libraries

Adam (2017) assessed the library service quality and user satisfaction among undergraduate students in Nigeria and found that, students are highly satisfied with the quality of library services. This satisfaction was basically with the library collection, reference services and library seating arrangement. Cristobal (2018) examined the library users' minimum acceptable, desired, and observed service performance level of the University of Saint Louis (USL) College Library using the LibQUAL+™ instrument. The study found that the users were satisfied with circulation, library instruction, current awareness, reference, multimedia service, and depository area services provided by the library. The areas of users' satisfaction and results on the role of libraries in disseminating information in both print and electronic environment indicate low performance in delivery of electronic services at USL mainly attributable to limited internet access time (10 hours) per student throughout the semester.

Khaola and Mabilikoane (2015), who investigated the perception of library service quality, satisfaction, and frequency of use of library resources using LibQUAL+™ instrument, found a strong and positive correlation between service quality and user satisfaction. Findings established that there was no relationship between usage statistics and satisfaction, hence indicating that assessing service quality based on usage statistics is no longer effective in establishing users' satisfaction as it does not influence satisfaction. Moreover, such measures are not necessarily related anyhow to the impact quality of service delivery. Newane's (2016) assessment of the users' perceptions of service quality and level of user satisfaction in South Africa found that the frequency of postgraduate students' use of the library was low because they both worked and studied, and treated studying as their part-time task. Besides, results show that the overall quality of the services provided by the library was perceived to be good.

Nyantakyi-Baah's (2016) study on the users' perception of the service quality and value of libraries in Ghana found that university students use libraries for various purposes including borrowing and reading library materials, working on assignments/projects, reading personal notes, preparation for examinations, consulting reference materials, accessing the Internet and reading newspapers. Furthermore, users had very high expectations of the library but they were largely not met as the quality of library services available was wanting.

Msamula (2015) carried out a study on service quality in academic library in Tanzania with specific reference to Mzumbe University's main campus library. Though this study did not use the LibQUAL+™ instrument, the study findings show that students, as part of academic library users, were satisfied with library procedure for processing library cards, readiness of staff to respond to queries, and procedures for paying overdue charges. Simba (2006), on the other hand, examined the users' perceptions of the quality of service at the Iringa University College

Library of Tumaini University, Tanzania. This study used LibQUAL+™ and involved more male than female respondents. The findings show that the majority of the respondents used the library and its resources daily but used its information gateways weekly.

Studies on user perception of libraries' service quality reviewed indicate slight differences on the users' perception of the quality of library services. However, the use of the LibQUAL+™ instrument for the assessing quality of library services facilitates capture of statistical and non-statistical elements during the evaluation of the quality of library services. Therefore, this study used the literature reviewed to indicate the strengths, weaknesses and knowledge gaps which can theoretically be used to add to the existing body of knowledge and support study findings.

Users' Satisfaction with Information Services in Libraries

The practice that users have about service quality in academic libraries varies depending on the continued experience that users gain from the service offered in the course of time (Kiran, 2010). The perceptions and expectations that library users have of the quality of library services provided are marked as fundamental in determining customer satisfaction with the services provided (Cristobal, 2018). A critical concern that most of academic libraries have is on achieving the highest level of service satisfaction among users (Kaur and Singh, 2010). Academic libraries need to anticipate dynamic changes of the users' needs continuously since fulfilment of each user need serves is essential in enhancing user satisfaction (Ahmad and Abawajy, 2014). User satisfaction in libraries is based on factors such as the availability of up-to-date information, visibility of library facilities to the users, ease of the resources' accessibility, good communication and friendliness of library staff to users during service provision (Thakuria, 2007). Through the assessment of user perceptions and expectations, an academic library can evaluate the state of satisfaction of its users once users are highly satisfied with the services provided. The services provided can of good quality; however, when users' satisfaction is low the implication is that the services provided are poor or irrelevant (Sajna and Mohamed, 2016). Nevertheless, user satisfaction cannot stand alone as an indicator of the quality of library services despite being an essential indicator of the provision of valuable services to the users and when users are highly satisfied, they value them as good quality services.

Users' Assessment on Quality of Information Services

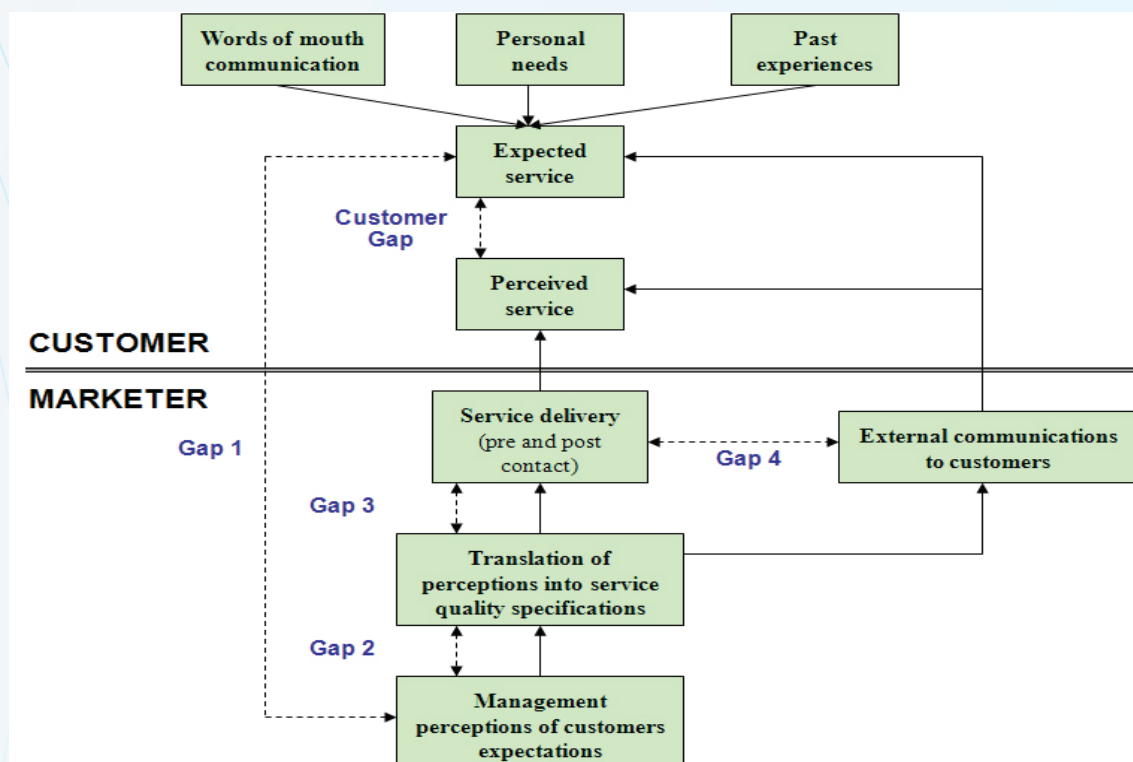
Assessment of quality of information service has been performed when the service has been experienced by the users. Knowledge of the service delivered can either make the expectations lower than the perception of quality-of-service delivery or otherwise which influence users' satisfaction (Alan *et al.*, 2016). Identification of the drawbacks in information service provision help information units including libraries to make changes aimed to meet and sustain appropriate standards which are essential for ensuring satisfactory service delivery (O'Neill and Palmer, 2017). However, knowledge on the situations both before and after the service provisions is important in enhancing the identification of deficiencies in the quality of information services (Mbise, 2015).

Tools for Assessing Quality of Information Services

Assessing the quality of information services is important in the management of academic libraries and application of management tools for the delivery of services (Melo and Sampaio, 2019). Traditionally, common tools for assessing the quality of information services comprised the use of circulation statistics, size of available collections, and the number of users entering a library of any other information unit which are no longer significant (Sahu, 2020). The change in information and communication technology has transformed how libraries gather, process, organise, store, retrieve and disseminate information, hence necessitating a change in the tools used in assessing service quality of information services as well in preference for modern tools such as the Total Quality Management (TQM), SERVIQUAL and LIBQUAL, which are highly recommended due to their significance in assessing the quality of library services in both the print and electronic environments (Thakuria, 2017; Ahmad and Abawajy, 2018).

Theoretical Model: SERVIQUAL

This study was guided by the service quality model, namely the SERVIQUAL developed by Parasuraman, Zeithaml and Berry in 1985 which is the bases for LibQUAL+TM that assesses the perceptions of customers of the quality of library information services provided. The model helps to determine gaps and linkages that exist between the service provider (marketer) and the user of particular service (customer) whereby on the customer's part elements including personal needs, expected service and perceived service are aligned whereas on the marketer's part elements such as service delivery (pre and post contact), translation of perceptions into service quality specifications and management perceptions of customer expectations are provided to represent service quality (Parasuraman, Zeithaml and Berry, 1985).

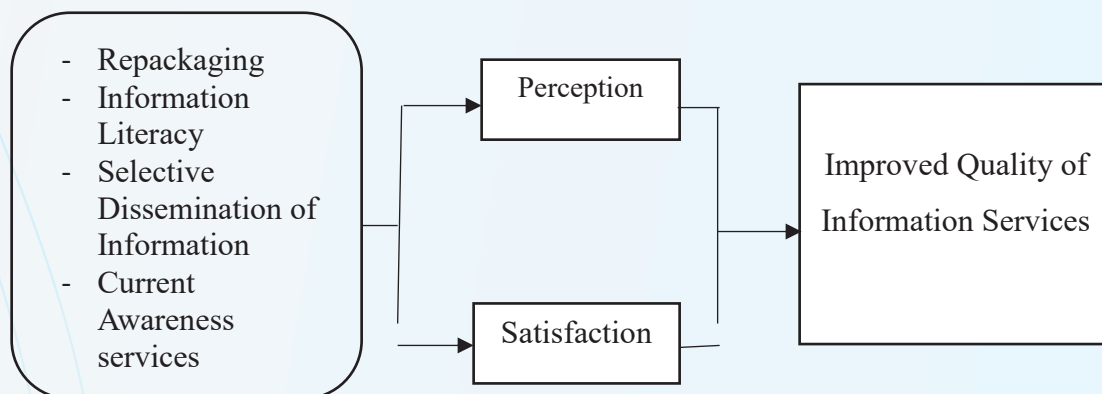


From the given model, the study used customer variables only, which are, personal needs, perceived services and expected services. These are integrated with five (5) elements/dimensions of service quality. The five elements/dimensions are: 1) tangibles (appearance of physical facilities, communication materials, personnel, and equipment), 2) reliability (ability to accurately accomplish the described service), 3) responsiveness (staff willingness to assist users), 4) assurance (staff ability and knowledge to convey confidence and trust to users), and 5) empathy (individual attention and care that service organization offers to users).

The use of SERVQUAL was of paramount importance as it is a tested instrument that is used relatively for benchmarking motives which can be administered repeatedly on a regular basis, thus producing valid outcomes (Shahin, 2006). The adopted SERVQUAL model served as a guide in this study as it is the most experimented upon model that has successfully been tested as an instrument by a number of scholars (Bhim, 2010). This instrument has been used to assess quality of services in various context including academic libraries and its drawbacks pale before the comparative strengths it engenders in assessing service quality (Zeshan, Afridi, and Khan, 2014).

Conceptual Model

The conceptual framework provided shows the relationship between independent variables (information repackaging, information literacy, current Awareness Services (CAS), Selective Dissemination of Information (SDI) and reference services), intervening variables (perception and satisfaction) and the dependent variable (improved quality of information services).



The conceptual model presents repackaging as one of the information services under this study. The variable indicates that information is collected with vagueness and thus it needs to be grouped into specific forms or categories to be easily understood by the target groups. With information repackaging, users once they perceive the repackaged information as useful and satisfied with it then contributes towards improved quality.

Information literacy forms another information service designed to suit information users. Information literacy refers to the ability that user expects to find, evaluate, organize, use, and disseminate information for meeting prescribed need. Therefore, if an information unit

provides effective information literacy to users and such service is perceived positively and users are satisfied with it, then it contributes towards improving quality of information services.

Selective Dissemination of Information (SDI) is another information service that this study investigates its relationship with improved quality of information services. Selective dissemination of information refers to the service offered to user of information based on their needs, areas of specialization and special request made by them to the information units. If an information unit appropriately select information for a certain user and such information is perceived useful and users have satisfied with it then it contributes towards improved quality of information services.

Current Awareness Services (CAS) also form another information service that is assumed to contribute towards improved quality of information services. With current awareness services refers to the service that intends to alert users on newly received/acquired information resource in the collection of an information unit. When an information unit effectively conduct this service and the users perceive it effective and being satisfied with it then it contributes in improving quality of respective service and if not vice versa prevails.

Methodology

Research Design

This study used a descriptive research design. Descriptive research design was used in this study because allowed the researcher to collect large amounts of data at a time and respondents were able to described how they perceived the quality of information services.

Study Area

The study was carried out at Mzumbe University (MU) main campus which is located in Mvomero district in Morogoro region. The MU main campus was selected primarily because a decade ago, LibQUAL+™ pioneers did a pilot test of the tool in assessing quality of information services offered but the University still utilizes traditional tools. The use of MU therefore was appropriate to ascertain the study gaps.

Population

The population of this study comprised postgraduate (master's and PhD) students in the business administration programme at Mzumbe University in Morogoro region, Tanzania. Postgraduate students in the business administration programme were chosen because they were being prepared to be business managers and entrepreneurs whereby service quality is the utmost success factor for customer loyalty and retention.

Sampling Method

This study used total enumeration sampling method to incorporate all 41 postgraduate (master's and PhD) students in the business administration programme s study respondents. The method was used since the population was little to the extent that sampling could be nearly impossible and thus the whole population was included.

Sample Size

Sample size for this study was 41 postgraduate (master's and PhD) students in the business administration programme at Mzumbe University. The sample was attributed to the total enumeration sampling method employed in which the whole study population turned into study sample size.

Data Collection Tools

This study used semi structured questionnaire adopted and modified from LibQUAL+™ instrument to collect data from postgraduate business students. The questionnaire comprised closed and open-ended questions that were derived from 22 core LibQUAL+™ elements plus 5 additional elements. A total of 41 questionnaires were distributed to the respondents and successfully returned. Twenty-one (21) questionnaires were self-administered whereas 20 were mailed to the respondents.

Furthermore, the questionnaires were pre-tested to five (5) postgraduate students of the University Dar es Salaam Business School (UDBS) since they had similar professional traits with the respondents of the study at the MU. Although LibQUAL+™ is a standardized tool, the researcher pre-tested the questionnaire developed based on LibQUAL+™ because the core 22 LibQUAL+™ elements were customised to suit the study's context.

Data Analysis

The study data were analysed using descriptive and inferential (Pearson correlations) statistics to establish the significance of perception and satisfaction on improved quality of information services.

Validity and Reliability

This study used criterion validity to ensure that the study produced valid findings. A standard benchmark for assessing service quality in libraries named LibQUAL+™ instrument based on SERVIQUAL model was used to enhance the validity of the study findings. LibQUAL+™ was used to enhance the validity of the study as it is a recognised instrument that a number of scholars in Information Science (Ncwane, 2016; Nyantakyi-Baah, 2016; Adam, 2017; Cristobal, 2018) have applied to assess service quality in the information settings.

To ensure reliability of the measuring instrument, the researcher correlated the findings to check the level of Cronbach alpha internal consistency of variables tested.

High internal consistency was found on the measuring instrument as internal consistency represented by Cronbach alpha values greater or equal (\geq) to 0.7 were found to signify high internal consistency between correlated variables and low variance. Thus, the measuring instruments were reliable and can produce almost the same results once the test is repeated.

Table 1 presents the results of the reliability tests.

Table .1: Reliability Test of Variables

Variable	Cronbach's Alpha
Perception	.952
Satisfaction	.892

High internal consistency was found on the measuring instrument as internal consistency represented by Cronbach alpha values greater or equal (\geq) to 0.7 were found to signify high internal consistency between correlated variables and low variance. Thus, the measuring instruments were reliable and can produce almost the same results once the test is repeated. Table 1 presents the results of the reliability tests.

Findings and Discussion

Demographic Profile of Respondents

Gender, education, and age categories of respondents were assessed in this study to ascertain their relevance of engagement in this study.

Table 1: Demographic Profile of Respondents

Category	Descriptions	Frequency	Percent
Gender	Male	18	44
	Female	25	61
	Total	41	100
Education Level	PhD	8	19.5
	Masters	33	80.5
	Total	41	100
Age Categories	18-30	22	53.7
	31-50	17	41.5
	51 and above	2	4.9
	Total	41	100

Female respondents, masters level of education and 18-30 age category emerged with highest responses. Regarding gender, the findings confirm an observation made by Wallentine (2017) that business schools are progressively experiencing an increase in the number of female students, hence creating a possibility of bridging the gender gap in the number of male and female students enrolled. On education levels, findings corresponded to the requirement raised by Unwana and Men (2017) commented that the availability of users of information units including academic libraries with distinctive higher academic qualifications such as master's and PhD requires quality services to make sure that they become efficient users of offered information services.

Descriptive Statistics Results

The results of the descriptive statistic revealed that perception had mean score of 2.853 with a minimum of 1.25 and maximum of 3.25 and a standard deviation of 1.133; satisfaction had mean score of 2.018 with a minimum of 1.01 and maximum of 2.60 and a standard deviation

of 0.512; improved quality of information services had mean score of 1.923 with a minimum of 1 and maximum of 1.75 and a standard deviation of 0.377; Furthermore, the study distributions test being Skewness and Kurtosis were also undertaken. For Skewness, the study findings showed that perception, satisfaction and improved quality of information services, the skewness values were less than 1. On the side of Kurtosis, the study findings showed that perception had -1.720 and satisfaction had 0.145 while improved quality of information services had 0.884.

Table 2. Descriptive Statistics of Results

Variables	N	Min	Max	Mean	Std. Deviation	Skewness		Kurtosis	
						Statistics		Statistics	
						Std.		Std.	
						Error		Error	
Perception	41	1.25	3.25	2.853	1.133	-.055	.288	-1.720	.428
Satisfaction	41	1.01	2.60	2.018	0.512	.611	.288	.145	.428
Improved quality of information services	41	1.00	1.75	1.923	0.377	.758	.3288	.884	.428

Study findings in Table 2 showed that data of the study variables being perception, satisfaction and perceived quality of information services were close to each other based on minimum and maximum entities with an average variance of 2. Mean and standard deviations had very slight difference implying that the study data had high level of significance.

For the Skewness, it was observed that perception and quality of information services were positively skewed. For Kurtosis, perception, satisfaction and perceived quality of information services had negative Kurtosis since values across variables were less than 3. Findings thus signifies that data employed in this study follows a normal distribution with medium tails and not very high degree of peakedness.

Information Services

Various information services offered were identified for the purpose of informing the industry as shown in Figure 1.

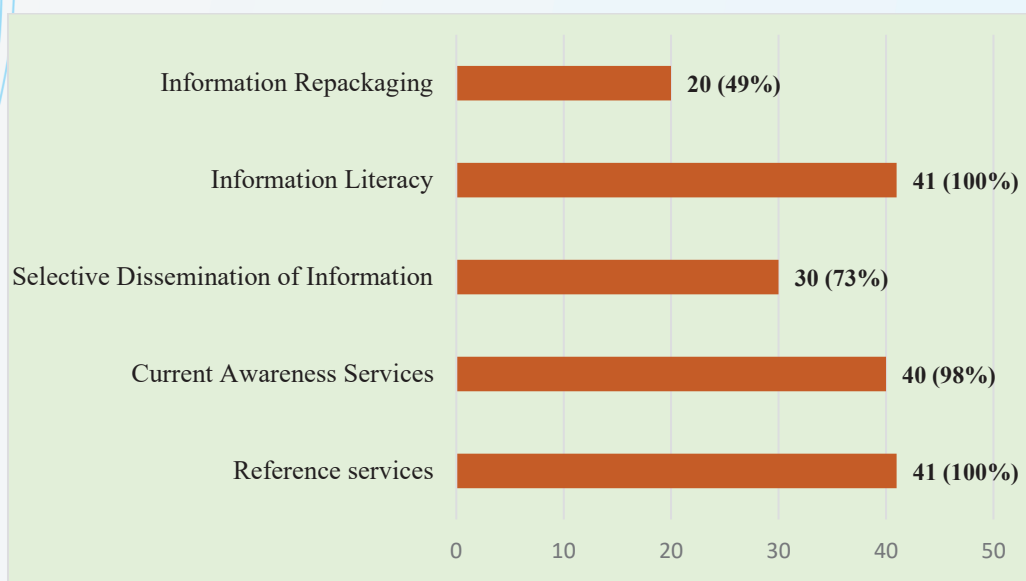


Figure 1: Information Services Offered

Study findings revealed five (5) important information services that ought to be delivered in information units including libraries. The obtained services without considering their ranking included information repackaging, information literacy, Selective Dissemination of Information (SDI), Current Awareness Services (CAS) as well as reference services. These services have emerged as pillar for information advocacy and thus being offered assures the establishment and existence of information society.

Impact of Perception and User Satisfaction on Improved Quality of Information Services

Pearson correlation test was carried out to establish the thought relationship and impact that perception and satisfaction would bring to perceived quality of information services considering the information services offered.

Table 3. Impact of Perception and Satisfaction on Improved Quality

	Perception (P)	Satisfaction (S)	Perceived Quality of Information Services (PQIS)
Perception	1		
Satisfaction	0.003	1	
PQIS	0.001	0.026	1

**** Correlation is significant at the 0.01 level (2-tailed)**

The study findings revealed that perception and satisfaction had significant relationship with improved quality of information services. The study findings connect with Okolo (2022) who reported the essential role played by information units including libraries in providing perceived useful information services that satisfy the information needs of the users. In line

with that, Research Information Network (RIN) contends, information units place much emphasis on developing and sustaining their physical and electronic collections to meet information needs of users as per specific information service inquiry (RIN, 2020). With such obtained study findings, a close correlation was established between perception, satisfaction, and improved quality of information services. In line with what this study established, Thuannadee (2022) also revealed that perception and satisfaction were relatively related to improved quality of information services and thus correlates to each other. Obtained findings verifies the foundation of this study that improved quality of information services would relatively consider how such services are perceived by users and the level of satisfaction excelled. Furthermore, the study findings revealed that the significance of perception and satisfaction variables in this study implies the overall average satisfaction of information services at MU as supported by Msamula (2021) who found that MU users though at medium level, they were also satisfied with the overall quality of information services provided at the library.

Conclusion and Recommendations

Towards improved quality of information services, it was established that perception and satisfaction that arose from users positively and significantly impact improved quality of information services. The study findings imply that perception that users had with the actual satisfaction are diverse and thus affecting the overall satisfaction with information services at MU. The study recommends for information units to gauge users' expectations as well to set an equilibrium while ascertaining the quality of underlying services.

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Assessing Customer Satisfaction in Tanzania's Non-Life Public Insurance Sector: A SERVQUAL Model Approach at the National Insurance Corporation

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Abstract

This research explores the assessment of service quality's impact on customer satisfaction within Tanzania's non-life public insurance sector, focusing on the National Insurance Corporation (NIC). The study addresses assessment of the service quality on customer's satisfaction in non-life public insurance sector. The research design adopts a cross-section approach to provide a comprehensive understanding of the research problem. The study's population comprises 120 employees, selected using a random sampling technique. This research aims to contribute valuable insights to enhance service quality and customer satisfaction within Tanzania's non-life public insurance sector. The study found that customers who were accessing non-life public insurance services at NIC were satisfied with the timeliness of responding to their problems or enquires, this is due to the fact that the management of NIC have a specific and automated system known as Customer Relationship Management (CRM) where customers can submit their enquiries or make contacts through the system and the management responds immediately after receiving the submitted enquiries or problems from the customer. Also, the study found that few of the respondents were dissatisfied with the reliability of services offered by the National Insurance Corporation (NIC) compared to the customers who were satisfied. NIC can give customers access to information, product or service catalogs, NIC provides visually attractive, offices, equipment, and materials to customers, NIC provides a variety of entertainment facilities to customers, NIC has favorable terms and conditions to customers. The study concluded that increase in responsiveness, reliability, tangibles, empathy and assurance in delivering non-life insurance services to customers increases the level of satisfaction among the customers. The study recommended that, NIC should conduct specialized training programs focused on developing empathy and emotional intelligence. This includes active listening, recognizing emotional cues, and responding appropriately to customer emotions.

Keywords: *Customer's Satisfaction, Non-Life Public Insurance Sector, Service Quality.*

7. Introduction

Non-life public insurance refers to insurance policies that cover all types of risks other than life insurance. This includes property, liability, health, and accident insurance provided by government or public entities (Rhena, 2021). Non-life public insurance covers damage or loss of property due to events like fire, theft, natural disasters, protects individuals and businesses from legal liabilities due to accidents, injuries, or negligence, costs associated with accidents, including medical expenses and loss of income (Fheme, 2020). At the global level; non-life public insurance plays a crucial role in the global economy and society in various ways; helps individuals and businesses manage risks associated with property damage, liability, health issues, and accidents. By providing a safety net, it ensures that unforeseen events do not lead to financial ruin (Bennkn, 2019). Non-life public insurance programs stabilize economies among the developing and developed countries by spreading risk across a large pool of participants in economic booming among the nation members of the United Nations. This can help prevent economic shocks from natural disasters, major accidents, or health crises (UN, 2022).

Also, some of the African countries like South Africa, Malawi, Zimbabwe, DR Congo, Egypt and Somalia are prone to natural disasters such as floods, droughts, and earthquakes whereby public insurance programs help mitigate the financial impact of these events on individuals, businesses, and governments, facilitating quicker recovery and rebuilding efforts (Dannel, 2016). Non-life public insurance, such as crop and livestock insurance, provides a safety net for farmers against adverse weather conditions, pests, and diseases, ensuring food security and economic stability (ibid). Non-life public insurance programs help increase financial inclusion by providing access to insurance products for low-income and marginalized African communities that empowers individuals to manage risks and build financial resilience (Haknni et al, 2019).

In Tanzania, non-life public insurance plays a crucial role by protecting businesses from risks related to property damage, theft, and liability, public insurance encourages entrepreneurship and investment (Shenn, 2016). This drives economic growth, job creation, and poverty reduction. Tanzania is susceptible to various natural disasters, including floods, droughts, and earthquakes. Public insurance helps mitigate the financial impact of these events, aiding in faster recovery and reducing the economic burden on affected communities and the government (Ghene, 2020). Public insurance programs in Tanzania, such as crop and livestock insurance, provide farmers with a safety net against adverse weather conditions, pests, and diseases, ensuring food security and economic stability.

Despite of this importance of non-life public insurance to the community, customer satisfaction in non-life public insurance faces several global challenges. These challenges often stem from the complexity of the insurance process, lack of transparency, slow claims handling, inadequate digital infrastructure, and regional disparities. Addressing these problems requires a concerted effort to enhance the customer experience across all touchpoints (Wissa, 2029). Different countries in the word have been faced with various problems associated with customers' satisfaction on non-life insurance and they have tried to come up with various mitigation

measures to curb the problems. For instance, insurance policies are often difficult to understand due to complex terms and conditions, poor digital infrastructures and insufficient, leading to poor online services have contributed to increase poor non-life insurance services provision in some of the developed and developing countries (Gwemen, 2021).

Various steps have been taken to solve the problem of customer dissatisfaction on non-life insurance services including simplifying policy documents and provide clear, concise explanations. Using plain language and visual aids to help customers understand coverage, exclusions, and the claims process (Wideer, 2020) invest in robust digital platforms, including websites and mobile applications, that allow customers to review their policies, report and file claims, and inquiring for customer services easily. Ensure these platforms are user-friendly and accessible across different devices.

Insurance in Tanzania for non-life is controlled by the Tanzania Insurance Regulatory Authority (TIRA) under the Insurance Act No. 10 of 2009 (the Insurance Act, 2009). TIRA oversees, supervises, regulates, and controls the insurance and reinsurance industry in Tanzania. The authority establishes and enforces national rules for the conduct of insurance and reinsurance industry (TIRA Report, 2022). People get general insurance to protect their economic resources. Other than life insurance, general insurance encompasses all types of insurance (Agnes et al., 2023). Consequently, according to the TIRA analysis, as a result of using such a strategy, the country enjoyed economic growth, albeit at a slower rate of 4.9% in 2021 compared to an average growth rate of 6.7% during the preceding five years (TIRA Report, 2022). General insurance covers property from fire, burglary, and other immovable property, among other things. Non-life or general insurance covers non-life things such as animals, agricultural produce, goods, factories, cars, and so on (Jones et al., 2017). Individual behavior losses are also covered by non-life insurance (Naik & Panicker, 2018). Therefore, through the Tanzania Insurance Management Authority, the National Insurance Corporation (NIC) has an impact on regulation of non-life insurance sector and , solvency monitoring-based regulations with few entry limitations have shown to be the most effective (TIRA Report, 2022). When it included restrictions on prices, availability, and profitability, it was more detrimental (Naik & Panicker, 2018).

Hence, in Tanzania, the assessment of service quality in the non-life public insurance sector is especially pertinent due to its potential impact on consumer trust and the overall growth of the industry. The study aims to identify specific challenges and opportunities within the Tanzanian context, offering actionable recommendations for policymakers, insurers, and other stakeholders to enhance service quality and, consequently, customer satisfaction.

8. Literature Review

2.1 Theoretical Literature Review

This part concerns with various theories involved in the study;

2.1.1 Service Quality Theory

The SERVQUAL Model, developed by Parasuraman, Zeithaml, and Berry in the 1980s, is a widely used framework to measure service quality by assessing the gap occurring between customer expectations and their perceptions of the actual service received (Zeithaml et al., 1993). According to (Gangil & Vishnoi, 2020) the model identifies five key dimensions of service quality including Reliability; explains the ability to perform the promised service dependably and accurately, Assurance; explaining the knowledge and courtesy of employees and their ability to convey trust and confidence, Tangibles; the appearance of physical facilities, equipment, personnel, and communication materials. Empathy; the provision of caring, individualized attention to customers and Responsiveness; the willingness to help customers and provide prompt service.

The service quality model involves in determining on how customers perceive or react on the new products or service offered by the company or seller. It reflects the organization's willingness to go the extra mile for customers. Also, it focuses on the care and attention that service providers extend to customers. It involves understanding customers' individual needs, showing empathy, and providing personalized services. According to (Kavitha et al., 2012) this model is typically assessed through a combination of customer expectations and perceptions. Customers are being asked to rate their expectations of service quality and their actual experiences (perceptions) across each of the five factors. The difference between expectations and perceptions provides insights into the quality-of-service delivery. Therefore, this model could be applied to evaluate the quality of services dimensions (reliability, responsiveness, assurance, empathy, and tangibles) provided by non-life public insurance. And the model has contribution on the influence of perceived service quality on customer loyalty in non-life public insurance in this study.

2.1.2 Expectancy – Disconfirmation Theory

The Expectancy-Disconfirmation Theory was first introduced by Richard L. Oliver in his 1980 article titled "A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions" describes that, this is psychological framework that describe individual perceptions and their actual experiences with a product, service, or situation (Oliver, 1980). According to study by (Tien et al., 2021) The expectations are influenced by factors such as prior experiences, marketing messages, word-of-mouth, and personal needs. Also, study by (Thangadurai & Rahim, 2015) described that the perceived Performance are After the actual experience with the product or service, individuals assess how well it performed compared to their initial expectations. This perceived performance is a subjective evaluation of the quality, efficiency, and overall outcome of the experience. The Expectancy-Disconfirmation Theory highlights the significance of managing customer expectations and delivering experiences that align with or exceed those expectations. It acknowledges that customer satisfaction isn't solely determined by the objective quality of a product or service but also by how well that product or service meets or surpasses initial expectations (Hennayake & Hennayake, 2017). Hence, this theory shows the relationship between customer expectations, perceived service performance, and satisfaction.

Therefore, these theories provide comprehensive understanding of service quality and customer satisfaction in the non-life public insurance.

9. Methodology

In this section, research design, population, sampling and sample size, data collection and analysis were presented thereof.

9.1 Research Design

The study used a cross-section research design method to guide the study. The study adopted the cross-section study design simply because it provides a snapshot of a particular moment, allowing researchers to identify patterns, relationships, and prevalence of certain characteristics or outcomes within the studied group (Kothari, 2016).

This study was guided by the following research questions;

- vi. How does responsiveness of non-life public insurance facilitate customer needs?
- vii. How is the reliability of services to customers in non-life public insurance?
- viii. What are the tangibles of services to customers in non-life public insurance?
- ix. How does the empathy of service providers facilitate customer satisfaction?
- x. How is the assurance of services to customers in non-life public insurance?

9.2 Population and Sampling

9.2.1 Population

In this study, the targeted population was non-life insurance customers and staff at National Insurance Corporations (NIC) in Dar es Salaam, Tanzania. It is important to define the population from NIC clearly and accurately in research because the validity of the findings depends on how the sample represents the population. According to (NIC Tanzania, 2023) number of employees at headquarters in Dar es Salaam are 114 employees are among population of the study. Approximately number of customers at NIC more than 114 companies served.

9.2.2 Sampling and Sample Size

The study employed a simple random sampling technique to get a sample size from the study population by using a standardized sampling formula known as Yamane's sampling formula. 92 respondents were chosen to constitute a sample size.

9.3 Data Collection and Analysis

The main purpose of the study was to assess the service quality on customer's satisfaction in non-life public insurance sector in Tanzania. Hence, in order to ensure collection of data which is free from biasness, author used structured questionnaire and documentary review as the data collection methods. Further, the data was analyzed using Probit linear regression model and descriptive statistics to address the research questions.

10. Results and Analysis

This part presented the findings and analysis of the study

10.1 Profiles of Respondents

The study intended to analyze sex of the respondents involved in the study with purpose of keeping gender equality and to discover the responses on the research questions between male and female. The findings showed that (59.6%) of the respondents were male and (40.4%) were female. Moreover, the study sought the description of the respondents by their age groups and findings revealed that majority (49.3%) of the respondents had age range of 21 – 30 years and few of them (5.3%) had age range of 41 – 50 years. Furthermore, the study sought the description of the respondents by their levels of education. findings divulge that majority of the respondents (64%) had bachelor degree education level. (13.3%) had master's degree, (12%) had tertiary education, (6.7%) had secondary education and (4%) had primary education.

Table 33. Profiles of Respondents

Parameters		Frequency	Percent (%)
Gender	Male	68	59.6
	Female	46	40.4
	Total	114	100.0
Age	21 - 30	58	50.9
	31 - 40	50	43.9
	41 - 50	6	5.3
	Total	114	100.0
Education Level	Primary education	3	4.0
	Secondary education	5	6.7
	Tertiary education	9	12.0
	Bachelor degree	48	64.0
	Master's degree	10	13.3

10.2 Responsiveness of Non-Life Public Insurance in Facilitating Customer Needs

This section sought to describe the responsiveness of the National Insurance Cooperation on providing nonlife insurance services to the customers in facilitating customer's expected needs from NIC. Analysis of the responsiveness of non-life public insurance services involved the analysis of timeliness of the response from the National Insurance Corporation (NIC) when addressing customer queries or concerns, effectiveness in handling customer inquiries and complaints, and customers' satisfaction on the overall responsiveness of the NIC in meeting customers' insurance-related needs.

4.2.1 Timeliness of the Response from the NIC when Addressing Customers' Queries or Concerns

Findings described in Figure 1 reveal that the majority (38.7%) of the respondents involved in the study commented that the timeliness of the response from the NIC when addressing customers' queries or concerns is good. This implies that customers who are accessing non-life public insurance services at NIC are satisfied with the timeliness of responding to their problems or inquiries, this is because the management of NIC has a specific and automated system known as Customer Relationship Management (CRM) where customers can submit their inquiries or make contacts through the system and the management responds immediately after receiving the submitted enquiries or problems from the customer.

Furthermore; the findings described in Figure 1 showed that the least (8%) of the respondents involved in the study commented that the timeliness of the response from the NIC when addressing customers' queries or concerns is very poor. Meaning that few of the customers who are accessing non-life public insurance services are not satisfied with the timeliness of receiving responses about their problems or concerns related to the services provided. Also, the findings showed that 36% of the respondents commented that timeliness of the response from the NIC when addressing customers' queries or concerns is fair, 10.7% commented that timeliness of the response from the NIC when addressing customers' queries or concerns is poor and 6.7% of the respondents commented that timeliness of the response from the NIC when addressing customers' queries or concerns is very good. Therefore, according to the customers' responses on the timeliness of the response from the NIC when addressing customers' queries or concerns it can be revealed that most of the customers accessing non-life public insurance are satisfied with the responsiveness of NIC staffs on facilitating customer needs specifically on timeliness of responses when addressing customers' problems or other concerns.

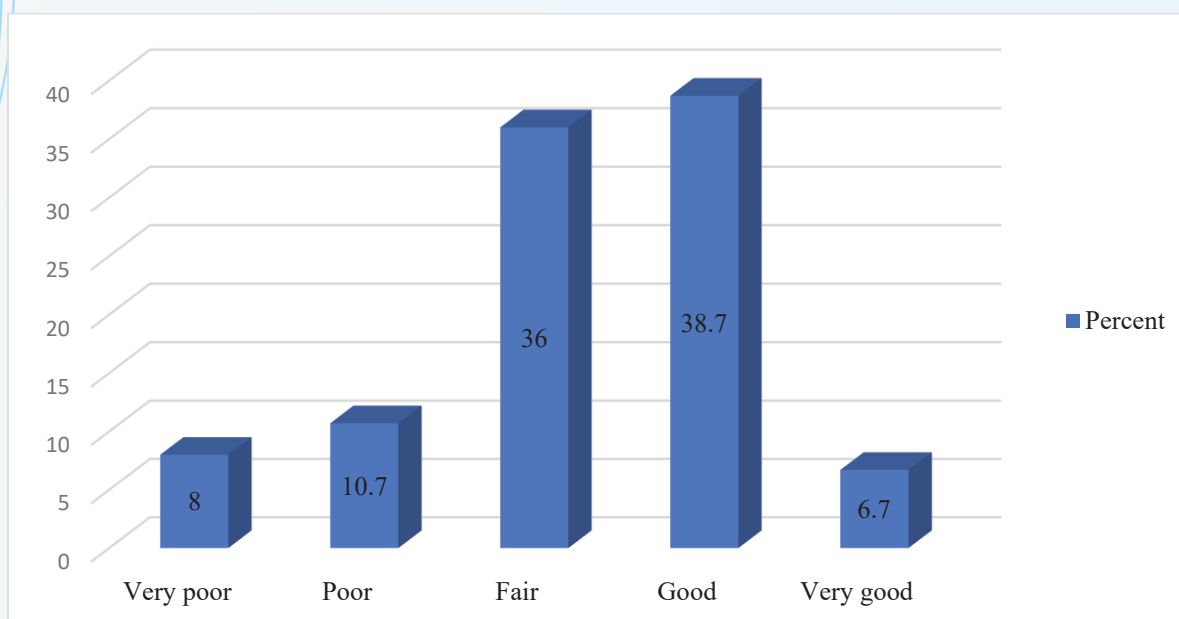


Figure 31. Respondents' Responses on Timeliness of Response from the NIC when Addressing Customers' Queries or Concerns

4.2.2 Assessment of the Responsiveness of Non-Life Public Insurance in Facilitating Customer Needs

Findings in Table 2 describes that responsiveness of National Insurance Corporation (NIC) on provision of non-life public insurance services is high due to the fact that the provided insurance services facilitate meeting customers' needs. The study found that the National Insurance Cooperation (NIC) can tell customers exactly when services will be performed (Mean = 4.45; Standard deviation = 1.596). the magnitude of the mean and the standard deviation tells that majority of the respondents slightly agreed with the statement that the National Insurance Cooperation (NIC) can tell customers exactly when services will be performed that increase satisfaction among customers on the services provided by NIC.

Also, the findings of the study described in Table 2 revealed that NIC can give prompt customer service and attend to customers' needs/problems (Mean = 4.75; Standard deviation = 1.586), NIC employees are always willing to help customers in emergencies (Mean = 4.89; Standard deviation = 1.689), NIC employees are approachable and easy to contact (Mean = 4.89; Standard deviation = 1.689), NIC Employees' can communicate clearly with the customer (Mean = 4.89; Standard deviation = 1.689) and I am getting as quick a turnaround as I need on requests for new reports or data (Mean = 4.89; Standard deviation = 1.689). The magnitude of the mean and standard deviation of the statements tells that respondent slightly agreed that NIC can give prompt customer service and attend to customers' needs or problems, NIC employees are always willing to help customers in emergencies, NIC employees are approachable and easy to contact, NIC Employees' can communicate clearly with the customer, and customers gets quick a turnaround as they need on requests for new reports or data.

Table 34. Responses on the Responsiveness of Non-Life Public Insurance in Facilitating Customer Needs

Statement	No. Respondents	Mean		Std. Deviation
		Statistic	Std. Error	Statistic
The National Insurance Cooperation (NIC) can tell customers exactly when services will be performed	75	4.45	.184	1.596
NIC can give prompt customer service and attend to customers' needs/problems	75	4.75	.183	1.586
NIC employees are always willing to help customers in emergencies	75	4.89	.195	1.689
NIC employees are approachable and easy to contact	75	4.85	.150	1.302
NIC Employees' can communicate clearly with the customer.	75	4.97	.160	1.385
I am getting as quick a turnaround as I need on requests for new reports or data.	75	4.52	.173	1.501

4.2.3 Customers' Satisfaction with the Reliability of Services Offered by the NIC

Findings described in Figure 2 revealed that majority (44%) of the respondents involved in the study were satisfied with the reliability of services offered by the National Insurance Corporation (NIC). This imply that customers accessing non-life public insurance services at NIC are satisfied with the accuracy and consistency of information provided by the NIC regarding insurance policies and procedures and trust among the customers on NIC to deliver on its promises regarding insurance coverage. Also, the NIC management keeps trust among the customers by responding quickly to the insurance requests submitted within Seven (7) working days that increase the level of trust among the customers knowing that their grievances be taken into consideration within short time. Furthermore, the findings of the study described in Figure 2 revealed that 30.7% of the respondents involved in the study were neutral meaning that they had no choice weather were satisfied or dissatisfied. About 12% of the respondents were very satisfied with the reliability of services offered by the National Insurance Corporation (NIC), 9.3% of the respondents were dissatisfied and 4% were very dissatisfied.

The findings of the study tell that few of the respondents involved in the study were dissatisfied with the reliability of services offered by the National Insurance Corporation (NIC) compared to the respondents who were satisfied. It means that the accuracy and consistency of information provided by the NIC regarding insurance policies and procedures and trust among the customers on NIC to deliver on its promises regarding insurance coverage is high that increase the level of satisfaction among customers accessing services at NIC.

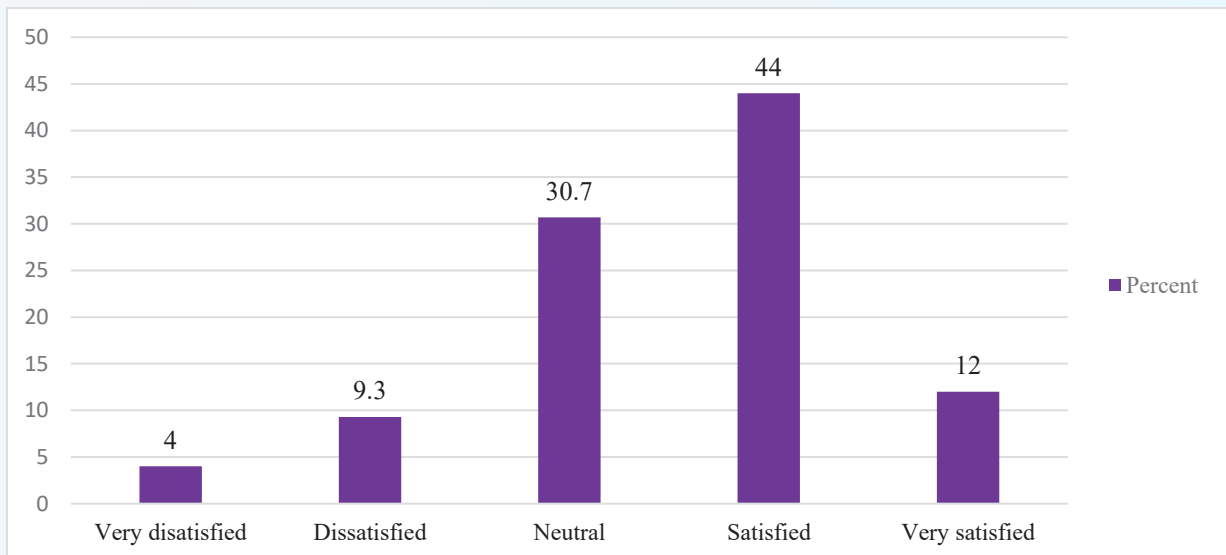


Figure 32. Customers' Satisfaction with the Reliability of Services Offered by NIC

10.3 Reliability of Services to Customers in Non-Life Public Insurance

Findings in Table 3 describes that the reliability of services to customers in non-life public insurance of National Insurance Corporation (NIC) is high due to the fact that the provided insurance services facilitate customers being satisfied with the services. The study found that the National Insurance Cooperation (NIC) has timely deliverance of insurance services to customers (Mean = 4.73; Standard deviation = 1.605). the magnitude of the mean and the standard deviation tells that majority of the respondents slightly agreed with the statement that the National Insurance Cooperation (NIC) has timely deliverance of insurance services to customers. Also, the findings of the study described in Table 3 revealed that NIC has been truthful (keeping to promises) to customers regarding insurance services (Mean = 4.68; Standard deviation = 1.749), NIC is dependable and consistent in solving customers' complaints (Mean = 4.64; Standard deviation = 1.666), NIC can perform services right the first time (Mean = 4.86; Standard deviation = 1.511), NIC can insist on error-free records (Mean = 4.51; Standard deviation = 1.545). The magnitude of the mean and standard deviation of the statements tells those respondents slightly agreed that the National Insurance Cooperation (NIC) has timely deliverance of insurance services to customers, NIC has been truthful (keeping to promises) to customers regarding insurance services, NIC is dependable and

consistent in solving customers' complaints, NIC can perform services right the first time, and NIC can insist on error-free records.

Table 35. Responses on the Reliability of Services to Customers in Non-Life Public Insurance

Statements	No. of Respondent	Mean		Std. Deviation
		Statistic	Statistic Error	Statistic
The National Insurance Cooperation (NIC) has timely deliverance of insurance services to customers	75	4.73	.185	1.605
NIC has been truthful (keeping to promises) to customers regarding insurance services	75	4.68	.202	1.749
NIC is dependable and consistent in solving customers' complaints	75	4.64	.192	1.666
NIC can perform services right the first time	74	4.86	.176	1.511
NIC can insist on error-free records	75	4.51	.178	1.545

10.4 Tangibles of Services to Customers in Non-Life Public Insurance

Findings from Table 4 describes that the tangibility of services to customers in non-life public insurance of National Insurance Corporation (NIC) is high due to the fact that the provided insurance services facilitate customers being satisfied with the services. The study found that NIC can give customers access to information, product/service catalogs (Mean = 5.03; Standard deviation = 1.786), NIC provides visually attractive, offices, equipment, and materials to customers (Mean = 4.67; Standard deviation = 1.359), and NIC provides a variety of entertainment facilities to customers (Mean = 5.83; Standard deviation = 8.323). The magnitude of the mean and standard deviation of the responses imply that customers agreed that NIC can give customers access to information, product/service catalogs, NIC provides visually attractive, offices, equipment, and materials to customers, and NIC provides a variety of entertainment facilities to customers.

Table 36. Responses on the Tangibility of Services to Customers in Non-Life Public Insurance

Statements	No. Respondents	Mean		Std. Deviation
		Statistic	Std. Error	Statistic
NIC can give customers access to information, product/service catalogs,	75	5.03	.206	1.786
NIC provides visually attractive, offices, equipment, and materials to customers	75	4.67	.157	1.359
NIC provides a variety of entertainment facilities to customers, etc.	75	5.83	.961	8.323

10.5 Empathy of Service Providers in Non-Life Public Insurance

Findings in Table 5 describes that the empathy of services to customers in non-life public insurance of National Insurance Corporation (NIC) is high due to the fact that the provided insurance services facilitate customers being satisfied with the services. The study found that NIC has favorable terms and conditions to customers (Mean = 4.73; Standard deviation = 1.465), NIC has operating hours convenient to all customers (Mean = 4.81; Standard deviation = 1.477), NIC has a sound loyalty program to recognize you as a frequent customer (Mean = 4.67; Standard deviation = 1.436), NIC makes efforts to understand specific customer needs (Mean = 5.00; Standard deviation = 1.366) and NIC apologizes for the inconvenience caused to customers (Mean = 4.97; Standard deviation = 1.294). The magnitude of the mean and standard deviation of the responses imply that customers strongly agreed that NIC has favorable terms and conditions to customers, NIC has operating hours convenient to all customers, NIC has a sound loyalty program to recognize you as a frequent customer, NIC makes efforts to understand specific customer needs and NIC apologizes for the inconvenience caused to customers.

Table 37. Responses on Empathy of Service Providers to Customers in Non-Life Public Insurance

Statements	No. of respondents	Mean		Standard deviation
		Statistic	Std. Error	Statistic

NIC has favorable terms and conditions to customers.	74	4.73	.170	1.465
NIC has operating hours convenient to all customers	75	4.81	.171	1.477
NIC has a sound loyalty program to recognize you as a frequent customer	75	4.67	.166	1.436
NIC makes efforts to understand specific customer needs.	75	5.00	.158	1.366
NIC apologizes for the inconvenience caused to customers	75	4.97	.149	1.294

10.6 Assurance of Services to Customers in Non-Life Public Insurance

Findings in Table 6 describes that the assurance of services to customers in non-life public insurance services provided by the National Insurance Cooperation (NIC) is high due to the fact that the provided insurance services facilitate customers being satisfied with the services. The study found that the behavior of employees of NIC instills confidence in customers (Mean = 4.76; Standard deviation = 1.550), Employees' use of required skills and knowledge to answer customers' questions (Mean = 5.00; Standard deviation = 1.602), Employees of NIC are consistently courteous with customers (Mean = 4.63; Standard deviation = 1.402), Ability to provide variety of value-added services to customers (Mean = 4.71; Standard deviation = 1.667). The magnitude of the mean and standard deviation of the responses imply that customers strongly agreed that the behavior of employees of NIC instills confidence in customers, Employees' use of required skills and knowledge to answer customers' questions, Employees of NIC are consistently courteous with customers and NIC staffs have ability to provide variety of value-added services to customers.

Table 38. Response on the Assurance of Services to Customers in Non-Life Public Insurance

Statements	No. Respondents	Mean		Std. Deviation
		Statistic	Std. Error	Statistic
The behavior of employees of NIC instills confidence in customers	75	4.76	.179	1.550

Employees' use of required skills and knowledge to answer customers' questions	75	5.00	.185	1.602
Employees of NIC are consistently courteous with customers	75	4.63	.162	1.402
Ability to provide variety of value-added services to customers	75	4.71	.192	1.667

Specific Observations:

In the methodology section the author said Probit linear regression model will be applied as the data analysis technique. However, Throughout the document no data analysis using Probit linear regression model. The Probit regression model is a type of regression used when the dependent variable is binary (i.e., it takes on two values, often coded as 0 and 1). It is commonly used in situations where researchers want to understand the probability that an event occurs based on one or more predictor variables. For example, in your study, the dependent variable might be whether a customer is satisfied (1) or not satisfied (0) with the service quality. The independent variables could include factors like service responsiveness, reliability, empathy, assurance, and tangibles. See an example below:

Assuming you ran a Probit regression analysis with the following results:

Table: Probit Regression Results on Customer Satisfaction in Non-Life Insurance

Variable	Coefficient (β)	Standard Error	z-Statistic	p-value
Service Responsiveness	0.35	0.10	3.50	0.0005
Service Reliability	0.50	0.12	4.17	0.0001
Service Empathy	0.25	0.09	2.78	0.0054
Service Assurance	0.40	0.11	3.64	0.0003
Service Tangibles	0.10	0.08	1.25	0.2110
Constant	-1.20	0.30	-4.00	0.0001

Interpretation of Findings

6. Service Responsiveness ($\beta = 0.35$, $p = 0.0005$): This positive coefficient suggests that as the responsiveness of the service increases, the likelihood of customer satisfaction also increases. The p-value indicates strong statistical significance ($p < 0.001$).
7. Service Reliability ($\beta = 0.50$, $p = 0.0001$): This variable has the highest coefficient, meaning it has a substantial positive impact on customer satisfaction. It is also highly

significant, indicating that reliability is a critical factor influencing customer satisfaction.

8. Service Empathy ($\beta = 0.25$, $p = 0.0054$): This positive coefficient indicates that greater empathy from service providers is associated with higher customer satisfaction, and the result is statistically significant.
9. Service Assurance ($\beta = 0.40$, $p = 0.0003$): Like reliability, assurance is also significantly related to customer satisfaction, suggesting that customers who feel assured by the service are more likely to report satisfaction.
10. Service Tangibles ($\beta = 0.10$, $p = 0.2110$): This variable does not significantly influence customer satisfaction ($p > 0.05$), indicating that while tangibles might have some effect, it is not strong enough to be statistically significant in this model.

11. Discussion and Implication

11.1 Discussion of Key Results

11.1.1 Responsiveness of Non-Life Public Insurance in Facilitating Customer Needs

Wilson (2021) conducted a study on the factors influencing customers' satisfaction on the non-life public insurance services in Kenya, the study found that, majority (82%) of the customers accessing non-life insurance services become satisfied with the non-life insurance services due to the insurance companies being responding to the customers concerns on time and through digitalized reporting systems without visiting the insurance company branches physically to submit their problems or concerns.

Rhenne (2022) conducted a study on the performance of insurance companies in providing non-life public insurances in Tanzania, found that good communication between customers and services providers, and developing systematic reporting channels between customers and the service providers contributes to the performance of the insurance companies by 79.9%. Also, the findings of the study are consistence with the Service Quality Theory whereby findings tell that the willingness and ability of the service provider to help customers promptly and address their needs, concerns, or inquiries. It reflects the organization's willingness to go the extra mile for customers.

Yunnis (2020) found that customer satisfaction with the reliability of non-life public insurance services can be influenced by several key factors including claim processing time revealed by speed of processing repayments, clear communication about the status of claims and what is needed from the customer enhance satisfaction among the customers accessing non-life public insurance services. Also, regular collection of customer feedback to identify and address issues and demonstrated efforts to improve services based on customer feedback, analyzing the nature and frequency of customer complaints to identify areas for improvement improves customers' satisfaction.

11.1.2 Reliability of Services to Customers in Non-Life Public Insurance

In this section it was observed that few of the customers involved in the study were dissatisfied with the reliability of services offered by the National Insurance Corporation (NIC) compared to the customers who were satisfied, these findings concur with Mimie (2022) who conducted a study on the performance of insurance companies in providing non-life public insurances in Kenya, although, it was founded that solving customers' claims and responding to their enquires on time, good communication between customers and services providers, and developing systematic reporting channels between customers and the service providers contributes to the increase of trust among the customers and customers becomes satisfied with the provided services regardless of the company performance in the insurance market. Also, the findings of the study are consistence with the Service Quality Theory whereby findings tell that the willingness and ability of the service provider to help customers promptly and address their needs, concerns, or inquiries. It reflects the organization's willingness to go the extra mile for customers.

11.1.3 Tangibles of Services to Customers in Non-Life Public Insurance

It was observed that NIC can give customers access to information, product or service catalogs, NIC provides visually attractive, offices, equipment, and materials to customers, NIC provides a variety of entertainment facilities to customers, NIC has favorable terms and conditions to customers. Likewise, Fenkin (2019) conducted a study on the impacts of Information Communication Technology on non-life insurance services performance among the public insurance companies in Tanzania, whereas, it was revealed that the performance of non-life insurance services can be influenced by providing visually attractive, offices, equipment, and materials to customers, clear and professional signage that reflects the organization's credibility and reliability, well designed, easy-to-read, and comprehensive documents that explain the terms, conditions, and coverage of insurance policies.

11.1.4 Empathy of Service Providers in Non-Life Public Insurance

Findings in this part revealed that NIC has operating hours convenient to all customers, NIC has a sound loyalty program to recognize as a frequent customer, NIC makes efforts to understand specific customer needs and NIC apologizes for the inconvenience caused to customers. The findings of the study were supported by Bagun et al (2021) found that, empathy plays a significant role in customer satisfaction, particularly in the context of non-life insurance companies by improving communication whereby empathetic customer service agents listen actively to customers' concerns, which helps in understanding and addressing their needs more effectively. Added that, empathetic employees better understand and anticipate the specific needs of individual customers, offering tailored solutions that enhance customer experience and satisfied customers are more likely to remain loyal and recommend the company to others, contributing to higher customer retention rates.

11.1.5 Assurance of Services to Customers in Non-Life Public Insurance

It was observed that NIC has created assurance of its services to customers due to improvements in the following areas; behavior of employees of NIC instills confidence in

customers, Employees' use of required skills and knowledge to answer customers' questions. Bannie (2022) conducted a study on the performance of insurance companies in providing non-life public insurances in Tanzania, whereas it was founded that employees' usage of required skills and knowledge to answer customers' questions, employees of being consistently courteous with customers and the ability to provide variety of value-added services to customers improves the performance of insurance companies and increase the level of customers' satisfaction. Also, the findings of the study are consistence with the Service Quality Theory whereby findings tell that the willingness and ability of the service provider to help customers promptly and address their needs, concerns, or inquiries. It reflects with the findings of the study that the behavior of employees of NIC instilling confidence in customers, employees' usage of required skills and knowledge to answer customers' questions, employees of NIC being consistently courteous with customers and the ability to provide variety of value-added services to customers' increases assurance of services to customers in non-life public insurance.

11.2 Implications

Implications for Research

The study on assessing customer satisfaction in Tanzania's non-life public insurance sector using the SERVQUAL model offers several implications for future research. Firstly, it contributes to the academic understanding of service quality and customer satisfaction within the insurance industry in developing countries, particularly in the context of Tanzania. The findings can serve as a basis for comparative studies across different regions or countries, enhancing the generalizability of the SERVQUAL model in various cultural and economic settings. Additionally, the research highlights potential gaps in the current literature, such as the need for more nuanced models that incorporate cultural factors and local market dynamics, paving the way for more context-specific studies. Future research could also explore the relationship between customer satisfaction and business performance metrics, such as customer retention, profitability, and market share in the Tanzanian insurance sector.

Implications for Practice

For practice, the findings of this study provide actionable insights for improving service quality in Tanzania's non-life public insurance sector. By identifying the key dimensions of the SERVQUAL model—tangibles, reliability, responsiveness, assurance, and empathy—that most significantly impact customer satisfaction, the study enables the National Insurance Corporation (NIC) and other similar institutions to prioritize areas for improvement. For instance, if the study reveals that customers are particularly dissatisfied with the reliability or responsiveness of services, the NIC can focus on streamlining processes, enhancing communication channels, and ensuring timely service delivery. This practical application of the research can lead to enhanced customer satisfaction, potentially increasing customer loyalty and market competitiveness.

Implications for Practitioners

For practitioners within the insurance sector, including managers, service designers, and customer service professionals, the study offers critical insights into customer expectations and perceptions of service quality. By leveraging the SERVQUAL model, practitioners can better understand the specific aspects of their service delivery that need improvement. This could lead to targeted training programs for staff, emphasizing areas such as empathy and assurance, where customer interaction is most impactful. Moreover, the study encourages practitioners to adopt a customer-centric approach, using feedback and satisfaction surveys as continuous tools for service enhancement. Ultimately, by aligning their practices with the dimensions highlighted by the SERVQUAL model, practitioners can improve overall service quality, thereby boosting customer satisfaction and retention in the highly competitive insurance market.

12. Conclusion, Limitations and Future Studies

12.1 Conclusion

6.1.1 The Responsiveness of Non-Life Public Insurance in Facilitating Customer Needs

Analysis of the responsiveness of non-life public insurance services involved the analysis of the timeliness of the response from the National Insurance Corporation (NIC) when addressing customer queries or concerns, effectiveness in handling customer inquiries and complaints, and customers' satisfaction on the overall responsiveness of the NIC in meeting customers' insurance-related needs. It was concluded that, customers who were accessing non-life public insurance services at NIC were satisfied with the timeliness of responding to their problems or enquires, this is due to the fact that the management of NIC have a specific and automated system known as Customer Relationship Management (CRM) where customers can submit their enquiries or make contacts through the system and the management responds immediately after receiving the submitted enquiries or problems from the customer. Also, concluded that, NIC management and its supporting staffs shown to be responsive because customers agreed and commented that NIC can give prompt customer service and attend to customers' needs or problems, NIC employees are always willing to help customers in emergencies, NIC employees are approachable and easy to contact, NIC Employees' can communicate clearly with the customer, and customers gets quick a turnaround as they need on requests for new reports or data

6.1.2 The Reliability of Services to Customers in Non-Life Public Insurance

The study under this section concluded that, few of the customers involved in the study were dissatisfied with the reliability of services offered by the National Insurance Corporation (NIC) compared to the customers who were satisfied. It meant that the accuracy and consistency of information provided by the NIC regarding insurance policies and procedures and trust among the customers on NIC to deliver on its promises regarding insurance coverage is high that increase the level of satisfaction among customers accessing services at NIC. Also, customers accessing non-life public insurance services were satisfied with the services provided by NIC this was because the National Insurance Cooperation (NIC) has timely deliverance of insurance services to customers, NIC has been truthful (keeping to promises) to customers regarding

insurance services, NIC is dependable and consistent in solving customers' complaints, NIC can perform services right the first time, and NIC can insist on error-free records.

6.1.3 The Tangibles of Services to Customers in Non-Life Public Insurance

The study under this section concluded that, NIC can give customers access to information, product or service catalogs, NIC provides visually attractive, offices, equipment, and materials to customers, NIC provides a variety of entertainment facilities to customers, NIC has favorable terms and conditions to customers. This shows empathy and tangible deliverables among the NIC staffs and increase the level of satisfaction among the customers accessing non-life insurance services at NIC.

6.1.4 The Empathy of Services to Customers in Non-Life Public Insurance

The study under this section concluded that, NIC has operating hours convenient to all customers, NIC has a sound loyalty program to recognize as a frequent customer, NIC makes efforts to understand specific customer needs and NIC apologizes for the inconvenience caused to customers. This shows empathy deliverables among the NIC staffs and increase the level of satisfaction among the customers accessing non-life insurance services at NIC.

6.1.5 The Assurance of Services to Customers in Non-Life Public Insurance

The study under this section included that NIC has created assurance of its services to customers due to improvements in the following areas; behavior of employees of NIC instills confidence in customers, Employees' use of required skills and knowledge to answer customers' questions, Employees of NIC are consistently courteous with customers and NIC staffs have ability to provide variety of value-added services to customers.

6.1.6 Customers' Satisfaction on Non-life Public Insurance Services

Under this section the study used components of the service quality model to assess whether customers were satisfied with non-life insurance services or not. From the findings of the study, it was concluded that, factors like responsiveness, reliability, tangibles, empathy and assurance have direct effect on customer satisfaction on non-life insurance services. Also, it was concluded that increase in responsiveness, reliability, tangibles, empathy and assurance in delivering non-life insurance services to customers increases the level of satisfaction among the customers.

12.2 Limitations and Future Studies

Other respondents neglect to participate in this study due to the fact that, they were busy doing different works. Again, there was limited secondary data concerning this study. Therefore, the discussion of the study was based on assessing customer satisfaction on non-life insurance services at the National Insurance Corporation (NIC) by using the components of the Service Quality Model. It highly recommended that further studies to be undertaken upon assessing how the application of the SERVQUAL Model affects the non-life insurance industry performance in terms of financial performances and customers retention.

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The Assessment of Strategic Procurement Practices on the Performance of Public Institutions: A Case of Dodoma City Council, Tanzania

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Abstract

Public institutions in developing countries often face challenges in effectively managing their procurement processes, which can significantly impact their overall performance. This study aimed to assess the impact of strategic procurement practices on the performance of public institutions, using the case of Dodoma City Council in Tanzania. The specific objectives were to determine the effects of supplier relationships, procurement cost management techniques, and information technology applications on the performance of the institution. A quantitative research approach was adopted, and data was collected from 109 respondents using a questionnaire. The findings revealed that supplier relationships, procurement cost management, and information technology applications had significant positive correlations with institutional performance. The study recommends that public organizations should focus on developing strong supplier relationships, implementing effective cost-management techniques, and leveraging information technology to improve their overall performance.

Keywords: *Strategic procurement, supplier relationship, procurement cost management, information technology, public institutions, organizational performance*

1. Introduction

Procurement is a critical function in both public and private organizations, as it plays a crucial role in acquiring goods, services, and works necessary for the smooth operation and achievement of organizational goals (Basheka, 2008). In the public sector, effective procurement management is essential for ensuring the efficient utilization of limited resources, promoting transparency and accountability, and delivering quality services to citizens (Muma et al., 2014).

However, public institutions in developing countries, including Tanzania, often face various challenges in managing their procurement processes effectively. These challenges include lack of skilled procurement personnel, bureaucratic and outdated procurement systems, political interference, and inadequate financial resources (Ndiwalana & Mugurusi, 2019). As a result, public institutions may experience suboptimal performance, such as delayed project completions, cost overruns, and poor service delivery to the public (Basheka & Mugabira, 2008).

In recent years, the concept of strategic procurement has gained increasing attention as a means of enhancing the performance of public institutions (Muma et al., 2014). Strategic procurement involves the alignment of procurement practices with the overall organizational strategy, with the aim of creating competitive advantages and improving organizational performance (Carr & Smeltzer, 1997). This approach emphasizes the integration of procurement activities with other business functions, the development of long-term supplier relationships, and the application of innovative procurement techniques to drive cost savings and efficiency (Monczka et al., 2015).

The Dodoma City Council, as a representative public institution in Tanzania, serves as the focal point of this study. Dodoma is the capital city of Tanzania and has experienced significant growth and development in recent years, which has placed increasing demands on the city's procurement function. Understanding the impact of strategic procurement practices on the performance of the Dodoma City Council can provide valuable insights for other public institutions in Tanzania and similar developing country contexts.

The specific objectives of this study were to:

1. Determine the effect of supplier relationship on the performance of the Dodoma City Council.
2. Examine the influence of procurement cost management techniques on the performance of the Dodoma City Council.
3. Assess the impact of information technology application on the performance of the Dodoma City Council.

The study was guided by the following research questions:

1. What is the effect of supplier relationship on the performance of the Dodoma City Council?
2. How do procurement cost management techniques influence the performance of the Dodoma City Council?
3. What is the impact of information technology application on the performance of the Dodoma City Council?

1.2 Significance of the Study

The findings of this study contribute to the existing body of knowledge on strategic procurement practices and their impact on the performance of public institutions, particularly in the context of developing countries. The insights generated can inform policymakers, public sector managers, and procurement professionals on the critical areas to focus on in order to enhance the performance and service delivery of public institutions.

1.3 Literature Review

This study is grounded in the institutional theory, which provides a framework for understanding the influence of institutional pressures and norms on organizational practices

and performance (DiMaggio & Powell, 1983). The institutional theory posits that organizations must align their structures, processes, and practices with the prevailing institutional environment to gain legitimacy and ensure their survival and success (Scott, 2008).

In the context of public institutions, the institutional theory suggests that the adoption of strategic procurement practices may be influenced by the need to conform to external regulations, industry standards, and stakeholder expectations (Lian & Laing, 2007). Public organizations are often subject to stringent procurement regulations and guidelines, as well as pressure from political and social actors to ensure transparency, fairness, and accountability in their procurement processes (Muma et al., 2014).

By aligning their procurement practices with institutional norms and expectations, public institutions can enhance their legitimacy, access to resources, and overall performance (Zheng et al., 2014). The institutional theory, therefore, provides a suitable theoretical foundation for this study, as it helps to explain the adoption and impact of strategic procurement practices within the context of public institutions.

Giath et al. (2021) assessed the influence of strategic management of procurement process on the organizational performance of public institutions in Kenya with a focus on National transport and safety authority. The study used descriptive research design, which employed stratified sampling technique to select 92 respondents from 923 employees. Data collected through close ended questionnaires and analyzed by descriptive statistics and linear regression and correlation to show the relationship between variables. The study revealed that there was significant relationship between supplier management, technology utilization and organizational capacity to the organizational performance. The study suggests that there is need for management to invest in research and development for the purpose of adopting new technologies to keep pace with the global changes.

Chenini et al. (2020) examined how strategic procurement and supplier integration influence firms manufacturing performance and speed to market. The study adopted explanatory and cross-sectional research design in which the primary data were collected by using structured questionnaire from 279 procurement officials. Nonprobability and purposive sampling techniques were used to target respondents selected using social network web LinkedIn. The data reliability, validity, analysis and correlations were examined using AMOS version 24. The study findings revealed the significance of strategic procurement and supplier integration in superior manufacturing and speed to market performance. It was further revealed that procurement strategy and supplier integration were the key determinants of lead time and significantly affect the manufacturing performance. The study recommended well planned procurement and excellent supplier integration to increase the firm efficiency.

Oliech and Mwangangi (2019) researched the effect of strategic procurement management on firm performance, with a focus on level five hospitals in Kenya. The study collected both primary and secondary data. The data collection instruments were questionnaires. Secondary data was collected from published materials and information from other sources such as world

health organization reports, periodicals and health procurement publications. They established that e-procurement, strategic sourcing, procurement planning and supplier relationships have a significant relationship with the performance of level five hospitals. They further recommended that organizations should strengthen their outsourcing procurement activities and design workable frameworks on how best to do so. In addition, they suggested that an organization should put in place mechanisms or frameworks that enhance supplier relationships if it is to sustain its performance against its competitors.

Muswere (2020) sought to examine the impact of strategic procurement practices on firm performance at CBZ Bank. The study adopted a mixed research approach. The study collected both, primary and secondary data. The research instruments used to gather primary data were the questionnaires and interview guides. Secondary data were collected from procurement publications, journals, books, other internet sources, and reports from the Supply Chain Council. The population of the study included 82 employees selected by convenience sampling, a non-probability sampling technique. The data was analyzed by descriptive statistics and Pearson product-moment correlation co-efficient through Microsoft Excel worksheets and Statistical Package for Social Science (SPSS). The findings of the study showed that strategic cost management, supplier integration, early supplier involvement and supplier relationship management had a positive relationship with firm performance.

Abdul and Mashenene (2022) examined the effect of procurement planning on the efficiency of public procurement at the Ministry of Education, Science and Technology, Tanzania. A cross-sectional design was adopted with a sample size of 108 selected by using proportional stratified sampling. Data were collected by using questionnaire and interview as data collection tools. Data collected was analyzed by content analysis and binary logistic regression model. The main findings revealed that procurement planning was positive and significant with public procurement efficiency in terms of delivery time and reduction of procurement costs. The study recommends organizations embrace these practices and policymakers to develop required policies and procedures for smooth applications.

Orio (2020) analyzed the impact of strategic procurement on the effectiveness of procurement functions in the public sector. Specifically, the study focused on determining the extent to which procurement practitioners influence green procurement in public procuring entities. The study adopted institutional theory to explain the relationship with the study conducted. A descriptive research design was used where administrative questionnaires were used to collect data from the total sample of 60 respondents. Collected data were analyzed with the help of SPSS and tables were used to present findings. The findings showed that no provision of training to staff, a lack of enough knowledge on green procurement policy, a lack of environmental specification on products offered by suppliers as well and a high price of green procurement products in at market. The study concluded that public organizations have not focused on practicing strategic procurement since many factors are hindering its implementation.

Tesha (2019) assessed the role of strategic procurement in promoting value for money in the

construction industry the study used a descriptive research design to describe the situation of the problem. The researcher used purposive sampling in which the researcher selected seventy-nine (79) employees as a sample size of the Tanzania Building Agency. Questionnaire and interview methods were adopted in collecting the data from the respondents and were analyzed quantitatively. The findings of the study show that procurement cost management techniques in general promote value for money through cost planning and controlling, forecasting, and value management. On the side of utilization of resources, a challenge of inadequacy of resources especially machinery and equipment resource was noted, and lastly, procurement quality management approaches pointed out the benchmarking as the rare method in supporting quality.

While the existing literature has examined the relationship between strategic procurement practices and the performance of public institutions, the majority of these studies have been conducted in other developing country contexts, such as Kenya and Uganda. There is a relative paucity of research specifically focusing on the Tanzanian public sector and the Dodoma City Council in particular.

Moreover, the existing studies have often focused on individual aspects of strategic procurement, such as supplier relationship or procurement cost management, without considering the comprehensive impact of multiple strategic procurement practices on institutional performance. This study aims to bridge this gap by providing a more holistic assessment of the effects of supplier relationship, procurement cost management techniques, and information technology application on the performance of the Dodoma City Council, a representative public institution in Tanzania.

2. Method

Research Design and Study Area

This study adopted a quantitative research approach, utilizing a cross-sectional research design. The study area was the Dodoma City Council, which is the local government authority responsible for the administration and development of Dodoma, the capital city of Tanzania.

Sampling and Data Collection

Purposive sampling was employed to select the respondents for this study. The target population included procurement officers, finance officers, and other relevant personnel involved in the procurement function of the Dodoma City Council. A total of 109 respondents participated in the study. Data was collected using a structured questionnaire, which was developed based on the key variables identified in the conceptual framework. The questionnaire comprised both closed-ended and open-ended questions to gather information on the strategic procurement practices and the performance of the Dodoma City Council.

Data Analysis

The collected data was analyzed using both descriptive and inferential statistics. Descriptive statistics, such as frequencies, percentages, and mean scores, were used to summarize the respondents' characteristics and their perceptions of the strategic procurement practices. Inferential statistics, including Pearson's correlation and multiple regression analysis, were employed to examine the relationships between the strategic procurement practices and the performance of the Dodoma City Council. Pearson's correlation was used to assess the strength and direction of the relationships, while multiple regression analysis was conducted to determine the predictive power of the independent variables on the dependent variable. The statistical analysis was performed using the Statistical Package for Social Sciences (SPSS) software, version 26.

Reliability and Validity

The reliability of the research instrument was assessed using Cronbach's alpha coefficient. The values of Cronbach's alpha for the key variables ranged from 0.789 to 0.928, indicating a high level of internal consistency and reliability. The validity of the research instrument was established through content validity and construct validity. Content validity was ensured by aligning the questionnaire items with the conceptual framework and the existing literature. Construct validity was assessed through factor analysis, which confirmed the hypothesized factor structure of the key variables.

3. Results

Respondents' Characteristics

The respondents were selected from different departments in the Dodoma City Council, with 41.3% working in the Procurement and Supplies Department. Most of them (54.1%) had bachelor's degrees, and 41.3% had between 6 and 10 years of work experience. This focus on the Finance, Procurement, and Tender Board departments shows a clear effort to gather important insights about how the council operates. These departments are key to managing public resources and ensuring financial transparency, which previous studies have shown is vital for good governance. The combination of their education and experience suggests they are well-equipped to think critically and solve problems in procurement. Overall, their backgrounds not only help them provide valuable data but also enhance the understanding of procurement practices in the Dodoma City Council.

Supplier Relationship and Institutional Performance

The results showed a strong positive correlation ($r=0.969$, $p<0.01$) between supplier relationships and the performance of the Dodoma City Council. Specifically, the aspects of early supplier involvement ($r=0.958$, $p<0.01$), supplier development ($r=0.945$, $p<0.01$), and collaboration ($r=0.907$, $p<0.01$) were all significantly correlated with institutional performance.

The results indicating a strong positive correlation ($r=0.969$, $p<0.01$) between supplier relationships and the performance of the Dodoma City Council suggest that effective engagement and collaboration with suppliers significantly enhance the council's overall performance. This means that as the quality of supplier relationships improves, so does the council's operational efficiency and service delivery. Specifically, the correlations with aspects such as early supplier involvement ($r=0.958$, $p<0.01$), supplier development ($r=0.945$, $p<0.01$), and collaboration ($r=0.907$, $p<0.01$) highlight the importance of these practices. Early supplier involvement allows for better planning and decision-making, while supplier development enhances the capabilities of suppliers, leading to more reliable goods and services. Collaboration fosters a partnership approach, enabling both the council and suppliers to share knowledge and resources effectively.

Previous studies have similarly found that strong supplier relationships contribute to enhanced organizational performance. For instance, a study by Alshurideh (2022) emphasized that effective supplier management leads to improved product quality and faster delivery times, ultimately benefiting organizational efficiency. Additionally, Kamau (2013) demonstrated that collaboration with suppliers can result in greater innovation and responsiveness in supply chains. These findings reinforce the idea that strong supplier relationships are essential for successful institutional performance. Overall, the results suggest that the Dodoma City Council can achieve better outcomes by investing in and nurturing these relationships with suppliers.

Procurement Cost Management Techniques and Institutional Performance

The findings revealed a moderate positive correlation ($r=0.194$, $p<0.05$) between procurement cost management techniques and the performance of the Dodoma City Council. The specific cost management techniques, such as waste elimination ($r=0.215$, $p<0.05$), competition ($r=0.134$, $p<0.05$), and budget allocation ($r=0.189$, $p<0.05$), were all positively correlated with institutional performance, although the correlations were relatively weaker compared to supplier relationship.

The findings indicated a moderate positive correlation ($r=0.194$, $p<0.05$) between procurement cost management techniques and the performance of the Dodoma City Council. This suggests that effective cost management practices can enhance the council's overall performance, although to a lesser extent than supplier relationships. Specific techniques such as waste elimination ($r=0.215$, $p<0.05$), competition ($r=0.134$, $p<0.05$), and budget allocation ($r=0.189$, $p<0.05$) all showed positive correlations with institutional performance. While these correlations indicate a beneficial impact, they are relatively weaker compared to the strong correlations observed with supplier relationships.

This finding aligns with previous studies that have explored the relationship between cost management techniques and organizational performance. For example, research by Odhiambo and Kamau (2003) who found that effective cost-management practices contribute to improved

operational efficiency and customer satisfaction. Additionally, a study by Basheka and Mugabira (2008) highlighted the importance of waste reduction and budget management in enhancing organizational performance. Although the correlations in this study are not as strong as those related to supplier relationships, they still underscore the significance of implementing effective cost-management techniques to support the overall performance of the Dodoma City Council.

Information Technology Application and Institutional Performance

The results indicated a moderate positive correlation ($r=0.209$, $p<0.05$) between information technology applications and the performance of the Dodoma City Council. The specific IT applications, including supplier identification ($r=0.182$, $p<0.05$), e-payment ($r=0.176$, $p<0.05$), and information sharing ($r=0.197$, $p<0.05$), were all positively correlated with institutional performance.

The results indicated a moderate positive correlation ($r=0.209$, $p<0.05$) between information technology applications and the performance of the Dodoma City Council. This suggests that the use of IT in various processes can enhance the council's overall effectiveness. Specific IT applications, such as supplier identification ($r=0.182$, $p<0.05$), e-payment ($r=0.176$, $p<0.05$), and information sharing ($r=0.197$, $p<0.05$), were all positively correlated with institutional performance. These correlations highlight the importance of integrating technology into procurement and administrative processes to improve operational efficiency.

Previous studies have similarly emphasized the role of information technology in enhancing organizational performance. For instance, a study by Mashari et al. (2003) found that effective IT applications lead to improved decision-making and streamlined processes in public sector organizations. Additionally, research by DeLone and McLean (2003) demonstrated that information sharing and e-payment systems can significantly boost efficiency and accountability in public administration. Although the correlations observed in this study are moderate, they underscore the potential benefits of leveraging information technology to support and improve the performance of the Dodoma City Council.

Multiple Regression Analysis

The multiple regression analysis revealed that the three strategic procurement practices (supplier relationship, procurement cost management techniques, and information technology application) collectively explained 91.4% of the variance in the performance of the Dodoma City Council ($R^2=0.914$, $p<0.001$). Supplier relationship emerged as the strongest predictor of institutional performance ($\beta=0.778$, $p<0.001$), followed by information technology application ($\beta=0.154$, $p<0.01$) and procurement cost management techniques ($\beta=0.097$, $p<0.05$).

The multiple regression analysis revealed that the three strategic procurement practices—supplier relationship, procurement cost management techniques, and information technology application—collectively explained 91.4% of the variance in the performance of the Dodoma

City Council ($R^2=0.914$, $p<0.001$). This high level of explained variance indicates that these practices significantly impact the council's performance. Among them, supplier relationship emerged as the strongest predictor of institutional performance, with a coefficient of $\beta=0.778$ ($p<0.001$). This finding underscores the critical role that effective supplier relationships play in enhancing operational outcomes. In addition, information technology application ($\beta=0.154$, $p<0.01$) and procurement cost management techniques ($\beta=0.097$, $p<0.05$) were also identified as important predictors, although their influence was comparatively weaker. The findings align with previous research that emphasizes the importance of strategic procurement practices in improving organizational performance. Overall, the results suggest that the Dodoma City Council should prioritize strengthening supplier relationships while also enhancing its use of information technology and cost management techniques to optimize its performance.

4. Discussion

The findings of this study provide valuable insights into the influence of strategic procurement practices on the performance of public institutions, particularly in the context of the Dodoma City Council in Tanzania.

Supplier Relationship and Institutional Performance
The strong positive correlation between supplier relationship and the performance of the Dodoma City Council aligns with the existing literature, which emphasizes the importance of developing collaborative and mutually beneficial relationships with suppliers (Muma et al., 2014; Ndiwalana & Mugurusi, 2019). By fostering early involvement, supplier development, and collaboration, the Dodoma City Council can leverage the expertise and resources of its suppliers to enhance the quality and timeliness of service delivery, leading to improved overall performance.

Procurement Cost Management Techniques and Institutional Performance
The moderate positive correlation between procurement cost management techniques and the performance of the Dodoma City Council suggests that the adoption of cost-saving measures, such as waste elimination, competitive sourcing, and strategic budget allocation, can contribute to improved financial and operational performance. This finding corroborates the existing literature, which highlights the importance of effective procurement cost management in the public sector (Odhiambo & Kamau, 2003; Basheka & Mugabira, 2008).

Information Technology Application and Institutional Performance
The moderate positive correlation between information technology application and the performance of the Dodoma City Council indicates that the adoption of IT-based procurement practices, including supplier identification, e-procurement, and information sharing, can enhance the efficiency, transparency, and effectiveness of procurement processes, leading to improved overall performance. This aligns with the existing literature, which emphasizes the critical role of IT in enhancing the performance of public institutions (Muma et al., 2014; Ndiwalana & Mugurusi, 2019).

5. Conclusion, Implications, and the Area for Further Research

In conclusion, the study found that supplier relationship, procurement cost management, and information technology application all have significant positive impacts on the performance of public institutions, using the case of Dodoma City Council. The researcher provides recommendations for public institutions to develop supplier relationships, adopt cost-reducing procurement strategies, and continue leveraging IT systems, while addressing any weaknesses. The findings have theoretical, practical, and policy implications related to the importance of strategic procurement practices in the public sector.

The researcher suggests that future studies explore strategic procurement in private institutions, the regulatory framework supporting it in the public sector, and the key drivers and determinants of strategic procurement adoption by public organizations.

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Appendix B

Table 4. 1: Department at UDOM

		Frequency	Percent
Valid	Procurement	33	30.3
	Finance and Account	39	35.8
	Tender Board	22	20.2
	Human Resources Management	15	13.8
	Total	109	100.0

Table 4. 2: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.786 ^a	.617	.606	.172

a. Predictors: (Constant), IT, CMT, SR

Table 4. 2: Anova

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.849	3	1.616	54.788	.000 ^b
	Residual	3.009	102	.030		
	Total	7.858	105			

a. Dependent Variable: IP

b. Predictors: (Constant), IT, CMT, SR

Table 4. 4: Regression coefficients

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
(Constant)	.279	.080			3.503	.001
SR	.416	.053	.585		7.852	.000
CMT	.141	.065	.160		2.158	.033
IT	.179	.084	.180		2.134	.035

The impacts of the working environment on career satisfaction among public employees in the Chemba District Council.

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Abstract

The study was focused on the effect of Working environment on careers satisfaction in public sector: Case of Chemba District Council. The study used a cross-sectional research design while Simple random sampling and purposive sampling techniques were used to get members of the sample size of 107 respondents. Data were collected through questionnaires and interviews while data were analysed using Logistic Regression. The chi-square results indicate a significant association between the Working environment and career satisfaction. The Logistic regression analysis revealed that approximately 60.45% of Career' satisfaction can be explained by the Working environment alone (Pseudo R-squared = 0.6045), with a highly significant LR Chi (3) (LR = 66.74, $p < 0.001$). Based on this logistic regression analysis, working hours and Workload, and Job autonomy and teamwork are significant predictors of career' satisfaction in Chemba district council. These aspects of Working environment play crucial roles in determining employees' career satisfaction levels, while Physical workspace statistically insignificant at 0.05 level of significance.

Key words: *Working Environment, Career' Satisfaction, Physical workspace, Work hours, Workload, Job autonomy and Teamwork.*

1.0 Introduction

Career satisfaction is the level of peacefulness that someone feels about their job; one of the most critical determinants that determines work quality, productivity, turnover, and organizational performance (Msanya *et al.*, 2020). Low career satisfaction has long been a source of concern in many organizations. Including the Chemba District Council. According to a study by Ali and Shukralla (2021), many employees in this Chemba District Council are

dissatisfied with their jobs due to several factors such as poor working conditions, inadequate compensation lack of opportunities for growth and development, and ineffective management practices. Furthermore, Kinyua (2020) found that career development opportunities, job security, and work-life balance were the most critical factors influencing career satisfaction among employees in the public sector in Kenya.

Rodríguez (2021) defines the physical environment as the physical atmosphere in which an organization's employees work and may perceive it as emotionally favorable or unfavorable. A favorable physical environment includes giving employees space and privacy to do their work, making the office more comfortable, and improving communication. Moreover, upholding a positive workplace environment helps boost employee morale, retention, and productivity. Freedman (2022) argues that the physical environment for employees impacts their mood, drive, mental health and performance. If employees work in a tedious office setting with unfriendly workers, they likely won't have enough confidence or job satisfaction. Likewise, a safe workplace environment has been addressed by the International Labor Organization (ILO). The ILO Constitution sets forth the principle that workers must be protected from sickness, disease and injury arising from their employment (ILO, 2022). Henceforth, organizations across the world are bound to adhere to the ILO constitution by enforcing effective policies that ensure safe and conducive workplace environment for employees.

Globally, it has been reported that a conducive physical environment for employees plays a crucial role towards employees' satisfaction. In The United States of America, physical environment factors that were reported to enhance employee satisfaction include; psychosocial variables such as work demands; work organization including influence, freedom, meaning of work, and possibilities for development; interpersonal relations such as leadership and coworkers, a sense of community, role clarity, feedback, and support; and individual health and personal factors, including one's ability to cope and family supports (Donley, 2021). In Asia, evidence from Pakistan reveals that the physical environment has a positive impact on the employees' satisfaction, whereby bad working conditions limit employees to showcase their competences and attain full potential, so it is important that organizations should realize the potential of good physical environment towards employee satisfaction and performance (Raziq & Maulabakhsh, 2015). Likewise, In China, Zhenjing et al. (2022) reports that a positive physical work environment has improved employee satisfaction, commitment level and achievement-striving ability which in turn has led to improved organizational performance.

Empirical data from the Chemba District Council Human Resource Department reveals a high turnover rate of employees due to job dissatisfaction. From 2018 to 2021, the Chemba District Council recorded an average annual employee turnover rate of 25 %, which is significantly higher than the industry average of 15 %. This high turnover rate indicates that the current initiatives to enhance career satisfaction have not been successful (HR, 2023).

However, recent Tanzanian research found that 54 % of respondents were unsatisfied with their current work and 35 % planned to leave (Naburi *et al.*, 2017). One empirical study by Al-Sada and Al-Jazzify (2020) found a significant relationship between job satisfaction and employee

performance in the public sector in Kuwait. Still, there is a theoretical gap in understanding the specific factors that influence career satisfaction among employees in the Chemba District Council.

Previous studies conducted in similar areas include a study by Aziri, Wu, and Huang, (2015, 2018) on the factors influencing job satisfaction among employees in the public sector, also Khedhaouria and Gurau, (2017) did a study on the impact of management practices on employee job satisfaction in the Tunisian public sector. The key difference between these studies is the focus on the specific factors that influence career satisfaction among employees at the Chemba District Council. This study aims to provide a comprehensive understanding of the factors that influence career satisfaction in this Chemba District Council, which can inform the development of effective initiatives to enhance employee satisfaction and retention.

The issue of employee Career satisfaction has been a long-standing problem in many organizations across various sectors. The extent of this problem is evidenced by the high turnover rates, absenteeism, and decreased productivity among employees (Hammer et al., 2015). In the case of the public sector, this problem is even more prevalent due to the bureaucratic nature of the organization, which often leads to a lack of autonomy and job dissatisfaction among employees (Khan *et al.*, 2017).

The selection of the study area on the effect of organizational culture on career satisfaction in the public sector was motivated by the need to address this problem. According to recent data, the public sector has the lowest job satisfaction levels compared to other sectors, the study found that only 32% of public sector employees in the Chemba District Council reported being satisfied with their jobs, with organizational culture being a significant predictor of job satisfaction levels (Al-Hawari *et al.*, 2018). This highlights the need for interventions that focus on improving the organizational culture in the public sector to improve job satisfaction levels among employees. This highlights the urgent need for interventions to improve job satisfaction levels among public sector employees.

Various initiatives have been implemented to address this problem, including job redesign, salary increases, and training programs. However, the success of these initiatives has been limited. For instance, despite the implementation of job redesign turnover initiatives, the turnover rates among public sector employees remain high (Hammer *et al.*, 2015). If this problem is not resolved, it could have serious implications for the public sector, including decreased productivity, increased costs, and a loss of talented employees to other sectors. This could ultimately lead to a decline in the quality of public services and a loss of public trust in the government.

2.0 Empirical Literature Review

According to Mgaiwa (2021) for improved work performance, decreased Intention to leave the company, increased organizational commitment, and decreased job burnout, employees job happiness is essential. The topic of academics ' job happiness in non-European nations has

received little research, and studies on Tanzania are particularly rare “. The findings showed that academics' job satisfaction was statistically significantly predicted by academic freedom, participative decisions, teamwork, supervision, and resources, over and above their marital status, gender, age, academic rank, and institutional type. This research has both practical and policy consequences, and its findings add to the larger body of knowledge on management.

Salifu *et al.* (2018) evaluated the FIT - Choice (Factors Influencing Teaching Choice) scale's structural validity in the Ghanaian context using pre - tertiary school teachers. 354 teachers were divided into cohorts for a quantitative survey, and descriptive and inferential statistics were used to examine the results. The study discovered that rather than extrinsic utility value, the participants were persuaded by social utility value and personal utility value to pursue a teaching job. The study also revealed that while teaching, the teachers mostly relied on their subject-matter knowledge and were content with their decision to pursue a career in education without any outside pressure. The study suggested providing teachers with a better chance to benefit from employment security, family time, transfers, and social equality.

Another Recent studies have also explored the relationship between the working environment and career satisfaction. A study by Wang *et al.* (2018) found that a supportive and positive work environment was positively associated with job satisfaction among employees. Another study by Yen and Chen (2015) found that a positive work environment, including factors such as work-life balance, job security, and employee benefits, was positively correlated with job satisfaction. Similarly, a study by Afsar *et al.* (2018) found that a positive work environment, including factors such as leadership support, employee empowerment, and job autonomy, was positively associated with job satisfaction.

Several recent studies have explored the link between personality traits and career satisfaction. According to a study by Judge *et al.* (2017), conscientiousness and emotional stability were positively associated with job satisfaction, while neuroticism was negatively associated with job satisfaction. Another study by Li *et al.* (2017) found that extraversion and openness to experience were positively correlated with career satisfaction, while agreeableness was not. A study by Ng *et al.* (2019) also found that extraversion and conscientiousness were positively associated with job satisfaction, while neuroticism was negatively associated with job satisfaction.

Likewise, a study by Nouri *et al.*, (2020) investigated the impact of workspace characteristics on employees' job satisfaction in the healthcare industry in Iran. The study found that workspace characteristics, such as lighting, temperature, and cleanliness, had a significant positive effect on job satisfaction. The authors suggest that providing a clean and comfortable work environment can improve employees' job satisfaction. However, the study did not explore the potential influence of individual differences, such as personality traits or job roles, on the perceived importance of specific workspace characteristics

Another study has also explored the link between organizational culture and career satisfaction. A study by Jaiswal and Dhar (2019) found that a positive organizational culture, including factors such as trust, communication, and fairness, was positively associated with job

satisfaction among employees. Another study by Thapa *et al.* (2018) found that a positive organizational culture, including factors such as employee development, teamwork, and employee recognition, was positively correlated with job satisfaction. Similarly, a study by Kim *et al.* (2020) found that a positive organizational culture, including factors such as ethical leadership, organizational justice, and organizational support, was positively associated with job satisfaction among employees.

Finally, a study by Zeljković and Veselinović (2021) investigated the impact of the physical work environment on employees' job satisfaction in the tourism industry in Serbia. The study found that physical work environment factors, such as noise, temperature, and air quality, had a significant negative effect on job satisfaction. The authors suggest that addressing these physical work environment factors can improve employees' job satisfaction. However, the study did not assess the specific interventions or strategies that organizations in the tourism industry can implement to address these identified issues, providing actionable insights for improving job satisfaction in this sector.

The review of studies on the impact of the work environment on employees' career satisfaction provides valuable insights that are relevant to my study. It underscores the positive impact of various work environmental factors, such as physical workspace, Work hours, Workload, Job autonomy and Teamwork., on career satisfaction across diverse industries. The strength of this review lies in its comprehensive exploration of different aspects of the physical environment and their effects on employee career satisfaction. However, a limitation is the identified gaps in each study, such as the lack of exploration into variations across roles or levels and the influence of individual differences. To address these gaps, my study aims to build upon these insights by examining the effects of Work environment on career satisfaction, considering potential variations across organizational and individual characteristics, thereby contributing to a more rounded understanding of this relationship.

3.0 Methodology

This chapter presents the methodological techniques that were employed in conducting this study. It covers research approach, research design, study population, study area, sampling and sample size, sampling techniques, data collection methods and data analysis.

3.1 Research Approach

To assess the impact of the Working environment on employees' career satisfaction mixed research approach has been used. Mixed methods research is a research design that includes both qualitative and quantitative research elements, to integrate or combine the strengths of both approaches to gain a more comprehensive understanding of the research problem (Creswell & Plano, 2018). Mixed methods research allows combining the strengths of both quantitative and qualitative approaches. By integrating these approaches, we can achieve a deeper and more comprehensive understanding of research questions than would be possible with either me

3.2 Research Design

A cross-sectional research design is a type of observational study where data is collected at a single point in time from a sample of the population. This design was selected because it allowed for the collection of data at a single point in time, making it efficient and cost-effective. The study used a survey questionnaire to collect data from employees in the Chemba District Council. (Boru 2018). Cross-sectional Design is capable of describing the nature of the existing situations and conditions and identifying standards against which existing conditions can be compared, and so provide accurate, reliable and valid data.

3.3 Area of Study

The study area of this research is assessing the effect of organizational culture on career satisfaction in the public sector, specifically focusing on the Chemba District Council.

The rationale for selecting this area is to gain an understanding of how organizational culture affects career satisfaction in the public sector, which is a significant topic for policymakers and managers. Research findings from a Chemba are more likely to have direct applicability and relevance to local policymakers, administrators, and managers.

3.4 Study Population

Population refers to the complete set of individuals, items, or units of interest to a study, typically residing within a specific geographical area or sharing a common characteristic. It is a fundamental concept in statistics and research, encompassing the entirety of a defined group from which data is collected and analyzed. The population of study serves as the target group from which a sample is drawn to gather data and make inferences about the broader population. (Creswell, 2014) The population of the study was 167 employees of the Chemba District Council.

3.5 Sampling Techniques

Sampling techniques refer to the methods used to select a subset of individuals or items from a larger population for the purpose of making inferences or generalizations about the population. These techniques are crucial in research and statistical analysis to ensure that the sample accurately represents the population of interest, thereby allowing researchers to draw meaningful conclusions from their data. (Babbie, 2016). This study simple random sampling and purposeful sampling were used.

3.5.1 Simple Random Sampling

This study used two sampling techniques was used to select participants. Simple random sampling was used to select respondents for the survey, while purposive sampling was used to select key informants for the interviews and focus groups. Simple random sampling is a type of probability sampling where each member of the population has an equal chance of being selected for the sample. In this study, a random sample of employees from different departments and levels within the Chemba District Council was selected to participate in the survey. The sample size was determined using a sample size calculator to ensure that the sample is representative of the population. Simple random sampling is suitable for this study because

it ensures that each employee has an equal chance of being selected for the sample, making it a fair and unbiased sampling method.

3.5.2 Purposive Sampling

Purposive sampling, also known as judgmental sampling, is a non-probability sampling technique where participants are selected based on their expertise or knowledge of the research topic. In this study, key informants who have a deep understanding of the organizational culture and career satisfaction in the Chemba District Council were selected for the interviews and focus groups. The key informants were selected based on their job titles, roles, and responsibilities within the Chemba District Council. Purposive sampling is suitable for this study because it allows for the selection of participants who have the expertise and knowledge needed to provide rich and detailed data on the research topic. purposive sampling was employed to select key informants, who were managers or senior officials of the Chemba District Council.

3.6 Data Collection Methods

Methods of data collection encompass the systematic approaches used to gather information or data for research purposes. These methods are essential for ensuring data accuracy, reliability, and relevance to the research questions or objectives. (Neuman, 2014). This study includes techniques such as interviews and Questionnaires. A questionnaire was used to gather information from the employees of the Chemba District Council. The questionnaire was distributed to a representative sample of employees across different levels of the organization, which included questions about their perceptions of the organizational culture, level of career satisfaction, and demographic information. The questions included in the questionnaire were designed to assess the employees' perceptions of the Work environment, their level of career satisfaction, and the relationship between the two. Additionally, the interviewees were asked to provide information on how the Working environment and career development opportunities have affected their own career satisfaction and growth at the Chemba District Council. The interviews were conducted in a semi-structured format, allowing for follow-up questions and probing to gather more detailed information. The information gathered from the interviews was used to complement and validate the data collected from the questionnaire.

3.7 Variable Measurements and Data Analysis

3.7.1 Variable Measurements

Variable	Measurement
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Working Environment (Independent Variable 1)	Five – Point Likert Scale (1 = Strongly agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly disagree)
Physical workspace	
Work hours and Workload	
Job autonomy and teamwork	
Career Satisfaction	Five – Point Likert Scale (1 = Strongly agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly disagree)

Source: Researcher (2024)

3.7.1.1 Transformation of Employee satisfaction

The 5-point Likert scale data on Career satisfaction were transformed into an index scale using the overall mean scores. Thus, the mean score greater or equal to the overall mean was termed as Satisfied while the score below the overall mean was termed Not satisfied.

3.7.1.2 Distribution of Career Satisfaction

The distribution of career satisfaction in a binary format, indicates the data on career satisfaction, indicating the frequency and percentage of employees categorized as either "Not Satisfied" or "Satisfied." Of the total sample, 23.36% of employees expressed that they were not satisfied with their careers, while the majority, comprising 76.64%, reported being satisfied. This data suggests that a significant proportion of employees are content with their careers, but there is also a notable portion that does not feel satisfied. Understanding the reasons behind both satisfaction and dissatisfaction can be crucial for organizational management to address concerns and improve overall employee well-being and performance.

One of the primary reasons why employees are satisfied with their careers at Chamba District Council is the presence of a supportive work environment. This includes having approachable supervisors, open communication channels, and a culture that values employee well-being. When employees feel supported and valued, they are more likely to be satisfied with their jobs. Another important factor that contributes to employee satisfaction is the availability of opportunities for growth and development within the organization. Chamba District Council may offer training programs, career advancement opportunities, and mentorship initiatives that help employees enhance their skills and progress in their careers. Employees are likely to be satisfied with their careers at Chamba District Council if they receive competitive compensation packages and attractive benefits. Fair pay, bonuses, healthcare coverage, retirement plans, and other perks can significantly impact employee satisfaction levels.

satisfied.

Table 3.7.1 Distribution of Career Satisfaction

Employee satisfaction	Frequency	Percent
Not Satisfied	25	23.36
Satisfied	82	76.64

Source: Researcher (2024)

3.7.2 Data Analysis

Logistic regression analysis was employed to examine the significance of the relationship between the independent variable, which is the physical environment, and the dependent variable, employee satisfaction, within the National Food Reserve Agency (NFRA). The Logistic regression equation used for this analysis encapsulates this relationship below;

$$\text{logit}\left(\frac{p}{1-p}\right) = \frac{e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3}}{1 + e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3}}$$

Where:

Logit = logistic link function

p = probability that there is an influence of Working *environment and career satisfaction* in Chemba district.

$1-p$ = probability that there is influence of Working *environment and career satisfaction* in Chemba district.

β_0 = intercept

β_1 - β_3 = parameter estimates or logit coefficients

y =Career satisfaction

- X_1 - X_4 = Physical workspace(X_1), Work hours and Workload (X_2), Job autonomy and Teamwork(X_3).

3.8 Validity and Reliability of Data

To enhance validity, a preliminary study was carried out to improve the research's credibility by testing the research tools on a small group of participants beforehand. This initial assessment was designed to verify that the tools accurately capture the desired variables.

The reliability of the data was evaluated using Cronbach's Alpha test. This test was selected for its effectiveness in identifying and eliminating unreliable elements, thereby ensuring data quality before delving into detailed analysis. A higher Cronbach's Alpha (closer to 1) indicates better reliability. The physical workspace has a Cronbach's Alpha of 0.868, indicating strong reliability. Work hours and Workload show a Cronbach's Alpha of 0.862, reflecting very good

internal consistency. Job autonomy and Teamwork with a Cornbrash's Alpha of 0.838, indicates good reliability. Values have a slightly lower Cornbrash's Alpha of 0.793, but it is still within acceptable limits for reliability also Career Satisfaction shows the lowest Cronbach's Alpha of 0.769, yet it remains within the acceptable range.

Table 3.7.1 Overall Reliability Statistics

Working environment		
Physical workspace	0.868	5
Work hours and Workload	0.862	5
Job autonomy and Teamwork	0.838	5
Dependent variable		
Career Satisfaction	0.769	5

3.9 Ethical Consideration

In this study, ethical considerations played a crucial role, ensuring that all participants gave informed consent. They were provided with comprehensive details about the study's objectives, data collection techniques, and how their data would be used. This study adhered to four research ethics, which include obtaining informed consent from all participants, maintaining confidentiality and anonymity of the participants, avoiding harm to the participants, and ensuring the research findings are accurate and honest. Participants were reassured that their involvement was voluntary, and they had the right to withdraw from the study at any point without any consequences. Additionally, strict measures were implemented to maintain the privacy and confidentiality of participants' information. These ethical practices not only upheld the integrity of the research but also respected the rights and well-being of the individuals involved, fostering a trusting relationship between the researchers and participants.

4.0 Results

The research focused on evaluating the significant regression between the predictor variable, Working Environment, and the outcome variable, Career Satisfaction in Chemba District, Tanzania. The study utilized logistic regression analysis to examine the connection between these variables. By employing this statistical method, the research aimed to ascertain the extent to which the working environment, encompassing, influences career satisfaction levels within Chemba district.

4.1 Association Between Working Environment on Career Satisfaction Among Employees

The association between the working environment and career satisfaction among employees, was analyzed at a significance level of 0.05. Each variable (Physical workspace, Work hours and Workload, Job autonomy and teamwork) is assessed in terms of its impact on employee satisfaction, categorized as "Not satisfied" and "Satisfied."

For the variable of Physical workspace, the chi-square value is 4.9899 with a corresponding p-value of 0.025, indicating a statistically significant association between the physical workspace and employee satisfaction. The data shows that among employees who responded negatively to their physical workspace (No), 22 (18.42%) were not satisfied, while 3 (23.68%) were satisfied. What entails that a well-designed physical workspace can significantly impact employee productivity. Providing ergonomic furniture and adequate lighting can reduce physical strain and discomfort, leading to improved focus and efficiency. At Chemba District Council, a comfortable and functional workspace can enhance employees' ability to perform their tasks effectively, ultimately contributing to higher job satisfaction. The layout of the physical workspace can also influence collaboration and communication among employees. An open-plan office design can facilitate spontaneous interactions and idea-sharing, fostering a sense of teamwork and camaraderie. Through promoting communication channels through the physical workspace, Chemba District Council employees are more likely to feel connected with their colleagues and engaged in their work. A conducive physical workspace contributes to the overall well-being of employees. Factors such as access to natural light, green spaces, and comfortable break areas can positively impact mental health and reduce stress levels. At Chemba District Council, prioritizing employee well-being through the physical workspace demonstrates a commitment to creating a supportive work environment that values the health and happiness of its staff members. The physical workspace plays a crucial role in fostering a sense of belonging among employees. By incorporating elements that reflect the organization's culture and values, such as branded decor or communal areas for socializing, employees at Chemba District Council can develop a stronger connection to their workplace. Feeling a sense of belonging can boost morale and job satisfaction, leading to higher levels of employee retention and engagement. The study findings are supported by Afsar *et al.* (2018) that a workspace that is ergonomically designed with comfortable seating, proper lighting, and suitable desk and computer setups can reduce physical strain and discomfort, leading to better health and well-being for employees. This, in turn, contributes to higher job satisfaction. A well-organized and distraction-free workspace can help employees concentrate better and be more productive. Factors like adequate privacy, noise control, and proper ventilation can create an environment conducive to focused work, enhancing job satisfaction. Conversely, among those who responded positively (Yes) to their physical workspace, 53 (81.58%) were satisfied, and 29 (76.32%) were not satisfied. This suggests that a positive perception of the physical workspace is associated with higher levels of job satisfaction.

Similarly, for the variable of Work hours and Workload, the chi-square value is 5.8889 with a p-value of 0.015, indicating a significant association. Among employees who reported dissatisfaction with work hours and workload (No), 21 (30.88%) were not satisfied, and 4 (10.26%) were satisfied. This entails that work hours play a vital role in determining employee

satisfaction at Chemba District Council. When employees are required to work excessive hours without adequate rest or breaks, it can lead to burnout, decreased job satisfaction, and increased turnover rates. On the other hand, providing employees with reasonable work hours that allow for a healthy work-life balance can enhance job satisfaction and overall well-being. For example, if employees at Chemba District Council are consistently required to work overtime without proper compensation or recognition, it can result in feelings of resentment and dissatisfaction. Conversely, implementing flexible work schedules or offering telecommuting options can empower employees to manage their time effectively, leading to higher levels of job satisfaction. Meanwhile, the workload assigned to employees also plays a significant role in determining their level of satisfaction at Chemba District Council. A manageable workload that aligns with employees' skills and capabilities can boost morale and job satisfaction. Conversely, overwhelming workloads that exceed employees' capacity can lead to stress, fatigue, and decreased job satisfaction. If employees at Chemba District Council are consistently overloaded with tasks that surpass their abilities or resources, it can negatively impact their performance and job satisfaction. Providing adequate resources, training opportunities, and support systems to help employees manage their workload effectively is essential for enhancing job satisfaction and overall productivity. When work hours and workload are optimized to meet the needs of employees at Chemba District Council, it results in higher levels of job satisfaction. Employees feel valued, respected, and motivated to perform at their best when they have a healthy balance between work responsibilities and personal life. This leads to increased engagement, loyalty, and commitment to the organization's goals. The study findings are supported by Judges (2017) who claimed that reasonable work hours and a manageable workload allow employees to maintain a healthy balance between their professional and personal lives. When work demands encroach too much on personal time and responsibilities, it can lead to burnout, stress, and dissatisfaction with the job. Excessive workloads and long work hours can create a high-stress environment, where employees feel overwhelmed and unable to cope with the demands of their job. This can lead to physical and mental exhaustion, decreased productivity, and a general sense of dissatisfaction with the job. On the other hand, among those satisfied with work hours and workload (Yes), 47 (69.12%) were satisfied, and 35 (89.74%) were not satisfied. This indicates that favourable perceptions of work hours and workload are linked to higher levels of job satisfaction.

Lastly, on Job autonomy and teamwork, test the chi-square value is 32.1033 with a p-value of 0.000, showing a highly significant association. Among employees without job autonomy and teamwork (No), 13 (20.63%) were not satisfied, and 12 (27.27%) were satisfied. What gives an implication of the fact that At Chemba District Council, providing job autonomy to employees can contribute significantly to their satisfaction. For example, allowing employees to have flexibility in how they manage their daily tasks can lead to a greater sense of ownership and accomplishment. When individuals feel that they have the authority to make decisions related to their work without constant supervision, it can enhance their motivation and engagement.

On the other hand, teamwork involves collaboration among individuals working towards a common

goal. When employees at Chemba District Council are encouraged to work together effectively as a team, it fosters a sense of belonging, support, and camaraderie. This collaborative environment can positively impact employee satisfaction in several ways. Teamwork promotes communication and idea-sharing among employees, leading to enhanced problem-solving abilities and innovation. When individuals feel supported by their colleagues and are able to rely on each other for assistance, it creates a positive work culture that boosts morale and job satisfaction. Additionally, successful teamwork often results in shared successes and achievements, which can further motivate employees and increase their overall job satisfaction. Employees at Chemba District Council who are given autonomy in managing their projects may experience higher job satisfaction levels compared to those with limited independence. For instance, a project manager who has the freedom to choose the strategies for implementing a community development initiative may feel more invested in the project's success. In departments where teamwork is emphasized at Chemba District Council, such as during collaborative efforts on public service campaigns or infrastructure projects, employees may report greater job satisfaction due to the sense of unity and shared accomplishments within the team. Conversely, among those with job autonomy and teamwork (Yes), 50 (79.37%) were satisfied, and 32 (72.73%) were not satisfied. This suggests that having job autonomy and positive teamwork environments is strongly associated with higher career satisfaction levels.

Table 4.1.1 The Association between Working Environments on Career Satisfaction Among Employees

Variable	Not satisfied	Satisfied	Chi-square	P-Value
Physical workspace			4.9899	0.025
No	22(18.42)	53(81.58)		
Yes	3(23.68)	29(76.32)		
Work hours and Workload			5.8889	0.015
No	21(30.88)	47(69.12)		
Yes	4(10.26)	35(89.74)		
Job autonomy and teamwork			32.1033	0.000
No	13(20.63)	50(79.37)		
Yes	12(27.27)	32(72.73)		

Overall, the data indicates that the physical workspace, work hours and workload, and job autonomy with teamwork significantly influence employee satisfaction levels, highlighting the importance of these factors in creating a positive work environment. The study findings are linked to the study by Ng *et al.* (2019) that when employees have autonomy, they feel a sense of ownership and responsibility for their work, which can increase intrinsic motivation and job satisfaction. Autonomy allows employees to exercise their skills, creativity, and problem-solving abilities, leading to a greater sense of accomplishment and fulfillment. Employees with autonomy can tailor their work methods to their preferences, strengths, and work styles, resulting in better work-life balance and job satisfaction.

4.2 Diagnosis Test

4.2.1 Omnibus Tests of Model Coefficients

Working environment, the omnibus test also indicates a significant association ($\chi^2 = 28.095$, $df = 4$, $p = 0.004$). This suggests that the Working environment factors considered in the model have a significant impact on Career satisfaction, at 0.05 level of significance.

Table 4.2. 1 Omnibus Tests of Model Coefficients

Logistic regression model	Chi square	Degree of freedom	significance
working environment on career satisfaction	7.1419	3	0.002

4.2.3 Hosmer and Lemashow Model Test

the logistic regression model examining the Working environment, the Hosmer and Lemeshow test shows a chi-square value of 1.748 with 4 degrees of freedom and a p-value of 0.276. Again, with a p-value greater than 0.05, this suggests that the model also fits the data adequately. Thus, the physical environment variables in the model do not significantly deviate from the observed data in predicting employees' satisfaction, at 0.05 level of significance.

Table 4.2..2 Hosmer and Lemashow Model Test

Logistic regression model	Chi square	Degree of freedom	significance
working environment on career satisfaction	1.748	4	0.276

4.3 To Examine the Effect of the Working Environment on Career Satisfaction Among Employees.

The results of a logistic regression analysis examining the effect of the working environment on career satisfaction among employees. The analysis includes three aspects of the working environment: physical workspace, work hours and workload, and job autonomy and teamwork. The base outcome for career satisfaction is "Not satisfied." Physical Workspace. The coefficient (Coef.) for the physical workspace is 0.511. The odds ratio (OR) is 1.0417. The z-value is 6.222. The p-value ($P>|z|$) is 0.065. The positive coefficient (0.511) and odds ratio (1.0417) suggest a slight positive association between having a suitable physical workspace and career satisfaction. However, the p-value of 0.065 is above the 0.05 significance threshold, indicating that this relationship is not statistically significant. Thus, there is insufficient evidence to conclude that the physical workspace significantly affects career satisfaction.

The coefficient (Coef.) for work hours and workload is 1.2619. The odds ratio (OR) is 2.4312 and the z-value is 14.114. The p-value ($P>|z|$) is 0.001. The positive coefficient (1.2619) and odds ratio (2.4312) suggest that employees with manageable work hours and workloads are more than twice as likely to report career satisfaction compared to those without such conditions. The p-value of 0.001 is well below the 0.05 threshold, indicating that this result is statistically significant.

Therefore, work hours and workload have a significant impact on career satisfaction. Job Autonomy and Teamwork.

The coefficient (Coef.) for job autonomy and teamwork is 1.4011. The odds ratio (OR) is 3.0312. The z-value is 10.164. The p-value ($P>|z|$) is 0.000. Interpretation: The positive coefficient (1.4011) and odds ratio (3.0312) indicate that employees who experience job autonomy and effective teamwork are three times more likely to report career satisfaction. The p-value of 0.000 shows this result is statistically significant at the 0.05 level, demonstrating that job autonomy and teamwork significantly enhance career satisfaction. Constant: The constant coefficient is 0.1616 with an odds ratio of 0.1783 and a z-value of 0.3436. The p-value ($P>|z|$) is 0.000. Interpretation: The constant term in the model is statistically significant, which sets the baseline level of career satisfaction when all predictors are held at zero.

Table 4.3.3. Logistic Regression Analysis to examine the physical environment on employees' satisfaction in NFRA

Career satisfaction	Coef.	Odds Ratio	z	$P>|z|$
Not satisfied (base outcome)				
Openness and conscientiousness				
Yes	1.884	2.246	18.93	0.001
No (Reference)				
Extraversion				

Yes	1.2122	1.9783	12.87	0.006
No (Reference)				
Agreeableness and Neuroticism Yes	0.3516	1.002	3.422	0.071
No (Reference)				
Constant	0.553	.1154	0.423	0.000

Number of observation = 107 LR Chi2(3) = 109.2

Prob > Chi2 = 0.000

Pseudo R2 = 0.65

Source: Authors compilation from STATA 17

Overall, the logistic regression model includes 107 observations and has a Likelihood Ratio (LR) Chi2 value of 66.074 with a p-value of 0.000, indicating that the model as a whole is statistically significant. The Pseudo R2 value of 0.6045 suggests that the model explains approximately 60.45% of the variance in career satisfaction. Notably, work hours and workload, as well as job autonomy and teamwork, show significant positive effects on career satisfaction, while the physical workspace does not have a statistically significant effect at the 0.05 level.

5.0 Discussion

The findings of the present study regarding the role of the Working environment on Career satisfaction within Chemba district a general perception among participants that the Working environment has potential impacts on their overall satisfaction.

In The logistic regression analysis indicates a coefficient of 0.511 and an odds ratio of 1.0417 for the physical workspace, suggesting a slight positive association with career satisfaction. However, the p-value of 0.065 indicates that this relationship is not statistically significant. This finding suggests that while an appropriate physical workspace can positively impact employee satisfaction, the effect may not be strong enough to be deemed statistically reliable. Existing literature supports the notion that environmental factors, such as ergonomically designed spaces, contribute to employee well-being and productivity Afsar et al., (2018). Ergonomics can reduce physical strain, potentially leading to improved job performance. However, as the results show, the impact may vary among individuals, and further research could explore specific aspects of the workspace that might enhance satisfaction more significantly.

In contrast to the physical workspace, work hours and workload demonstrate a strong relationship with career satisfaction, evidenced by a coefficient of 1.2619 and an odds ratio of

2.4312. The p-value of 0.001 indicates a statistically significant impact, suggesting that employees with manageable workloads and reasonable work hours are more than twice as likely to report satisfaction. This aligns with previous studies that emphasize the importance of work-life balance and manageable workloads in enhancing employee satisfaction and reducing burnout (Judges, 2017). Organizations that prioritize reasonable work hours and workload distribution are likely to see improved employee morale and retention.

The variable of job autonomy and teamwork has the most substantial impact on career satisfaction, with a coefficient of 1.4011 and an odds ratio of 3.0312. The p-value of 0.000 confirms this relationship is statistically significant. Employees who experience autonomy in their roles and engage in effective teamwork are three times more likely to report satisfaction. This finding resonates with the body of literature that links autonomy and collaboration to higher job satisfaction and employee engagement (Ng et al., 2019). When employees feel empowered to make decisions and collaborate with colleagues, it fosters a positive work environment that enhances their sense of belonging and motivation. Organizations should thus focus on cultivating a culture that encourages autonomy and teamwork to improve overall job satisfaction.

6.0 Conclusion

This study underscores the significant influence of the working environment on career satisfaction among employees at Chemba District Council. The analysis reveals that while the physical workspace has a positive, albeit non-significant, association with satisfaction, work hours and workload, along with job autonomy and teamwork, demonstrate strong and statistically significant impacts. These findings highlight the critical importance of manageable workloads and fostering a collaborative culture that promotes employee autonomy. By prioritizing these factors, organizations can enhance employee satisfaction, reduce turnover, and ultimately improve overall organizational performance. This research contributes valuable insights for policymakers and organizational leaders, emphasizing the need for comprehensive strategies that create supportive and engaging work environments. Future studies could further explore specific elements within these variables to deepen the understanding of their effects on employee satisfaction and performance..

7.0 Recommendations

The government should implement policies that promote work-life balance and mental well-being in the workplace. This could include regulations on maximum work hours and guidelines for promoting healthy work environments. Additionally, initiatives that support ergonomic standards in public sector offices can help create healthier workplaces, which may lead to improved productivity and employee satisfaction.

Chemba District Council should prioritize investments in physical workspace improvements, ensuring that work environments are ergonomically designed and conducive to collaboration. Furthermore, the Council should consider regular assessments of workload distribution among

employees to prevent burnout. Offering flexible work arrangements can also enhance employee satisfaction and overall performance.

Employers within the Chemba District Council should foster a culture of autonomy and teamwork by empowering employees to make decisions related to their roles. Providing training and resources for effective teamwork can enhance collaboration. Regular feedback mechanisms should be established to ensure that employees feel valued and heard, which is crucial for maintaining high levels of job satisfaction.

Employees should take an active role in voicing their needs regarding workload management and workplace conditions. Engaging in open communication with supervisors about work hours and responsibilities can lead to a more balanced work environment. Additionally, employees should prioritize their well-being by seeking support when feeling overwhelmed, thereby contributing to a healthier workplace culture.

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The impact of the Managerial Support on Implementation of Internal Audit Recommendations in Local Government Authorities: A Case of Dodoma City Council

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Abstract

This paper investigates the impact of managerial support on the implementations of internal audit recommendation in local government authorities. The study draws experience from Dodoma City Council. Using explanatory research design, a sample of 222 employees was randomly selected from Dodoma City Council. Data were collected through survey questionnaire while the descriptive statistics were presented through mean and standard deviation. Also, inferential statistics were presented using linear regression analysis. The findings show that management is committed in allocating resources, incorporating strategic plan and supporting training and capacity building. The study further unveils that allocation of resources, incorporation into the strategic plan, training and capacity building are significantly associated with the implementation of internal audit recommendations in local government authorities. The study recommends that the management of Dodoma City Council should continue supporting the audit committee in order to be active, independent, and well-resourced. In addition, it is recommended that the committee should regularly review progress on implementing audit recommendations, provide guidance to management on addressing any challenges, and report directly to senior leadership.

Keywords: *Internal Audit Recommendations, Local Government Authorities, Dodoma City Council*

1.0 Introduction

The field of internal audit has garnered increasing attention in recent years, particularly within the context of global corporate governance (Mahyoro & Kasoga, 2019). The implementation of internal audit recommendations is crucial for organizations to enhance their operations and achieve their objectives. Successful implementation requires senior management oversight, audit committee involvement, and robust follow-up mechanisms (Alias, 2019). Internal auditors play a vital role in assisting local government authorities (LGAs) in maintaining comprehensive frameworks for governance and accountability. The successful implementation of audit recommendations requires senior management oversight, audit committee, follow-up mechanisms implementation approaches that set clear actions, and aggressive monitoring and follow-up (Alias, 2019). The internal audit function plays an important role in helping local government authorities maintain a comprehensive framework of internal controls. Internal auditors assist management in monitoring the design and proper functioning of internal control policies and procedures, and also conduct performance audits, special investigations, and studies (Mahyoro & Kasoga, 2021). In developed countries such as

the UK and US, the implementation of internal audit recommendations is a legal requirement. The Federal Managers' Financial Integrity Act of 1982 in the US and the Standards for Internal Controls in the Federal Government require prompt resolution of audit recommendations (Tahajuddin *et al.*, 2019). In the UK, the Chartered Institute of Internal Auditors (IIA) has developed a code of practice that outlines the principles and practices for internal audit, including the implementation of recommendations (Katuli, 2019).

However, the situation in developing countries presents a different picture. In many African nations, while the importance of implementing internal audit recommendations is recognized, challenges persist. Limited resources, lack of political will, and inadequate follow-up mechanisms often hinder the effective implementation of audit recommendations. This gap between developed and developing nations highlights the need for context-specific research and solutions. In Tanzania, the decentralization of decision-making has transferred power and authority from the central government to LGAs. This process aims to empower local communities, enhance service delivery, and foster development at the grassroots level (Massawe, 2020).

LGAs in Tanzania are established under Articles 145 and 146 of the 1977 Constitution of the United Republic of Tanzania. Their primary functions include social development, public service delivery, and promotion of local development through participatory processes (Rugeiyamu *et al.*, 2018). Ideally, internal audit has a crucial role in boosting organizations accomplish their desired objectives. It has constantly been viewed as fundamental part in corporate governance, and improving the performance of the public and private institutions (Manyama, 2020). It is from this context the government established Internal Auditor General Division (IAGD) based on the Public Finance Act, 2004 as amended in 2010. This Act compels accounting officers to establish an efficient internal audit service unit within the council as stated in Regulation 28 of the Public Finance Regulations 2001 revised in 2004. Pursuant to this Act LGAs were required to fully comply not with audit but also implement all internal audit recommendations.

Weak audit committees, inadequate resources, insufficient management commitment, and deficient auditor skills have been identified as key obstacles to the implementation of internal audit recommendations (Wadesango, 2017). Similarly, Dwamena (2021) revealed that internal auditors face many setbacks. Internal auditors are taken for granted and lack independence and cooperation from other staff and management support. Again, they have defined scope of work with limited power and have inadequate career development to make them effective in performing their roles. Likewise the study by Onumah, and Krah (2012), the effectiveness of internal audit in the Ghanaian public sector is hampered by several factors: low professional proficiency of internal auditors; lack of management ownership and support for internal audit activities, lack of budget authority of the internal audit units and weak functioning of audit committees, among others.

Thus, most reviewed studies focused on the challenges facing internal auditors were conducted outside Tanzania (Onumah & Krah, 2012; Wadesango, 2017; Dwamena, 2021). Also, studies in the Tanzanian context had their focus on the challenges facing internal auditors

(Mtelevu & Sila 2021; Mbogella *et al.* 2024). Thus, there is a dearth of literature focusing on the impact of managerial support on the implementation of internal audit recommendations in local government authorities.

While Tanzania government emphasizes on community development and service delivery (Mwita, 2023), specific research focusing on the implementation of internal audit recommendations in Tanzania's LGAs are lacking. But the current study will increase the degree of implementation of internal audit recommendations in LGAs the effectiveness and efficiency to the staff and decision makers. The study is crucial for effective implementation of audit recommendations due to the essential for achieving value for money in public finance management within LGAs, also it is vital for enhancing accountability and transparency in local governance, and understanding the factors influencing implementation can inform policy decisions related to management support.

2.0 Literature Review

2.1 Theoretical Literature

2.1.1 Management Support

Management support refers to the active involvement, commitment, and assistance provided by an organization's leadership to ensure the successful implementation and operation of various initiatives, projects, and day-to-day activities. Effective management support is crucial for the success of any organization, as it ensures that teams have the backing they need to achieve their objectives and contribute to the organization's overall mission (Jafar *et al.*, 2022).

2.1.2 Internal Audit

Internal audit refers to the strategies and practices implemented within the decentralized health system to maintain skilled healthcare professionals within their roles over time. It encompasses the policies aimed at creating a supportive and motivating work environment that encourages employee engagement, commitment to organizational goals, and a sense of job satisfaction (Krichene, & Baklouti, 2021). Indicators of retention in this study include factors such as trainings opportunities, career development prospects, work-life balance initiatives, competitive compensation and benefits, recognition and rewards for performance, and supportive leadership. These indicators collectively measure the effectiveness of organizational strategies in reducing turnover and retaining healthcare professionals in Dodoma City's decentralized health system.

2.1.3 Internal Audit Recommendations (IAR)

Internal audit recommendations are suggestions and proposals made by internal auditors to enhance an organization's operations, governance, risk management, and internal control processes. Previous studies have investigated the factors affecting internal audit

effectiveness (Alqudah, *et al.*, 2019). Internal auditing is an independent, objective assurance and consulting activity designed to add value and improve organization's operations. In order to strengthen the implementation of internal audit recommendations in LGAs there is the need for government to support management of local government by overseeing the implementation of internal audit recommendations to achieve the goals of local governments especially in Dodoma City Council.

2 Theoretical Framework

2.2.1 Resource Based Theory

Resource based theory was developed in the mid-1980s by Birger Wernerfelt, Jay Barney, and other organizational theorists and it was merged as a counterpoint to Porter's theory that a firm's external environment determines strategy and performance (Barney, 2001). According to this theory, resources can be tangible (financial capital, physical assets) or intangible (specialized skills, organizational culture, and intellectual property) (Barney, 2001). Managerial support plays a crucial role in allocating resources to implement internal audit recommendations. When managers are supportive, they are more likely to allocate necessary resources such as budget, time, and personnel to ensure that audit recommendations are effectively implemented. From a resource-based theory perspective, managerial support can be viewed as a critical resource that contributes to the successful implementation of internal audit recommendations. The resource-based theory (RBT) provides some insights into the implementation of internal audit recommendations in Local Government Authorities (LGAs) in Dodoma Municipal Council, Tanzania, but it also has some limitations.

In the field of internal audit and the implementation of audit recommendations, several studies have utilized the resource-based theory as a theoretical framework: Mahyoro and Kasoga (2021) assessed the role of management support in enabling effective internal auditing in the Tanzanian public sector context, leveraging the resource-based theory to understand how internal audit capabilities can be a source of competitive advantage. These studies demonstrate the applicability of the resource-based theory in understanding the implementation of internal audit recommendations and the role of internal audit capabilities in contributing to organizational performance and competitive advantage. However, RBT primarily focuses on internal resources and capabilities, but it may not adequately address the influence of external factors, such as regulatory requirements, stakeholder expectations, or political considerations, which can also play a significant role in the implementation of internal audit recommendations in LGAs.

2.3 Empirical Literatures

Girma (2023), conducted a study to determine the variables influencing Commercial Nominees Plc's internal audit effectiveness in Ethiopia. To assess the impact of internal organization, internal audit quality, management support, and internal audit competencies on internal audit efficiency, the study used both quantitative and qualitative data to get data-

gatherings. Using a stratified random sampling technique, 270 employees made up the study's sample. The results showed that the greatest influence on internal audit efficiency came from managerial assistance. Significant determinants also included internal organization, audit quality, and the competencies of internal auditors. According to the study, management support plays a crucial role in improving the efficacy of internal audits. It is suggested that the effective execution of internal audit recommendations is largely dependent on managerial support and sufficient resources. The study is relevant in the sense that it focused on internal audit. However, the study was conducted in private entities while the current study was conducted in public entities. Similarly, the reviewed study was conducted in Ethiopia while the current study was conducted in Tanzania.

Similar to the study by Girma (2023), the research by Jaffar *et al.* (2022) was also conducted outside Tanzania. However, the study assessed the relationship between internal audit Function in Malaysia, Management Support, and Corporate Governance in the Public Sector. The study employed both Agency and Institutional theories. The Google Scholar online means was used to collect the articles systematically sampled. It was revealed that management support fostered the IA performance through staffing, training, and compensation for effectiveness. Also management's active involvement and buy-in demonstrate their commitment to addressing the issues identified by the internal audit. Effective implementation of internal audit recommendations often requires the allocation of resources, such as personnel, budget, and time. Management's support is crucial in ensuring that the required resources are made available to implement the recommendations. Thus, the reviewed study by Moreover, Jaffar *et al.* (2022) focused on assessing the relationship between internal audit function, the current study focused on the impact of the managerial support on implementation of internal audit recommendations in local government authorities. Likewise, the study was conducted in Malaysia while the current study was conducted in Tanzania.

Additionally, Alzeban and Gwilliam (2012) conducted a study that aimed to furnish empirical information regarding the main factors that impact the efficiency of internal audits in public sector organizations located in Saudi Arabia. They examined the relationship between internal audit effectiveness and five principal factors internal audit competence, internal audit department size, internal and external auditor relationship, management support for internal audit, and internal audit department independence using data from 79 public sector organizations and 442 usable questionnaires responses. They also used conventional multiple regression and path analysis. Their findings indicated that management support was the primary driver of internal audit effectiveness, significantly influencing other aspects such as hiring qualified staff, providing sufficient resources, enhancing relationships with external auditors and maintaining an independent internal audit department.

Meanwhile, Poltak *et al.* (2019) looked at what factors affected internal audit effectiveness; they discovered that management support was a significant moderating factor in Indonesia. According to the study, management support has a beneficial impact on internal audit effectiveness, especially in companies where the internal audit function is well-established and when management values internal auditors' opinion. Like the study by Girma

(2023), Jaffar *et al.* (2022), and the study by Alzeban and Gwilliam (2012), the study by Poltak *et al.* (2019) was also conducted outside Tanzania.

On the other hand the study conducted in Tanzania by Dogani (2020) focused on the effectiveness of internal audits in enhancing financial management of the Fire and Rescue Force departments using the case of the Fire and Rescue Force department and find out challenges facing effectiveness in internal audit. The study noted that internal audit units in the Fire and Rescue Force department are effective; their effectiveness was due to several factors; including the independence of internal auditors, roles of the audit committee, and resources to internal auditors, due care, training and promotion. The study however was conducted in central government entities while the current study was conducted in local government authorities.

Moreover, Mtelevu and Sila (2021) determined internal auditors' challenges in implementing IRMF in mitigating organisational Risks in Higher Learning institutions in Tanzania, a Case Study of One Higher learning institution in Arusha. The results indicated that there are several challenges are affecting audit at One Higher learning institution in Arusha such as lack autonomy independent, inadequate funding, involvement of internal auditors in non- audit work, Inadequacy number of staff and inadequate staff training on risk mitigation and management, inadequate management support, staff awareness of risk and management response to recommendations of the Internal Auditors report is very minimal. It is clearly indicated that the focus of the study was to determine the challenges faced by auditors while the focus of this current study was to investigate the impact of managerial support on the implementations of internal audit recommendation in Local Government Authorities in Dodoma City Tanzania. Like the study by Dogani (2020), the study by Mtelevu and Sila (2021) was conducted in central government entities while the current study was conducted in local government authorities.

Also Mbogella *et al.* (2024) examined challenges facing internal auditors in Tanzania: a case of local government authorities in Tanzania. The study included that Ilala CC, Dodoma CC, Iringa MC, Singida DC, and Chamwino DC. The study found that Local Government Authorities still face serious challenges in terms of preparation of audit documents and filing systems before auditing, non-compliance to audit standards, Audit teams staying longer without updating their skills and unclear flow of command which still erodes the internal audit section. Given the fact that Internal Audit is a key parameter of good governance, addressing all audit issues, thus should not be underestimated by the Local authorities. Both these studies were conducted in local government authorities. Nevertheless, while the reviewed study by Mbogella *et al.* (2024) examined challenges facing internal auditors in Tanzania: a case of local government authorities in Tanzania, the current study focused on the impact of the managerial support on implementation of internal audit recommendations in local government authorities: a case of Dodoma City Council.

In the Tanzanian context, empirical studies have primarily focused on assessing challenges facing internal auditors as highlighted by Mtelevu and Sila (2021) and Mbogella *et al.* (2024). Yet, there have been insufficient studies in research regarding the impact of

management support on implementation of internal audit recommendations in local government authorities with reference to Dodoma City Council.

To conclude from the provided literature, a clear research gap emerges. While previous studies have investigated various aspects of internal audit effectiveness and challenges, there are some notable distinctions and gaps in relation to your research on managerial support in the implementation of internal audit recommendations within local government authorities (LGAs) in Dodoma City Council. Girma (2023) and Jaffar *et al.* (2022) focused on internal audit in private sector organizations and public entities outside Tanzania (Ethiopia and Malaysia, respectively). However, this study specifically investigated local government authorities in Tanzania, creating a gap in understanding how managerial support influences internal audit recommendations within Tanzanian LGAs.

While much of the reviewed literature, such as studies by Girma (2023) Jaffar *et al.* (2022), Alzeban and Gwilliam (2012) and Poltak *et al.* (2019), focused on different countries, there is a lack of localized research on this topic in Tanzania. This study provides a unique exploration of the Tanzanian public sector specifically Dodoma City Council filling this gap. Moreover, the studies by Dogani (2020) and Mtelevu and Sila (2021) were focused on central government entities and higher learning institutions, whereas this study focused on local government authorities, an under-researched area. This highlights the gap in understanding the dynamics and effectiveness of managerial support in local government authorities. Likewise, studies such as Mtelevu and Sila (2021) and Mbogella *et al.* (2024) focused on challenges facing internal auditors rather than the impact of managerial support on implementing audit recommendations. This research offers a new perspective by directly addressing how management's role facilitates or hinders implementation within local government authorities. Thus the study addresses a significant gap by exploring how managerial support affects the implementation of internal audit recommendations in local government authorities in Tanzania, a subject that has received limited attention in previous research. This localized focus on Dodoma City Council and the specific aspect of recommendation implementation offers a fresh contribution to the existing body of knowledge.

3.0 Material and Methods

This section describes the research methodology which includes: research design, area of study, research approach, population, sample, sampling techniques, sample size, data collection methods and tools data analysis technique, reliability and validity of the instruments and ethical considerations.

3.1 Research Design

In this study, explanatory research design was employed. Explanatory research was used to understand the cause-and-effect relationships between variables. In the context of internal audit recommendations, it helped in understanding how management support has an impact on the implementation of these recommendations.

3.2 Research Approach

Research approach entails that procession of indenting the kind of data prior data collection (Kumar, 2019). The current study used a quantitative approach because it makes it possible to gather and examine numerical data, which can then be statistically examined to find patterns, relationships, and causes (Creswell & Creswell, 2017). The research employed a quantitative approach to measure respondents' opinions using a five-dimensional Likert scale which was analyzed using linear regression to establish a statistical relationship between the independent variable (managerial support) and the dependent variable (implementation of internal audit recommendations), making this approach appropriate (Turok, 2017).

3.3 Study Area

The study was conducted at the Dodoma City Council in Tanzania. Dodoma City Council was purposively selected from among the councils in Dodoma region because it is one of the LGAs that were noticed to have low implementation rate of audit recommendations, with only 30% fully implemented within the recommended timeframe over the past year according to the Internal Audit Report (2023).

3.4 Study Population

A study population refers to the entire group of individuals, units, or entities from which a researcher draws their sample and to whom the results of a study are intended to apply. It includes all individuals who meet the predefined criteria for inclusion in the study (Cohen *et al.*, 2014). For this research, the target population comprises all employees working in the difference sections at the head office of the Dodoma City Council such as health(referral hospital, health center and clinic),Education(Primary and Secondary), Marketing, Ward executive, Agricurture, fishing and breeding, Community development,Environment and Finance. This ensures a comprehensive coverage of the relevant group necessary for the study. The population is approximately 500 staff members, which includes all those employed in the various departments at the Dodoma City Council's head office (Human Resource Data, 2023). The study population is categorized into several distinct groups based on their roles and responsibilities within the Dodoma City council departments. These categories include:

Health: This group consists of the Chief physician, chief physician in charge who are responsible for overseeing hospital activities, coordinating with other departments, and ensuring the effective implementation of audit recommendations. Their leadership and decision-making roles are critical to the audit process.,

Education: This is a group that included primary school head teachers and secondary school heard masters who also carry out the implementation of the internal audit recommendations.Their direct involvement in the audit process makes their perspectives essential for understanding the challenges and effectiveness of implementing audit recommendations.

Marketing: This category includes staff members who support to implement the internal audit recommendations. Their role is crucial in facilitating to manage and develop marketing campaign to ensuring the smooth execution of activities.

Ward Executive Officers; This group oversee all social services including supervising Mtaa executive Officers and street chairperson to fulfill their responsibility which is very essential for implementation of internal audit recommendations. While their role is more supportive, it impacts the overall efficiency and effectiveness of the audit process.

Agriculture, Fishing, and breeding: These groups are responsible for maintaining and supporting the technological systems used in the production process in agriculture, fishing and breeding in the specific department or section. Their support is vital for the successful implementation of internal audit activities.

Through categorizing the population in this manner, the study aims to ensure that all relevant aspects of the implementation are thoroughly examined and implemented. This comprehensive approach allows for an in-depth analysis of the impact of management support on implementation of internal audit recommendations in local government authorities with reference to Dodoma City Council.

3.5 Sample and Sampling Procedures

3.5.1 Sample Size

The sample size is defined as the number of observations used for determining the estimations of a given population (Kothari, 2014). Sampling is the process of selecting a subset of individuals from the population to estimate the characteristics of the whole population (Kothari, 2014). Since the population of staff working at Dodoma City Council which is 500 is known, hence Yamane (1967) formula was used. This is described with a confidence level of 95% and margin of error of 5%, the formula is expressed as hereunder;

$$n = \frac{N}{1 + N(e^2)}$$

Where: n= is number of sample (required)

N = Total population (500) and

e = Error tolerance (level) or margin of error (0.05)

$$500 / (1 + 500(0.05)^2) = 500 / 2.25 = 222$$

Table 1: Sample Size Distribution

S/N	Category	Population	Sample
1	Health	69	30
2	Education (Primary and secondary)	162	71
3	Marketing	42	19
4	Ward executive	42	19
5	Agriculture and Fishing	99	44
6	Community Development	42	19
7	Environment	42	19
8	Finance	2	1
Total		500	222

Source: Field Data (2024)

3.5.2 Sampling Procedures

The study used Purposeful sampling to select study area and categorized sectors while simple random sampling procedure to select members of sample size. To conduct simple random procedure, the study clearly identified the population of interest. The researcher created a comprehensive list of all individuals in the population. Furthermore, the study assigned a unique identifier to each individual on the list. In the same way, the researcher decided on the number of respondents the researcher wants in the sample. The study used a random method to select individuals from the list. This involved using random number tables, random number generators, or a random selection tool. The researcher ensured that each individual had an equal probability of being selected. This is a key principle of simple random sampling.

Simple random sampling ensured that every member of the population has an equal chance of being selected. This helped in eliminating selection bias and ensures that the sample is representative of the entire population. The method is straightforward and easy to understand and implement. It does not require extensive knowledge or resources to execute. It allowed for the use of statistical methods to make inferences about the population from the sample. The results are typically more generalizable and valid (Bryman & Bell, 2015).

Table 2 Sampling Procedure

Categories	No Items	Sampling technique
Study area	1	Purposeful sampling
Categorized sectors	8	Purposeful sampling
Sample size	222	Simple random sampling

Source: Field Data (2024)

3.6 Data Collection Methods

3.6.1 Survey Method

A questionnaire refers to a survey tool that is used to collect data from a sample; the tool involves a prepared list of questions reflecting the information required by the study to answer research questions (Babbie, 2013). The study administered 220 questionnaires to the respondents so as to capture their views, opinions insights and perceptions with regard to the topic at stake. Questions were assessed based on a five-point Likert scale. To achieve this, the appointment was made between the researcher and the respondents so as to get convenient time. In that regard, the study used quick and pick process whereas the respondents were left with questionnaires for one week so as to fill them.

The information that questionnaire was assigned to gather was related to specific objectives of the study namely to determine the impact of managerial support on the implementation of internal audit recommendations in the Dodoma region, to investigate the impact of management support on implementation of internal audit recommendations in local government authorities with reference to Dodoma City Council. Questionnaires were used since they allow researcher to collect data from a large number of people quickly and efficiently. Questionnaires provided a standardized way of asking questions, ensuring that all respondents receive the same questions in the same order. This helped in minimizing bias and ensuring consistency in the data collected. Questionnaires often use closed-ended questions, which were easily quantified and analyzed statistically (Creswell & Creswell, 2017).

3.7 Data Analysis

Descriptive statistics, such as percentages and frequency distribution tables as well as mean and standard deviation were then generated with the aid of SPSS. To explore the relationship between the dependent variable and independent variables, the researcher employed the multiple linear regression model.

3.8 Validity and Reliability of the Data

3.8.1 Validity of Data

To ensure validity, questionnaires were pre-tested by distributing them to statisticians and colleagues for piloting. Meanwhile the research consulted supervisor to cross check and make an amendment where necessary. According to Johnson and Christensen (2017), consulting supervisor during the research process provides an additional layer of validation and expertise. Supervisor offered valuable insights, guidance, and feedback on the research design, methodology, and data analysis. Supervisor also helped researcher identify any gaps or limitations in their study and suggest improvements to enhance the overall quality of the research.

3.8.2 Reliability of Data

Reliability means consistency and stability of information and that if research is conducted under the same circumstances' findings were replicated. Reliability was analyzed using Cronbach's alpha (α) as it predicts the variables. The usefulness of this technique is in ensuring internal consistency and group homogeneity (Creswell & Creswell, 2017).

4.1 Reliability Test

In this study, the variables were categorized into different aspects of Management Support and the Dependent Variable, which is the Implementation of Internal Audit Recommendations. Starting with Management Support, the table shows that each of the three components – Allocation of Resources, Incorporation into the Strategic Plan, and Training and Capacity Building – has a high level of internal consistency, as indicated by their Cronbach's Alpha values ranging from 0.814 to 0.839. This suggests that the items within each component are closely related, indicating a strong level of support from management in these areas. Also, Implementation of Internal Audit Recommendations, also demonstrates high internal consistency, with a Cronbach's Alpha value of 0.872. This suggests that the items related to the implementation of internal audit recommendations are closely related and consistently measure the effectiveness of this aspect of the internal audit process.

Table 3. Reliability Test by Cronbach's Alpha

Variables	No of item	Cronbach's Alpha
Management support	3	0.837
Dependent variable		
Implementations of internal audit recommendations	3	0.872

Source: Field Data (2024)

3.9 Ethical Consideration

Ethical considerations in research refer to the principles and guidelines that researchers must follow to ensure their work is conducted with integrity, respect, and responsibility

(Creswell, 2014). To comply with the ethical standards, the study considered informed consent, anonymity, plagiarism (25%), data protection, privacy and confidentiality, authorship, and publication issues. In that regard, the researcher ensured that respondents' personal information is kept confidential and that their identities are protected, unless explicit consent was given to disclose their identities. The research also maximized benefits and minimized any potential harm to respondents, all physical, emotional or psychological harm were avoided.

4.0 Findings and Discussions

In conducting descriptive statistics of respondents, relevant variables are typically summarized to provide a comprehensive overview of the sample. Common descriptive statistics include measures of central tendency such as means and medians, measures of dispersion such as standard deviations and ranges, and frequencies or percentages for categorical variables (Bryman & Bell, 2015). Additionally, continuous variables such as income or years of experience may be summarized using means and standard deviations to provide insight into the central tendency and variability within the sample. Descriptive statistics offer valuable insights into the characteristics of the respondents, aiding in the interpretation and generalization of research findings. This section shows the description of the respondents.

4.1 Summary Statistics for Independent Variable

The summary statistics for independent variables related to various aspects of internal audit effectiveness within an organization. This independent variable is categorized into Management Support, the table shows the mean, standard deviation, minimum, and maximum values for three components: Allocation of Resources, Incorporation into the Strategic Plan, and Training and Capacity Building.

On average, the scores for these components are relatively high, with means ranging from 3.473 to 4.121, indicating a generally positive perception of management support across these areas. The standard deviations suggest some variability in responses, particularly for Training and Capacity Building, which has a lower standard deviation compared to the other components, indicating less variability in responses. Proper allocation of resources ensures that the internal audit recommendations are implemented efficiently and effectively. Through allocating the necessary funds, manpower, and time to address the recommendations, organizations in Dodoma Region can streamline the implementation process.

Allocation of resources plays a crucial role in ensuring timely execution of internal audit recommendations. When organizations allocate specific resources with clear timelines and responsibilities, it helps in avoiding delays in implementing the recommendations. For instance, assigning dedicated staff members to work on each recommendation and providing them with the required resources will ensure that tasks are completed within the set deadlines. The study findings are supported by Sunnari *et al.* (2021) that proper allocation of resources enhances accountability and oversight during the implementation of internal audit recommendations. Through clearly defining roles, responsibilities, and resource allocations, organizations can hold individuals accountable for their tasks. This transparency also allows

for effective monitoring of progress and ensures that resources are utilized efficiently to achieve the desired outcomes.

Table 4. Summary Statistics of Independent Variables

Independent Variables	Mean	SD	Min	Max
Managerial support				
Allocation of resources	3.481	.738	2	5
Incorporation into the strategic plan	3.473	.807	1.8	5
Training and capacity building	4.121	.506	3	5

Source: Field Data (2024)

4.1.1 Summary Statistics of Implementations of Internal Audit Recommendations

The summary statistics for the implementation of internal audit recommendations within an organization, focus on three specific aspects: Timeliness, Accuracy, and Value for Money, as well as an overall measure. Starting with Timeliness, the mean score of 4.321 suggests that, on average, there is a high level of satisfaction with the timeliness of implementing internal audit recommendations. The relatively low standard deviation of 0.543 indicates that responses are clustered closely around the mean, suggesting a consistent perception of timeliness among respondents. The minimum score of 3 and maximum score of 5 demonstrate that while there is variability in responses, the majority perceive the timeliness of implementation as satisfactory. That is to say timely implementation of internal audit recommendations can prevent financial losses resulting from inefficiencies, errors, or fraud within an organization. If an internal audit identifies weaknesses in financial controls and recommends specific actions to address them promptly, delaying the implementation could lead to potential financial losses due to continued vulnerabilities. Implementing internal audit recommendations in a timely manner can enhance organizational efficiency by addressing operational inefficiencies or gaps promptly. For instance, if an audit reveals inefficiencies in a particular process and recommends streamlining procedures, timely implementation can lead to cost savings and improved productivity.

The study findings are in line with Alzeban and Sawan (2015) that timely implementation of internal audit recommendations is essential for ensuring compliance with regulatory requirements and industry standards. Failure to implement recommendations promptly could result in non-compliance issues, which lead to penalties or reputational damage

for the organization operating. Timely implementation of these recommendations helps mitigate risks effectively and protect the organization from potential threats.

Moving to Accuracy, the mean score of 3.231 indicates a moderately positive perception of the accuracy of implementing internal audit recommendations. However, the lower mean compared to Timeliness suggests that there may be room for improvement in ensuring the accuracy of implementation. The low standard deviation of 0.25 suggests that responses are tightly clustered around the mean, indicating a relatively consistent perception of accuracy among respondents. The wide range between the minimum score of 1 and maximum score of 5 suggests more variability in perceptions compared to timeliness. In the same trail, findings suggest that accurate implementation of internal audit recommendations ensures that identified issues are effectively addressed, leading to improved operational efficiency within government departments and agencies in Dodoma. Through accurately implementing audit recommendations, organizations in Dodoma can mitigate risks associated with non-compliance, fraud, errors, and inefficiencies. This helps in safeguarding public resources and enhancing accountability. Accuracy in implementing internal audit recommendations is essential for ensuring compliance with relevant laws, regulations, and policies governing public sector entities in Dodoma. Failure to comply can lead to legal repercussions and reputational damage. According to Abdullatif *et al.* (2015), implementing audit recommendations accurately allows organizations to optimize resource allocation by addressing weaknesses or inefficiencies identified during the audit process. This leads to cost savings and better utilization of public funds. When internal audit recommendations are implemented accurately, stakeholders such as citizens, taxpayers, donors, and oversight bodies gain confidence in the transparency and accountability of government entities.

For Value for Money, the mean score of 3.104 indicates a moderate perception of the value obtained from the resources invested in implementing internal audit recommendations. The low standard deviation of 0.203 suggests that responses are closely grouped around the mean, indicating a consistent perception of value for money among respondents. The minimum score of 2 and maximum score of 5 demonstrate variability in responses, with some respondents perceiving higher value for money than others. However, ensuring value for money helps in efficient allocation of resources towards implementing internal audit recommendations. Through prioritizing actions that provide the most significant impact relative to their cost, organizations can optimize resource utilization and achieve better outcomes. Emphasizing value for money ensures that the costs associated with implementing internal audit recommendations are justified by the benefits derived. This approach helps organizations avoid unnecessary expenses and focus on initiatives that deliver tangible results.

The study findings are supported by Tahajuddin and Kertali (2018) who revealed that when organizations prioritize value for money in implementing internal audit recommendations, they demonstrate accountability to stakeholders. Through showing that resources are used effectively and efficiently, organizations build trust and credibility with stakeholders. Value for money considerations promotes sustainability in the implementation of internal audit recommendations. Through ensuring that resources are utilized wisely,

organizations can maintain long-term effectiveness and impact without compromising financial stability.

Finally, the Overall measure, with a mean score of 3.818, suggests a generally positive perception of the overall effectiveness of implementing internal audit recommendations. The standard deviation of 0.496 indicates some variability in responses, suggesting that opinions about the overall effectiveness vary among respondents. The range between the minimum score of 2.714 and maximum score of 5 indicates variability in perceptions but generally leans towards a positive assessment. Generally, it can be said that while there is a high level of satisfaction with the timeliness of implementation, there may be opportunities to improve the accuracy and perceived value for money of implementing internal audit recommendations. Overall, the organization receives a moderately positive assessment for its effectiveness in implementing internal audit recommendations, with some variability in perceptions across different aspects.

Table 5 Summary statistics of Implementations of internal audit recommendations

Implementations of internal audit recommendations	Mean	SD	Min	Max
Timely	4.321	.543	3	5
Accuracy	3.231	.25	1	5
Value for money	3.104	.203	2	5
Overall	3.818	.496	2.714	5

Source: Field Data (2024)

4.1.2 Model Building and Assumption Test

When building a linear multiple regression models, several assumptions need to be considered to ensure the accuracy of results. The assumptions include linearity, independence of errors, homoscedasticity, normality of errors, and absence of multicollinearity (Gujarati & Porter, 2009). Firstly, linearity assumes that there is a linear relationship between the independent variables and the dependent variable. Secondly, the independence of errors assumes that the errors are not correlated with each other. Homoscedasticity assumes that the variance of errors is constant across all levels of the independent variables. The normality of errors assumes that the errors are normally distributed.

Lastly, the absence of multicollinearity assumes that there is no strong linear relationship between the independent variables. These assumptions can be tested using various diagnostic tools such as scatterplots, residual plots, Durbin-Watson statistics, and tests for normality and multicollinearity (Hair *et al.*, 2010). Ensuring these assumptions are met is crucial for the reliability and interpretability of the results obtained from the multiple regression analysis. The assumption test is explained in this part of chapter four.

4.1.2.1 Test for Outlier and Influential Variables

Outliers are the data points that significantly differ from most observations in a dataset (Sullivan *et al.*, 2021). They can distort statistical analyses and change how results are interpreted if they are not properly addressed. Given that it visually represents the distribution of the data and highlights any extreme values, a boxplot is a helpful tool for locating outliers (Sullivan *et al.*, 2021). Based on the regression test statistics conducted on a dataset comprising 222 observations, it is notable that none of the observations were identified as outliers or influential points.

4.1.2.2 Test for Omission of Variable

The results of the Ramsey RESET test for omitted variables in linear multiple regression models examine the relationship between managerial support and the implementation of internal audit recommendations. The Ramsey RESET test is utilized to detect potential misspecification in the regression model, particularly the omission of important variables that could influence the dependent variable. For the model examining managerial support in implementing internal audit recommendations, the F-statistic is 2.224 with 3 and 220 degrees of freedom, resulting in a p-value of 0.116. At the 0.05 level of significance, the p-value exceeds the threshold, indicating that there is insufficient evidence to reject the null hypothesis. This suggests that the model is adequately specified, and there are no significant omitted variables affecting the implementation of internal audit recommendations in relation to managerial support.

4.1.2.3 Test for Model Fit

The results of the link test for model variables in linear multiple regression models examining the relationship between managerial support and the implementation of internal audit recommendations. The link test assesses the overall goodness-of-fit of the regression model by evaluating whether the model's predicted values are significantly related to the observed values. For the model examining managerial support on implementing internal audit recommendations, the hat statistic is 11.016 with a corresponding p-value of 0.001. This indicates that the predicted values from the regression model are significantly related to the observed values at the 0.05 level of significance, providing evidence of a good fit for the model.

Table 6. Link test for Model variables

Linear multiple regression models	_hat statistic	Z-statistics	P-value
managerial support on implementing internal audit recommendations	_hat	11.016	0.001
	_hatsg	4.443	0.07

Source: Field Data (2024)

4.1.2.4 Test for Normality

A dataset is said to be normal if its data points are distributed in a way that makes them symmetrically cluster around the mean, producing a bell-shaped curve on a histogram (Hazra & Gogtay, 2016). Because many parametric tests presume that the data is regularly distributed, testing for normality is essential in statistical analysis. The table displays the results of the Shapiro-Wilk test for normality conducted on linear multiple regression models assessing the relationship between managerial support, follow-up mechanisms, audit committee factors, and the implementation of internal audit recommendations.

The Shapiro-Wilk test is employed to evaluate whether the residuals from the regression models follow a normal distribution, which is a crucial assumption for regression analysis. For the model examining managerial support in implementing internal audit recommendations, the Shapiro-Wilk test yields a Z value of 1.116 with a corresponding p-value of 0.107. At the 0.05 level of significance, the p-value exceeds the threshold, indicating that there is insufficient evidence to reject the null hypothesis of normality. Thus, the residuals from this model appear to be approximately normally distributed, satisfying one of the key assumptions of linear regression analysis.

Table 7. Shapiro-Wilk test for Normality

Linear multiple regression models	Observations	Z value	P-value
managerial support on implementing internal audit recommendations	222	1.116	0.107

Source: Field Data (2024)

4.1.2.5 Test for Heteroscedasticity

Using Levene's Test (1960) for Homogeneity of Variances, homoscedasticity was assessed. This test determines if the variance of the dependent variable is constant over the range of predictor variables. Combining the two groups' variances is improper and will not yield a trustworthy estimate of the common within-group variances if the variances between the two groups differ noticeably. To assess if the variances for the variables were equal, Levene's Test for Homogeneity of Variances was used. Gel *et al.* (2009) state that the variances are about comparable and not significantly different if the test result is significant ($p\text{-value} > 0.05$). The results of the Breusch-Pagan/Cook-Weisberg test for heteroscedasticity in linear multiple regression models examining the impact of managerial support on the implementation of internal audit recommendations. Heteroscedasticity refers to the unequal variance of residuals across different levels of the independent variables, which can violate the assumptions of linear regression and lead to biased standard errors and incorrect inferences. For the model assessing managerial support on implementing internal audit recommendations, the Breusch-Pagan/Cook-Weisberg test produces a Z value of 1.116 with a corresponding p-value of 0.107. At the 0.05 level of significance, the p-value exceeds the threshold, indicating that there is no

significant evidence to reject the null hypothesis of homoscedasticity. Thus, there is no strong indication of heteroscedasticity in this regression model.

Table 8 Breusch–Pagan/Cook–Weisberg test for heteroscedasticity

Linear multiple regression models	Observations	Z value	P-value
managerial support on implementing internal audit recommendations	222	1.116	0.107

Source: Field Data (2024)

4.1.2.6 Test for Multicollinearity

Multicollinearity is the phenomenon when independent variables in a regression model exhibit strong correlations with one another variables (Kumari, 2008). Due to this association, the regression coefficients may be difficult to understand, producing estimates that are unstable and exaggerated standard errors. To guarantee the validity of the statistical conclusions taken from the model and the dependability of the regression findings, multicollinearity testing is necessary. The Variance Inflation Factor (VIF) and tolerance are two commonly used measures to evaluate multicollinearity (Senaviratna & Cooray, 2019).

With a threshold value of 5 commonly regarded as suggestive of multicollinearity, VIF quantifies the degree to which the variance of an estimated regression coefficient is exaggerated as a result of multicollinearity. Conversely, tolerance quantifies the percentage of an independent variable's variance that cannot be accounted for by other independent variables; values less than 0.1 imply multicollinearity. The results of the Variance Inflation Factor (VIF) test assessed multicollinearity among predictor variables in linear multiple regression models. Multicollinearity occurs when independent variables in a regression model are highly correlated with each other, potentially leading to inflated standard errors, unreliable coefficient estimates, and reduced interpretability of the model.

For the model examining managerial support on implementing internal audit recommendations, the VIF values for Allocation of Resources, Incorporation into the Strategic Plan, and Training and Capacity Building are 3.760, 4.782, and 2.768, respectively. These values suggest no multicollinearity among the predictor variables. Similarly, the Tolerance values, which are the reciprocal of VIF, indicate that these variables explain a substantial portion of the variation in each other, with Tolerance values ranging from 0.209 to 0.361.

Table 9. Variance Inflation Factor Test for Multicollinearity

Linear multiple regression models	VIF	Tolerance
Managerial support on implementing internal audit recommendations		

Allocation of resources	3.760	0.266
Incorporation into the strategic plan	4.782	0.209
Training and capacity building	2.768	0.361

Source: Field Data (2024)

4.1.2.7 Test for Autocorrelation

The Durbin-Watson test, which assesses whether residuals in a regression analysis have any association at all, was used to test for autocorrelation. A score of about 2 denotes no autocorrelation in the Durbin-Watson statistic, which has a range of 0 to 4 as recommended by Gel *et al.* (2009). Values that are close to 0 indicate positive autocorrelation, whereas those that are close to 4 indicate negative autocorrelation (Gel *et al.*, 2009). The Durbin-Watson test is a statistical method used to assess whether the residuals of a regression model exhibit autocorrelation, which occurs when there is a correlation between the errors (residuals) at different time points. In this table, have the Durbin-Watson statistics for Managerial support on implementing internal audit recommendations. The Durbin-Watson statistic typically ranges from 0 to 4. A value of 2 indicates no autocorrelation, with values closer to 0 indicating positive autocorrelation and values closer to 4 indicating negative autocorrelation. For the model assessing the impact of managerial support, the Durbin-Watson statistic is 2.75. This value is significantly higher than 2, suggesting the absence of autocorrelation.

Table 10 Durbin-Watson Test for Autocorrelation

Linear multiple regression models	Durbin-Watson Statistic
managerial support on implementing internal audit recommendations	2.75

Source: Field Data (2024)

4.4 Linear Multiple Regression Fitted Model

The multiple linear regression model to show the Influence of Managerial Support on implementing Internal Audit Recommendations in local government authorities in Dodoma City.

4.4.1 The Influence of Managerial Support on implementing Internal Audit Recommendations in Dodoma City

The results of a linear multiple regression analysis examined the influence of managerial support on implementing internal audit recommendations in Dodoma City. The regression model includes three predictor variables representing different aspects of managerial support: Allocation of Resources, Incorporation into the Strategic Plan, and Training and Capacity Building. The coefficients associated with each predictor variable provide insights into the strength and direction of their impact on the implementation of internal audit recommendations. For Allocation of Resources, the coefficient is 0.406 with a standard error of 0.112. The associated t-value of 15.240 is highly significant ($p < 0.001$), indicating that the allocation of resources significantly and positively influences the implementation of internal audit recommendations. This gives an implication of the fact that implementing internal audit recommendations helps strengthen the governance structure within Dodoma City Council.

Through addressing weaknesses identified through audits, the council improves its decision-making processes, risk management practices, and overall accountability. In the same trail internal audit recommendations often highlight areas of potential risk within the organization. Through allocating resources to address these recommendations, management proactively mitigate risks that could impact the council's operations, finances, or reputation. It can be said that many internal audit recommendations are related to ensuring compliance with laws, regulations, and internal policies. Failure to implement these recommendations could expose Dodoma City Council to legal liabilities or regulatory sanctions. Therefore, allocating resources to address these recommendations is essential for maintaining compliance.

The study findings are supported by Sunnari (2021) that internal audits uncover areas of risk, control deficiencies, and operational inefficiencies. Allocating resources to address these issues helps mitigate risks and strengthen the organization. Internal audits provide recommendations to streamline processes, reduce costs, and enhance productivity. Implementing these recommendations leads to greater operational efficiency and cost-effectiveness. Internal audits evaluate financial controls and identify areas for improvement. Allocating resources to implement recommendations strengthens financial controls and reduces the risk of fraud, errors, and mismanagement. Nevertheless, the study by Alzeban, & Sawan (2015) revealed that there is no significant relationship between allocation of the resources of management and implementation of internal audit recommendations in terms of IA characteristics and IA effectiveness.

The study findings are supported by **resource-based theory** that, managerial support plays a crucial role in allocating resources to implement internal audit recommendations. When managers are supportive, they are more likely to allocate necessary resources such as budget, time, and personnel to ensure that audit recommendations are effectively implemented. From a resource-based theory perspective, managerial support can be viewed as a critical resource that contributes to the successful implementation of internal audit recommendations.

Similarly, for Training and Capacity Building, the coefficient is 0.602 with a standard error of 0.016, and the associated t-value of 21.123 is highly significant ($p < 0.001$), indicating a significant positive impact. Incorporation into the Strategic Plan also shows a positive coefficient of 0.809, but with a slightly lower t-value of 1.350. However, the associated p-value of 0.009 is still significant at the 0.05 level, indicating that incorporation into the strategic plan has a statistically significant impact on the implementation of internal audit recommendations. The constant term in the model is 4.102 with a standard error of 0.433, and the associated t-value of 9.290 is highly significant ($p < 0.001$). This constant represents the expected value of the dependent variable (implementation of internal audit recommendations) when all predictor variables are zero.

This entails that managers are responsible for setting the tone at the top, establishing clear objectives, and ensuring that there is a commitment to continuous improvement within the organization. Through demonstrating a strong commitment to internal audit recommendations, managers create a culture that values accountability, transparency, and compliance with established policies and procedures. Also management is responsible for allocating resources effectively to support training and capacity building efforts aimed at implementing internal audit recommendations. This includes providing financial resources, personnel, time, and other necessary support to ensure that staff members receive the training they need to understand and implement audit recommendations successfully. According to Mahyoro and Kasoga (2021) training programs helped employees, especially those responsible for implementing audit recommendations, better understand the purpose, context, and requirements of the recommendations. Capacity building initiatives equipped employees with the necessary skills, techniques, and tools to implement the audit recommendations effectively. This included training on process improvements, data analysis, project management, or any other specific competencies required to address the identified issues. It was revealed that in Tanzanian local governments, staff training markedly impacts how well the internal audit function performs.

The R-squared value of 0.834 indicates that approximately 83.4% of the variability in the implementation of internal audit recommendations in Dodoma City can be explained by the predictor variables included in the model. This suggests a strong explanatory power of the model. Additionally, the F-test statistic of 174.442 is highly significant ($p < 0.001$), indicating that the overall regression model is statistically significant in predicting the implementation of internal audit recommendations. Overall, the results suggest that managerial support, particularly through the allocation of resources, training and capacity building, and incorporation into the strategic plan, significantly influences the implementation of internal audit recommendations in Dodoma City. These findings provide valuable insights for policymakers and stakeholders in enhancing the effectiveness of internal audit processes in the city.

Table 11 Linear multiple regression to show the influence of managerial support on implementing internal audit recommendations in Dodoma City.

Internal audit recommendations	Coef.	St.Err.	t-value	p-value	[95% Conf. Interval]
Allocation of resources	.406	0.112	15.240	.000	0.443 7.663
Incorporation into the strategic plan	.809	.044	1.350	.009	1.013 4.162
Training and capacity building	.602	.016	21.123	.000	1.044 4.046
Constant	4.102	.433	9.290	.000	4.438 16.112
Mean dependent var	3.818		SD dependent var		.496
R-squared	0.834		Number of obs		220
F-test	174.442		Prob > F		0.000

Source: Field Data (2024)

5.0 Conclusion

The study concludes that the associated t-value of 15.240 is highly significant ($p < 0.001$), indicating that the allocation of resources significantly and positively influences the implementation of internal audit recommendations. This gives an implication of the fact that implementing internal audit recommendations helps strengthen the governance structure within Dodoma City Council. While in training and capacity building, associated t-value of 21.123 is highly significant ($p < 0.001$), indicating a significant positive impact.

6.0 Recommendations

Based on the above findings and conclusion, the study recommends that the management of Dodoma City Council should continue supporting the audit committee in order to be active, independent, and well-resourced. Similarly, the committee should regularly review progress on implementing audit recommendations, provide guidance to management on addressing any challenges, and report directly to senior leadership. Also, Dodoma City and Council should continue developing clear protocols for following up on internal audit recommendations. They should assign responsibility for each recommendation, set deadlines for completion, monitor progress regularly, and provide feedback to auditors on actions taken.

7.0 Limitation for Further Studies

This study focused only on managerial support, audit committee influence, and follow-up mechanisms. It did not consider other factors like political interference or organizational culture, which might also affect the implementation of internal audit recommendations. The research was limited to Dodoma City Council. Results may not apply to other LGAs due to different local conditions and challenges. Future research should include more LGAs across Tanzania to see if the findings apply more broadly. Combining quantitative and qualitative methods could also provide a deeper understanding of the factors affecting implementation.

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Evaluating the role of employee health and safety programmes on organizational performance in Dodoma, Tanzania

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Abstract

This study aimed to assess the role of health and safety in enhancing an organization's optimal performance in Tanzania reflecting the experience of Dodoma City Council. The study drew on theories about employee behavior and organizational practices to see how they affect performance. This mixed-methods study assessed the role of health and safety training on performance through semi structure surveys and interviews. Interviews and offered qualitative insights into employee experience perspectives on OHS, while semi-structured surveys gathered quantitative data which were analyzed using descriptive and inferential statistics. This study found health and safety initiatives significantly boosted performance. Employees reported increased productivity, fewer accidents, and higher morale after comprehensive training ($p < 0.05$, OR = 4.310, 95% CI: 2.578-7.195%). Proper PPE use reduced incidents, but specific types require further evaluation ($p > 0.05$). This research reveals a potential reinforcing cycle between training, safety and performance. Develop integrated training on safety use, empowering employee participation. This fosters ownership and improves safety culture. Additionally, measuring the role of safety initiatives on well-being and performance strengthens leadership's commitment to OHS.

Keywords: *Health and Safety, Organizational Performance*

2. Introduction

Employee health and safety are vital aspects of workplace management as impact employee well-being, productivity, and overall organizational performance. Studies have consistently demonstrated that prioritizing employee health and safety contributes to enhanced worker performance and increases in productivity (Fonseca & Carvalho, 2019; Segbenya & Yeboah, 2022). Globally, only 10% to 20% of workers have access to occupational health programs, creating a significant gap that places a large portion of the workforce at risk for health and safety issues (Zamri, 2013; Hilbert, 2015). This lack of access underscores the necessity for expanding occupational health programs across all industries and sectors. According to Hilbert (2015), safeguarding workers through occupational health initiatives promotes a healthier and more productive workplace, yielding long-term benefits for both employees and organizations.

A report by the World Health Organization (WHO) in 2010 revealed a concerning trend: a decline in the availability of occupational health and safety services for workers. This situation leaves many workers vulnerable to work-related illnesses and accidents, further highlighting the importance of making such services accessible to all employees (WHO, 2010). In Tanzania,

the Occupational Safety and Health Authority (OSHA) reported 9,993 work-related accidents or diseases between 2020 and 2023, with compensation costs exceeding 9,080 million Tanzanian shillings (Chibololo, 2023; OSHA, 2020). These statistics emphasize the need for employers to prioritize workplace safety and health, not only to reduce accidents but also to manage the financial costs associated with workplace hazards.

Occupational health and safety, as defined by the International Labour Organization (ILO, 2003), involves the protection of workers from sickness, injury, and disease resulting from their work environment. In 2018, work-related accidents and diseases led to 2.34 million deaths globally, highlighting the need for robust workplace safety measures and health services (ILO, 2019). Prioritizing occupational health and safety not only saves lives but also reduces organizational costs related to workplace accidents and health issues. This relationship between worker well-being and productivity has been well-documented in various studies (Nwosu, 2019; Okwechuku, 2021), which suggest that organizations that focus on health and safety foster positive employee attitudes, leading to better performance and productivity.

In Tanzania, recent studies have explored the factors influencing occupational health and safety in organizations (Nkuba&Ntebe, 2023; Mrema et al., 2015; Simon, 2020). These studies show that while progress has been made, there is still much work to be done to improve the safety and health conditions of workers, particularly through proactive rather than reactive safety management approaches (Lema, 2006; Simon, 2020). The Tanzanian government has made efforts to address these challenges, including the establishment of OSHA in 1997, the implementation of the Occupational Health and Safety Policy of 2009, and the ratification of international conventions, such as the ILO Convention No. 170 (Simon, 2020). Despite these steps, ongoing efforts are necessary to ensure that occupational health and safety remain a priority for all stakeholders involved.

1.1.Statement of the Problem

There has been a notable rise in diseases, accidents, and injuries among workers across various sectors in Tanzania, despite the acknowledged importance of best practices (Simon, 2020; Mwita, 2020; Francetic, 2019; Mrema et al., 2015). Failing to implement proper health and safety measures can lead to workplace accidents, injuries, and long-term health problems, which negatively impact employees' job performance and overall well-being. Additionally, organizations may encounter legal and financial repercussions, damage to their reputation, and reduced employee morale if they do not effectively enforce comprehensive health and safety protocols. Mwita (2020) noted that employees and employers gain from prioritizing health and safety, as a healthy workforce boosts individual performance and overall organizational productivity. While the government is taking steps to improve health and safety standards, it is essential that organizations also take responsibility by enforcing the necessary regulations to prevent injuries, fatalities, and losses, ultimately enhancing their performance. This study, therefore, examined the role of health and safety measures in improving organizational performance in Tanzania.

1.3. Literature Review

1.3.1. Theoretical Review

1.3.1.1. Protection Motivation Theory

Protection Motivation Theory (PMT), developed by Roger (1983), provides a framework for understanding the use of protective measures, particularly in occupational health and safety. The theory suggests that individuals take precautions based on four key factors: the perceived seriousness of a potential threat, the likelihood of the threat occurring (vulnerability), the effectiveness of the suggested precautions, and their confidence in their ability to take protective actions (self-efficacy). PMT aims to differentiate between behaviours that lead to either harm or health. For instance, people can avoid injuries by following safety guidelines such as wearing seatbelts, avoiding driving while intoxicated, and using helmets when riding. The theory emphasizes the importance of personal motivation and external factors in encouraging health and safety behaviours. PMT is relevant to occupational health studies because it highlights how individuals' awareness and motivation play critical roles in promoting a health and safety culture. Through understanding these elements, institutions can design interventions that enhance health and safety awareness, ultimately improving workplace performance.

1.3.2. Empirical Literature Review

Empirical studies on health practices and worker performance have attracted global attention. Research indicates that effective occupational health and safety systems can significantly enhance worker productivity and reduce accidents. For instance, Shin *et al.* (2021) examined the state of occupational health and safety management in South Korea's construction industry. Their findings revealed a 67% reduction in accident rates and a 10.3% drop in fatal accidents in companies implementing safety systems. Similarly, Katsuroet *al.* (2010) in Zimbabwe found that poor occupational health practices in the food industry negatively impacted worker productivity, while Bilhah *et al.* (2018) in Kenya demonstrated that reducing workplace accidents improves organizational performance.

Moreover, Kaynaket *al.* (2016) in Turkey various linked the studies occupational health and safety (OHS) practices and organizational performance. Similarly, Haslam (2016) in the UK noted that proactive OHS management fosters employee attitudes, health outcomes, and safety climate. Equally, Iskanto (2021) in Malaysia, affirmed that the significant effect of OHS on performance, mediated by job satisfaction. Likewise, Pane *et al.* (2021) in Indonesia revealed similar results. However, further noted that both physical and non-physical environments are crucial. In Africa, studies like Amponsah-Tawiah& Mensah (2016) in Ghana highlighted that OHS positively impacts organizational commitment, while Ezekiel (2017) in Kenya found that OHS practices enhance job satisfaction among nurses.

In Tanzania, Kinyondo and Gervas (2022), Manongiet *al.* (2018) and Kessy (2022) associated the OHS management in and safety and security at workplace. Additionally, Songstadet *al.* (2017), Debeset *al.* (2016). Asha (2022), Mshangaet *al.* (2019) and Lindkvist (2019) show dissatisfaction of employees in various aspects. However, these studies underscored the critical

importance of effective OHS systems in improving employee performance and organizational outcomes necessitating its conduction.

1.4. Research Objectives

- i. To assess the role of Health and safety training programs in enhancing the organization's performance.
- ii. To examine the effects of the provision of personal protective equipment on worker's performance.

2. Materials and Methods

This study utilized a mixed-methods research (MMR) approach, integrating both quantitative and qualitative data collection and analysis to achieve a more comprehensive understanding of the research problem (Creswell, 2018). An exploratory research design facilitated the gathering and analysis of data in distinct phases, which is beneficial for deepening understanding and refining ideas (Bryman, 2019). Conducted in the Dodoma region, the focus was on the Dodoma City Council, with a total population of 160 staff members, including heads of departments and OSHA officers.

The study employed two sampling techniques—convenience sampling and simple random sampling—to select participants, resulting in a sample size of 113 calculated using Yamane's (1967) formula. Data collection incorporated both primary data (structured questionnaires and interviews) and secondary data, consistent with Creswell's (2014) recommendations for comprehensive insight gathering. Descriptive statistics summarized respondent characteristics, while qualitative data were subjected to thematic analysis, aligning with Kumar's (2019) methodologies for extracting meaningful insights. This rigorous approach is supported by various studies emphasizing the effectiveness of MMR in enhancing research outcomes (Saunders et al., 2019).

3.0. Results

3.1. Descriptive Statistics of Organization Performance Summary Statistics

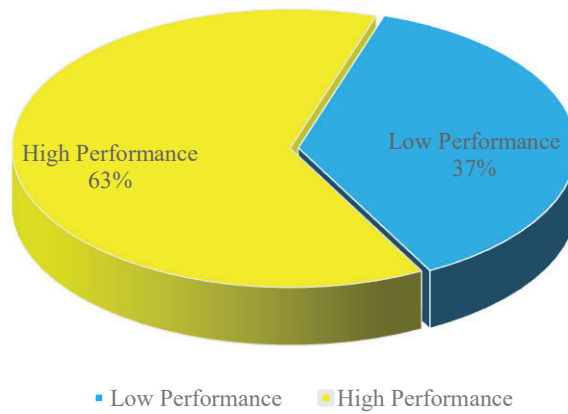
Table 1. Organization Performance Summary Statistics

Employee Motivation	Mean	Std. Dev.	Min	Max
Employee health wellbeing	3.97	0.578	1	5
Employee satisfaction	4.56	0.575	3	5
Completion of work on time	4.56	0.416	2	5
Completed quality work	4.59	0.472	3	5
Employee Engagement	4.48	0.435	4	5
Customer satisfaction	4.49	0.57	4	5
Overall	4.4423	0.502	1	5

Source: Field data (2024)

3.2. Organization Performance

Organization performance



3.3. Association between Health and safety training programs on the Enhancing of the organization's Performance

Table 2: Health and safety training programs vs. organization's performance

Variable		Low performance	High performance	Chi-square	P-Value
Health & safety training	No	38(65.30)	22(34.70)	52.45	0.011
	Yes	10(66.30)	43(33.70)		
Training on OHS	No	40(63.16)	23(36.84)	69.82	0.005
	Yes	38(75.56)	12(24.44)		

Source: Fied data (2024)

3.4. Health and Safety Training Programs on the Enhancing of the organization's performance

Multiple Logistic Regression Analysis

Table 4: Multiple Logistic Regression Analysis

Organization performance	Coef.	Odds Ratio	z	P>|z|
No (base outcome)				
<i>Health and safety training</i>				
Yes	1.011	4.310	13.71	0.000
No (Reference)				
<i>Training on OHS</i>				
Yes	1.032	3.132	16.14	0.000
No (Reference)				
Constant	-0.4454	.2716	-8118	0.000
Number of observations = 113 LR Chi2(2) =102.571				
Prob> Chi2 = 0.000 Pseudo R2 = 0.4761				

Source: Authors Compilation from STATA 17

3.5. Discussion of Results

Table 1 of descriptive statistics show that the overall mean is 4.442 and 0.507667. This implies that majority of respondents agreed that Health and safety training programs in enhancing organizational performance as 4.4. is close to the 5 which is close to the strong agrees response. The standard deviation was very small to indicate that there was little diversion from the real estimate of the mean.

Likewise, Pie Chat 1 presents the Organizational Performance into Low Performance' and High Performance where 37.17% were classified as 'Low Performance' and 62.83% as 'High Performance. Upon interviews predictors of employee motivation, participant opined that: -

‘.....We see a range of motivation levels across departments. While some employees are highly engaged, others seem less invested. We need to address

factors like compensation and growth opportunities to improve overall morale.....". (Participant 09, Department Head).

The participant 09 was supported by another participant who opined that: -

".....The long hours and demanding schedules are role of motivation and productivity. We need to explore flexible work arrangements to better support this workforce.....". (Interview/Participant 11/2024).

This narration implies that there is a need to explore flexible work arrangements to better support this workforce.

Table 3 shows that Chi-square value is 52.45, with a p-value of 0.011, indicating a statistically significant association. This suggests that the presence of health and safety training programs correlates positively with high organizational performance. Moreover, the Chi-square value is 69.82, with a p-value of 0.005 for Training on OHS, implying that a highly significant association. This underscores the importance of comprehensive training specifically focused on occupational health and safety.

The data in Table 4 reveals a statistically significant relationship between health and safety training programs and organizational performance at the 0.05 level. A z-value of 13.71 and a p-value of 0.000 confirm that these programs positively influence performance, with a coefficient of 1.032 indicating a positive effect. An odds ratio of 3.132 implies that organizations implementing Occupational Health and Safety (OHS) training are 3.132 times more likely to achieve high performance. These results are in harmony with those of Umugwaneza *et al.* (2019) found that workplace safety and health practices had a positive effect on the performance of employees. Equally, study findings concur with the Hassan *et al.* (2019) who noted that there is a positive effect on the performance of the organization.

Similarly, a z-value of 16.14 and a p-value of 0.000 further affirm the significant impact of OHS training on performance. The constant term and other statistical measures, such as the LR Chi2 and Pseudo R2, offer additional insights into the model's robustness. Overall, both general health and safety training and OHS-specific training are shown to significantly improve organizational performance, highlighting their critical role in fostering a productive and safe work environment, as supported by the data in Table 10.

4.0.Conclusion

Based on the study objectives, it can be concluded that health and safety training programs significantly contribute to enhancing organizational performance. Well-structured training programs improve employees' awareness and knowledge of workplace safety, leading to reduced accidents and enhanced productivity. Furthermore, the provision of personal protective equipment (PPE) directly impacts workers' performance by creating a safer work environment, thus boosting morale and efficiency. Organizations that invest in comprehensive health and safety initiatives, including both training and PPE, experience fewer workplace injuries, lower absenteeism, and improved overall operational efficiency. These measures foster a culture of safety, which strengthens employee commitment and reduces turnover rates. Ultimately, both health and safety training programs and the

provision of PPE are crucial for ensuring a productive, motivated, and secure workforce. This, in turn, enhances organizational success and long-term sustainability.

4.1.Recommendations

The government should implement well-rounded OHS training programs encompassing both general safety principles and specific job-related hazards. Regularly update these programs to reflect evolving safety standards and best practices. Foster a culture of continuous learning by providing ongoing training opportunities for employees. This ensures their knowledge and skills remain current and empowers them to adapt to changing safety requirements. The government should establish mechanisms to evaluate the effectiveness of OHS training programs. Regularly gather feedback and use it to refine training content and delivery methods for optimal outcomes.

4.2.Suggestion for Further Studies

For further studies based on the outlined objectives, the following suggestions are recommended: Future research could explore the long-term impact of health and safety training programs on employee retention and loyalty in different industries. Likewise, comparative studies could be conducted to assess how the effectiveness of health and safety training programs varies across different organizational sizes, from small enterprises to large corporations. Similarly, a deeper investigation into the psychological and behavioral changes in workers following health and safety training could provide more insights into its overall influence on performance. Equally, research on the role of technological advancements in improving the effectiveness of PPE could be beneficial in understanding modern solutions for worker safety.

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The Role of Women Participation in Grapes Farming and Income Generation in Tanzania. A Case of Mpunguzi and Mbabala Wards in Dodoma City

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Abstract

This study investigated the socio-economic impact of grape farming on income generation among women farmers in Mpunguzi and Mbabala Wards. Grapes were recognized for their high economic value and potential to enhance local economies and improve household incomes. The research used a mixed-methods approach, integrating both quantitative and qualitative data to enable a comprehensive analysis.

Quantitative data were collected from 154 grape farmers through structured questionnaires that assessed production practices, income levels, and profit margins. In addition, qualitative interviews were conducted with two leaders of grape growers, four women leaders in grape farming and four government extension officers to gather insights into the challenges faced by farmers and the support mechanisms available. Data were analyzed using SPSS version 22, revealing that grape farming significantly contributed to household incomes. The findings indicated that grape production played a vital role in household economics by increasing household income, with farmers producing 8-12 tons of grapes per acre each season and earning approximately 3.5 million Tanzanian shillings (\$1,521) per ton.

Despite these economic benefits, grape farmers faced several challenges, including limited access to modern agricultural techniques, inadequate market access and insufficient storage facilities. To improve production efficiency and profitability the study recommended the establishment of agricultural cooperatives to foster stronger relationships between farmers and agricultural experts and the development of affordable storage solutions through partnerships with governmental and private sectors.

These findings provided valuable insights for policymakers and stakeholders working to enhance support for and improve grape farming practices in Dodoma City.

Keywords: *grape production, economic impact, profit efficiency, mixed-methods research.*

1. Introduction

The fundamental role of empowering women economically through agriculture has long contributed to the socio-economic development of various countries including Tanzania. In recent years there was a growing interest in diversifying agricultural practices to enhance

income generation and empower marginalized groups, particularly women. According to Kalimangasi (2020) and Kulwijila (2021), the Tanzanian government actively worked toward sustainable and inclusive development by leveraging agriculture, and private sectors began revolutionizing the wine industry by encouraging more participation of women farmers in Dodoma, Tanzania. Makoye (2022) noted that women had started growing grapes, providing economic support to many families in the region. Their participation not only helped them enhance the economic status of their families but also created job opportunities for many others.

Grapes were a major fruit crop, with 67.5 million tons produced annually. They were widely cultivated and ranked as one of the largest economic fruits globally. Grapes could be consumed fresh or processed into products such as wine, juice, and raisins. Approximately 50% of grapes were used for winemaking, 36% were consumed fresh, 6% were used for juice, and 8% were dried to make raisins (Khan et al., 2020; Malue et al., 2017; Padol & Yadav, 2016). The cultivation of grapes was regarded as one of the most lucrative farming businesses worldwide, providing a vital income source for millions of individuals (Khan et al., 2020; Kalimangasi, 2020; Punjabi & Mukherjee, 2015). According to Khan et al. (2020), grapes and grape products were sold for cash income, making them an essential source of foreign exchange for many countries. In 2016, the global grape trade was valued at USD 1.5 billion, while the trade for grape products like wine stood at a staggering USD 32.6 billion (Punjabi & Mukherjee, 2015). Grape cultivation contributed about 36% of household income among grape-producing farmers in Dodoma City (Lwelamira et al., 2015; Kalimangasi, 2020). However, it was unclear how grape cultivation contributed to income generation specifically among female grape farmers in Dodoma City.

Grape cultivation was a significant contributor to Tanzania's economy, providing direct employment to around 20,000 households and indirectly benefiting the livelihoods of about 78,000 individuals, including farm-level service providers, traders, transporters, processors, and packagers involved in the value chain (Kalimangasi, 2020). Grape cultivation was especially important as the government aimed to transition the national economy from a low- to a middle-income status through industrialization. Grape farming provided raw materials for many processing industries, such as wine, juice, jam, and vinegar, and was positioned to support the country's contemporary national agenda (Lwelamira et al., 2015; Robbins, 2016; Makoye, 2022).

In Tanzania, grape farming was not fully utilized due to the significant initial investment required to establish a vineyard and supporting farm infrastructure. Grapes, like other agricultural crops in Tanzania, were largely dominated by smallholder farmers. The average farm size was 0.9 ha, and farms operated under irrigation or rainfed production technology (Kalimangasi, 2020; Lwelamira et al., 2015). According to Kalimangasi (2020), the Dodoma region had about 1,924 ha of grape cultivation, producing 10,000 tonnes of grapes annually. Lwelamira et al. (2015) and Kulwijila et al. (2018) claimed that the subsector faced challenges, including high input costs, unreliable markets, and low output. Consequently, reducing production costs and addressing declining farm gate prices could significantly impact farmers' net income, ultimately improving profitability and alleviating poverty for smallholder farmers.

1.1 Statement of the Problem

Agriculture has long played a pivotal role in empowering women economically, particularly in developing countries like Tanzania. It contributed significantly to socio-economic development and poverty reduction. In recent years, there was a growing interest in diversifying agricultural practices to enhance income generation and empower marginalized groups, particularly women. The Tanzanian government actively pursued sustainable and inclusive agricultural development, recognizing the transformative potential of women in the sector. According to Kalimangasi (2020) and Kulwijila (2021), the government along with private sectors, revolutionized the wine industry by encouraging women farmers' participation, especially in Dodoma, a region renowned for grape farming.

Grape farming, one of the most lucrative agricultural ventures globally, provided both direct and indirect income generation opportunities. Globally, 67.5 million tons of grapes were produced annually, with 50% used for winemaking and the rest consumed fresh, as juice, or dried into raisins (Khan et al., 2020; Malue et al., 2017). In Tanzania, women farmers increasingly took up grape farming, providing essential economic support to their families and creating job opportunities for many others (Makoye, 2022). Grape cultivation in Dodoma became a vital economic activity, contributing up to 36% of household income for grape farmers (Lwelamira et al., 2015). However, the socio-economic impact of grape farming, especially among women, remained understudied, making it essential to investigate how this sector could further enhance income generation for female farmers.

Despite the potential of grape farming, the sector faced significant challenges, including high input costs, limited access to markets, and low output. Most grape farms in Dodoma were smallholder operations, averaging 0.9 hectares (Kalimangasi, 2020). Furthermore, the Dodoma region produced 10,000 tons of grapes annually from 1,924 hectares, yet profitability remained low due to declining farm gate prices and high production costs (Kulwijila et al., 2018). As the Tanzanian government sought to industrialize and transition to a middle-income economy, the role of grape farming in providing raw materials for industries such as wine, juice, and vinegar became increasingly important (Robbins, 2016; Makoye, 2022).

2. Literature Review

A theory offered an explanation of a phenomenon, acting as an integrated set of principles that explained and predicted observable events or societal changes (Muthukrishna et al., 2019). This study drew on two key theories: the Sustainable Livelihood Approach (SLA) and Women's Empowerment Theory to guide its discussion on the impact of grape farming in Dodoma.

The Sustainable Livelihood Approach (SLA), first developed by Chambers and Conway (1991), was founded on the idea that livelihood encompassed people, their capabilities and their means of living, including food, income and assets. The theory emphasized that a livelihood was sustainable when it maintained or enhanced the local and global assets upon which it depended and had net beneficial effects on other livelihoods.

In the context of grape farming, the SLA framework highlighted the complex, interconnected factors that influenced income generation, particularly for women farmers in Dodoma's Mpunguzi and Mbabala Wards. Prior research pointed to the importance of interventions supporting women's control over their income and providing access to agricultural resources such as quality seeds, fertilizers, and infrastructure (McCoy, 2013; Masaiganah, 2010; Kinyondo, 2017). This theory was relevant to the study as it underscored the need to address the challenges women faced in grape farming and to provide support that improved their livelihoods.

Women's Empowerment Theory, as discussed by Kumar (2021), centered on recognizing and challenging gender disparities. The theory emphasized women's right to make strategic life decisions and highlighted four dimensions of empowerment: economic, political, knowledge, and psychological. Education, particularly non-formal education programs that challenged harmful gender norms, played a critical role in the knowledge dimension of empowerment (Dandona, 2015).

This theory was essential for understanding how women in grape farming could be empowered to enhance their economic, social and political standing. In the context of this study, it helped explore how empowering women in Dodoma could lead to greater economic opportunities in grape farming, increased decision-making power and improved household welfare.

Globally, grape farming's impact on women's economic empowerment went beyond income generation. A study in Europe found that grape farming not only allowed women to provide for their families but also enabled them to invest in education, healthcare and agricultural development, contributing to more stable communities (Pedneault & Provost, 2016). In the United Kingdom, grape farming created employment opportunities for women, supplied local industries with raw materials, and generated revenue for the government (Hasanaliyeva et al., 2020; Khan et al., 2020).

In Brazil, grape farming contributed over 35.6% of household income among smallholder farmers (Costa et al., 2019; Da-Silva et al., 2019). In Uzbekistan, grape farming accounted for 84.1% of income, highlighting its importance for household welfare and economic resilience (Mamasoliev et al., 2022). Similarly, studies in Cape Verde and South Africa underscored the role of grape farming in food security, income generation, and community development (Santana-Mayor et al., 2020; Piesse et al., 2018). In South Africa, the average household income from grape farming was around R47,600 (\$2,800 USD), demonstrating the enterprise's ability to sustain families economically.

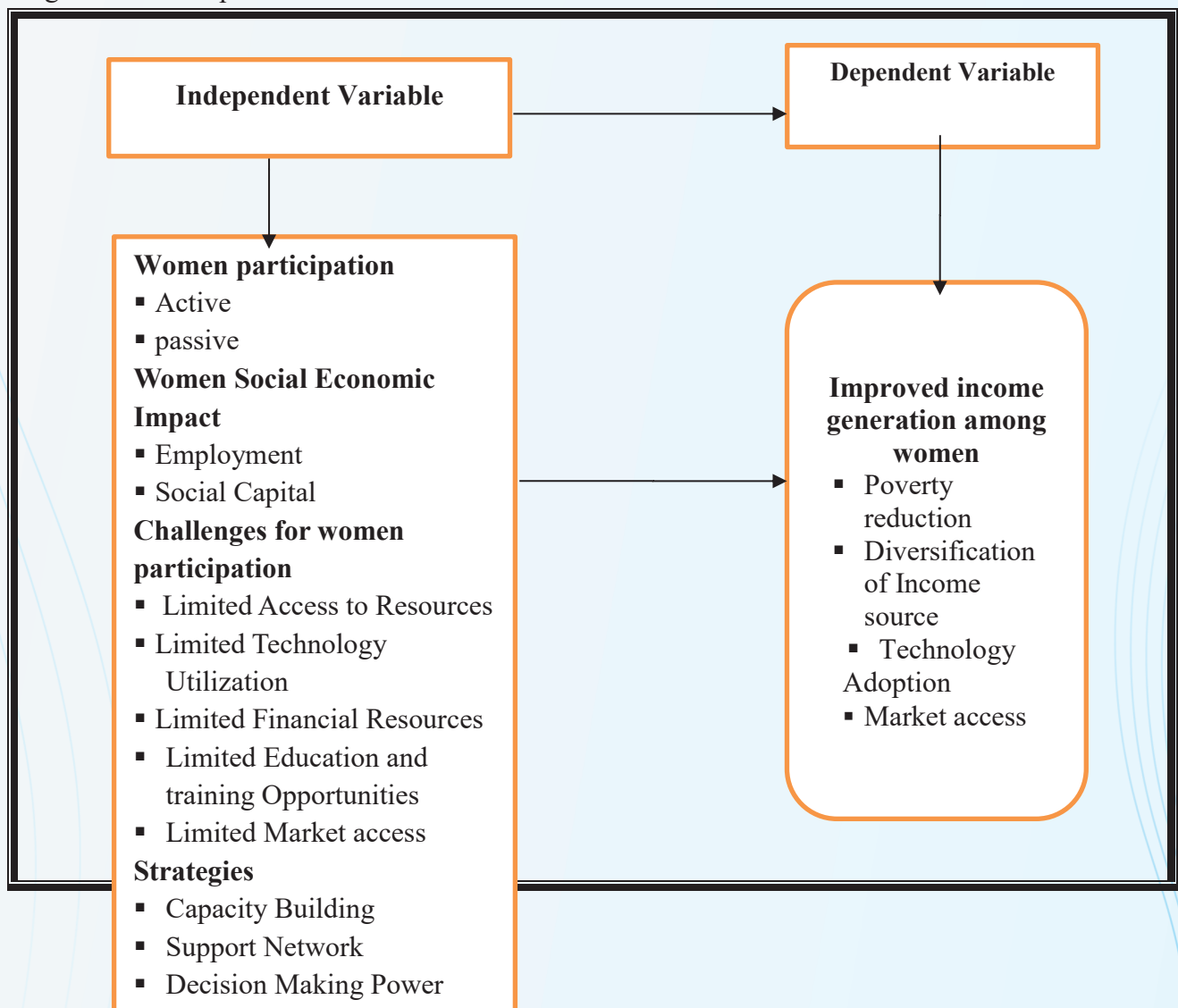
In Tanzania, grape farming, particularly in Mpunguzi and Mbabala Wards, presented a distinct opportunity to uplift the economic status of women by providing employment and income opportunities in rural areas where such opportunities were often scarce. The income from grape farming had a positive impact on local non-farm economies, as farmers tended to spend their income on local goods and services (Martinez, 2022). The economic benefits of grape farming

were also essential for food security and poverty reduction, further contributing to community resilience and sustainability.

2.1 Conceptual Framework

According to Kelley and Knowles (2016), a conceptual framework guided the research design and aided in data analysis. In this study, the independent variable was grape farming, which influenced the dependent variable, household income, measured through indicators like money and food security (O'Sullivan et al., 2016). The framework also included intermediate variables that encompassed constraints and strategies for improving grape farming. A direct relationship was illustrated between the independent and dependent variables, represented by a solid line, indicating that changes in grape farming directly impacted household income. This conceptual framework provided a structured approach to understanding the dynamics of grape farming and its effects on economic outcomes for households.

Figure 33: Conceptual framework



3. Methodology

3.1 Description of the Study Area

The study was conducted in Dodoma City, focusing on Mpunguzi and Mbabala Wards, which were known for their prominence in grape cultivation due to favorable climatic conditions. These wards contributed approximately 3% of the grape farmers in Dodoma, positioning them alongside other notable grape-producing areas such as Hombolo, Chamwino, and Bahi. The selection of Mpunguzi and Mbabala facilitated easy access to transportation and essential farming resources, allowing for comprehensive data collection on grape farming and its effects on women's income generation. Women's participation in grape farming became increasingly significant, contributing to household livelihoods and gender equity in income generation. This research aimed to illustrate the socio-economic impact of grape farming on women's lives within these wards.

3.2 Research Approach

A mixed-methods research approach was adopted, integrating both quantitative and qualitative techniques for a holistic understanding of the impact of grape farming on income generation. The quantitative aspect allowed for data collection from a larger sample, facilitating generalization, while the qualitative approach provided an in-depth exploration of individual experiences. This combination balanced the strengths of each method, enhancing the overall rigor of the research by integrating statistical backing with detailed narratives.

3.3 Research Design

The study utilized a cross-sectional research design, capturing a snapshot of the population at a specific moment. This design was effective for quickly assessing respondents' attitudes, opinions, and socio-economic conditions. By focusing on a single point in time, it identified patterns and correlations without prolonged observation, making it a cost-effective method for gathering descriptive data relevant to grape farming and income generation.

3.4 Population, Sampling, and Sample Size

3.4.1 Population

The study population included women grape farmers, leaders of grape farming groups, agricultural extension officers, and women leaders in grape farming, which allowed for a comprehensive analysis of the impact on various stakeholders.

3.4.2 Sampling Procedures

A combination of purposive, simple random, and cluster sampling techniques was employed:

1. **Purposive Sampling:** Used to select key informants such as leaders of grape farming groups and agricultural extension officers based on their expertise.
2. **Simple Random Sampling:** Applied to select a representative sample of women grape farmers.

3. **Cluster Sampling:** Used for smallholder farmers to ensure representation from different clusters within the study area.

3.4.3 Sample Size

Using the Yamane (1967) formula for an unknown population and a precision level of 0.05, the sample size was calculated as follows:

$$n = \frac{N}{1 + N \cdot e^2} \quad n = \frac{278}{1 + 278 \cdot 0.0025} \approx 164$$

For a population size of 278:

$$n \approx \frac{278}{1 + 278 \cdot 0.0025} \approx 164$$

Thus, the sample comprised 164 respondents, including:

- Leaders of grape growers: 2
- Women leaders in grape farming: 4
- Agricultural extension officers: 4
- Women grape farmers: 154
- Total: 164**

3.5 Data Collection Methods and Tools

3.5.1 Questionnaires

Structured questionnaires were administered to 154 women grape farmers, featuring both closed and open-ended questions to collect data on background information, farming practices, market access, and challenges faced (Moser & Kalton, 2017).

3.5.2 Interviews

Face-to-face interviews were conducted with leaders of grape farming groups, women leaders, and agricultural extension officers, allowing for flexible exploration of decision-making, market access, and training needs (Rutakumwa et al., 2020).

3.6 Data Analysis Plan

Quantitative data were analyzed using SPSS version 22, employing descriptive statistics for demographic information and inferential statistics, including Chi-square tests and logistic regression models, to assess relationships between grape farming and income generation. Qualitative data were coded and thematically analyzed to identify key themes and patterns.

3.7 Validity and Reliability

3.7.1 Reliability

To ensure reliability, the study utilized Cronbach's Alpha, with a threshold of 0.7 considered acceptable. The values for various variables ranged from 0.793 to 0.884, indicating strong internal consistency. A pilot study and pre-testing were also conducted (Mohammed, 2019; Mohajan, 2017).

3.7.2 Overall Reliability Statistics

The overall Cronbach's Alpha for the 45 items combined was 0.911, reflecting excellent internal consistency and suggesting that the measurement instruments effectively captured the constructs under study.

Findings & Discussion

4.2 Response Rate

Out of the initial 278 respondents, a final sample of 164 participants was surveyed, comprising 154 through questionnaires and 10 through interviews. This response rate of 59% reflected strong engagement with the survey, indicating effective data collection strategies. The use of both questionnaires and interviews contributed to a comprehensive dataset, enriching the study's findings.

4.3 Characteristics of the Respondents

This section explored the demographic characteristics of women grape farmers in Mpunguzi and Mbabala Wards, focusing on factors such as marital status, educational qualifications, age, and work experience to understand their economic empowerment through grape farming.

4.3.1 Marital Status

Table 3: Marital Status Distribution of Women Grape Farmers in Dodoma

Marital Status	Frequency	Percent
Single	51	31.10%
Married	103	62.80%
Widow/Widower	6	3.66%
Divorced	4	2.44%

The marital status of women grape farmers in Dodoma revealed significant insights into their socio-economic contexts. The majority of respondents (62.80%) were married, suggesting that family support networks likely played a crucial role in their agricultural activities. This high percentage indicated that married women might have benefited from collaborative family support but may also have faced challenges in balancing domestic responsibilities with farming.

Single women constituted 31.10% of the sample. These individuals may have enjoyed greater decision-making autonomy but could have faced challenges related to the lack of a support system typically provided by family. The relatively small percentages of widows/widowers (3.66%) and divorced women (2.44%) indicated that these groups faced unique challenges, such as potential issues with land tenure or limited social support.

Understanding these marital dynamics was crucial for designing targeted interventions. For instance, programs could have involved spouses in agricultural training to support married women or offered support systems and resources tailored to single, widowed or divorced women to address their specific needs.

4.3.2 Education Qualification

Table 4: Educational Qualifications of Women Grape Farmers in Dodoma

Educational Level	Frequency	Percent
Primary	64	39.02%
Secondary School	62	37.80%
Certificate/Diploma	30	18.29%
Bachelor's Degree	8	4.88%

Respondents exhibited varied educational backgrounds, with 39.02% having primary education, 37.80% secondary education, 18.29% holding certificates or diplomas, and 4.88% possessing bachelor's degrees. This educational diversity suggested a strong foundation in practical farming knowledge, with fewer advanced qualifications. Tailored training programs could have improved agricultural practices and business management, leveraging the specialized skills of those with higher education while addressing challenges faced by those with basic education.

Table 5: Age Distribution of Women Grape Farmers:

Age Group (Years)	Frequency	Percent
25-31	39	36.45%
32-38	39	36.45%
39-45	26	24.30%

Age Group (Years) Frequency Percent

46-52	3	2.80%
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The majority of respondents were between the ages of 25-31 (36.45%) and 32-38 (36.45%), with fewer in the 39-45 (24.30%) and 46-52 (2.80%) age groups. This youthful demographic indicated a potential for innovation and adoption of new practices. However, it also highlighted the need for targeted strategies to support different age groups; younger women may have required capital and land access support, while older women might have benefited from mentorship and flexibility in farming practices.

4.3.4 Work Experience

Table 6: Work Experience of Women Grape Farmers in Dodoma

Work Experience (Years) Frequency Percent

0-7	35	21.34%
8-14	80	48.78%
15-21	40	24.39%
22 Above	9	5.49%

A substantial proportion of respondents had 8-14 years (48.78%) or 15-21 years (24.39%) of experience in grape farming, indicating a strong foundation in the field. Those with over 22 years of experience (5.49%) represented the most seasoned farmers. This range of experience suggested a potential for mentorship and advanced training programs. Leveraging the expertise of more experienced farmers could enhance the skills and productivity of less experienced farmers, fostering overall sector growth and improved economic outcomes.

4.4 Discussion

The analysis of the respondent data from women grape farmers in Mpunguzi and Mbabala Wards, Dodoma City, reveals important insights into their socio-economic characteristics and the implications for their participation in grape farming.

4.4.1 Marital Status:

The majority of respondents were married (62.80%), which suggested that family support played a significant role in their agricultural activities. This demographic likely benefited from interventions designed to support family-based decision-making, including training programs that involved spouses and addressed challenges related to balancing household duties with farming responsibilities. Single respondents (31.10%) had greater autonomy but faced challenges related to support networks, while the

smaller groups of widows/widowers (3.66%) and divorced individuals (2.44%) encountered specific issues related to land tenure and social support. Tailoring support programs to address these unique needs could have enhanced their participation and productivity.

4.4.2 Educational Qualifications:

The educational background of the respondents is diverse, with the majority having attained primary education were (39.02%) and secondary education were (37.80%). This indicates a reliance on practical knowledge gained through experience rather than formal higher education. The presence of 18.29% with Certificates or Diplomas and 4.88% with Bachelor's degrees suggests that specialized training and advanced knowledge are available but less common. This educational diversity highlights the need for targeted training programs that cater to different educational levels. For those with primary and secondary education, basic literacy and numeracy training alongside agricultural skills development could significantly improve their farming practices. On the other hand, individuals with higher educational qualifications can contribute advanced insights and innovations, driving improvements in farming techniques and practices.

4.4.3 Age Distribution:

The age distribution showed a predominance of younger women, with 72.90% of respondents aged between 25 and 38 years. This youthful demographic was advantageous for adopting new technologies and innovative practices, as younger individuals were generally more open to change and development. However, this age distribution also suggested potential barriers for older women, particularly those in the 46-52 age group, who may have faced different challenges such as physical limitations or greater household responsibilities. Designing age-specific strategies, such as microfinance options for younger women and mentorship programs that leveraged the experience of older women, was crucial for fostering an inclusive and supportive farming environment..

4.4.4 Work Experience:

The data on work experience revealed a substantial presence of women with 8-14 years of experience (48.78%), indicating a well-established foundation in grape farming. This group provided valuable mentorship and advanced insights. Those with 15-21 years of experience (24.39%) further contributed to the sector with their extensive knowledge. The smaller group with over 22 years of experience (5.49%) represented seasoned experts who could lead and guide others. Tailored support programs needed to address

the varying needs of these different experience levels. For newcomers (0-7 years), additional training and resources were essential to build their expertise. For more experienced farmers, advanced technology and leadership opportunities could enhance their productivity and influence in the sector.

In conclusion, the demographic and professional characteristics of women grape farmers in Dodoma City highlighted the importance of designing targeted interventions to support their diverse needs. By addressing challenges related to marital status, educational qualifications, age, and work experience, stakeholders could enhance their participation and productivity in grape farming. By leveraging the strengths of each group and addressing their challenges, it became possible to promote sustainable economic development and improve the socio-economic outcomes for women farmers in the region.

4.4.5 The social economic impact of women participation in grapes farming and income generation in Tanzania.

The social economic impact of grape farming women income generation in Mpunguzi and Mbabala were examined. In addressing this objective a descriptive analysis were applied to presents generation statistics for women grape farmers, detailing the mean, standard deviation, minimum and maximum values for various components contributing to income generation, as shown in Table 7. The mean income from grape farming is substantial, indicating a positive financial impact on the women farmers. The standard deviation reflects the variability in income levels, highlighting differences in productivity and market access. The minimum income value shows that some farmers are at the lower end of the income spectrum, while the maximum value indicates the potential for high earnings among successful farmers. These statistics underscore the importance of grape farming as a significant source of income for women in Dodoma.

Table 7: Income generation summary statistics

	Income generation	Mean	Std. Dev.	Min	Max	
	Yield per Acre	4.11	0.32	2	5	
	Quality grading	4.211	.402	2	5	
	Market prices	4.191	.497	2	5	
	Production cost	3.91807	.395	1	4	
4.4.6	Marketing strategies	4.587	.495	2	5	In
	Overall	4.219	.412	2.44	4.75	

additional the chi-square was tested to measure the Association between social economic impacts of grape farming on income generations. The association between the socio-economic impacts of grape farming and income generation among women was categorized into low income and high income. The analysis show that Chi-square values and P-values to determine the significance of these associations was at the 0.05 level of significance as indicated in table 8

Table 8: Association between Social Economic Impacts of Grape Farming on Income Generations

Variabl e	Low income	High income	Chi- square	P- Valu e
<i>Employment</i>			31.221 2	0.00
No	36(61.02)	23(38.98)		
Yes	19(18.1)	86(81.9)		
<i>Social capital</i>			23.232 9	0.00
No	31(59.62)	21(40.38)		
Yes	24(21.43)	88(78.57)		

The analysis of the association between the socio-economic impact of grape farming and income generation revealed significant findings. There was a clear relationship between employment resulting from grape farming and income generation. Women

employed in grape farming were significantly more likely to be in the high-income group (81.9%) compared to those who were not employed (38.98%). Conversely, a majority of the low-income group (61.02%) were not employed in grape farming. The Chi-square value of 31.2212, with a P-value of 0.00, indicated a statistically significant difference at the 0.05 level, demonstrating a strong association between employment in grape farming and income generation.

Additionally, the analysis showed a significant association between social capital and income generation. Women with higher social capital predominantly fell into the high-income group (78.57%), while those with lower social capital were mostly in the low-income group (59.62%). The Chi-square value of 23.2329, with a P-value of 0.00, further confirmed a statistically significant difference at the 0.05 level.

These findings indicated that both employment in grape farming and social capital had significant positive associations with higher income generation among women grape farmers. Women who were employed in grape farming or possessed higher social capital were significantly more likely to generate higher incomes. The Chi-square tests for both variables showed highly significant associations with income levels, as reflected by their P-values of 0.00, which were well below the 0.05 threshold for significance. This suggests that enhancing employment opportunities and building social capital are crucial for improving income generation among these women.

Furthermore, the study utilized the Hosmer and Lemeshow model coefficient test to examine the association of the socio-economic impact of grape farming on income generation, as shown in Table 9.

Table 9: Omnibus tests of model coefficients

Logistic regression model	Chi square	Degree of freedom	significance
social economic impact on grape farming on income generations	9.2416	2	0.002

The table includes Chi-square values, degrees of freedom, and significance levels for each model. Interpretation of Omnibus tests of model coefficients socio-economic impact on grape farming on income generation with a chi-square of 9.2416, Degree of freedom: 2, significance (p-value): 0.002. The analysis of chi-square value of 9.2416 with 2 degrees of freedom of p-value of 0.002 indicates that the logistic regression model

assessing the socio-economic impact of grape farming on income generation is statistically significant at the 0.05 level. This result suggests that the variables included in the model significantly contribute to predicting income generation among women grape farmers. The low P-value (0.002) confirms that the relationship observed is unlikely to be due to chance, implying a strong association between socio-economic factors and income levels.

Strategies Plan in Women Income Generation Chi-square was 7.1419 Degree of freedom was measured 3 Significance (P-Value): 0.004) and the findings indicates that the logistic regression model evaluating the impact of strategies on women's income generation is statistically significant at the 0.05 level.

This result suggests that the strategic plans included in the model significantly contribute to predicting income generation among women. The P-value of 0.004 confirms that the observed associations are statistically significant and unlikely to be due to random variation, highlighting the importance of strategic planning in influencing income levels. The tests of omnibus model of coefficients demonstrate that both logistic regressions models—one assessing the socio-economic impact on grape farming and the other evaluating strategic plans in women's income generation—are statistically significant at the 0.05 level. The Chi-square values and associated P-values indicate that the variables in each model significantly contribute to predicting income generation among women grape farmers. These findings underscore the importance of socio-economic factors and strategic planning in enhancing women's income from grape farming.

However the results of a Hosmer-Lemeshow goodness-of-fit test for logistic regression models related to the social and economic impact of grape farming on income generation. This test assesses how well a logistic regression model fits the observed data. It compares observed and expected outcomes across categories of deciles of predicted probabilities. Lower Chi-square values and higher p-values indicate a better fit. Results at 0.05 Significance Level: The study considered a p-value greater than 0.05 to suggest the model has an acceptable with social economic impact on grape farming income generations Chi-square of 1.217 (relatively low), Degrees of freedom and (df): 4 p-value 0.301 (>0.05)

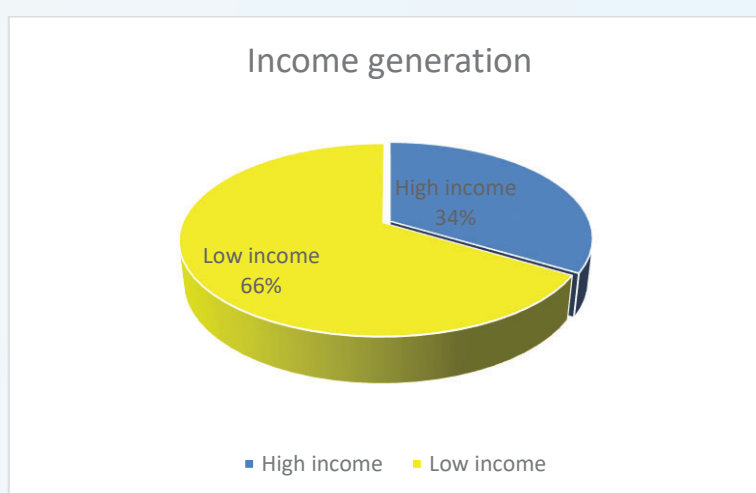
Table 10: Hosmer and Lemashow Model Test

Logistic regression model	Chi square	Degree of freedom	significance
social economic impact on grape farming income generations	1.217	4	0.301

4.4.7 Income Generation Categories of Women Grape Farming

The study further assessed the income generation in category of women grape farming. The study found that majority of women earn low income as they are involved in grape farming activities as indicated in figure 3.

Figure 34: Income Generation



The analysis indicates that 33.54% (55 individuals) are classified as having high income from their grape farming activities. This suggests that approximately one-third of the women grape farmers generate a high level of income from their farming operations. Conversely, the majority of the respondents, 66.46% (109 individuals), are classified as having low income from their grape farming activities. This indicates that a significant portion, about two-thirds, of the women grape farmers is earning lower incomes. The data indicates a disparity in income generation among the women grape farmers in Dodoma. While a notable 33.54% manage to generate high income, a larger segment of 66.46% falls into the low-income category. This highlights a potential area for intervention and support to improve income levels for the majority of these farmers. The high percentage of low-income farmers suggests the need for strategies to enhance productivity, access to better markets, or more efficient farming practices to elevate their income levels. Empirical studies support the observed income disparity among women farmers. This finding concurs with Oseni et al. (2015) who found that women in agriculture often face significant barriers to achieving high income, including limited access to resources, education, and markets. Similarly, Goldstein, and Rosas (2013) reported that gender-specific constraints significantly impact women farmers'

productivity and income levels. Furthermore the Qualitative data provided additional insights into income generation among women grape farmers that women are earning the little because they have no strong capital to invest in grape farming.

During interview with Extension officers at Mpunguzi ward he said that,

"The income we get from grape farming is crucial, but it's not enough to cover all our household expenses. We need better access to markets and supports to improve our yields."

Also Leader of grape growers on state of women grape farming has different opinions,

"Those of us who earn more have been able to invest in better farming techniques and marketing strategies, which makes a big difference."

However similar statement of a leader of Women grape growers mentioned“
The necessity of better access to markets and support to improve yields, which is a recurring theme in agricultural development”.

5.0 Conclusions

The study aimed to evaluate how grape farming influenced income generation among women in Mpunguzi and Mbabala Wards, Dodoma City. The findings revealed a clear positive impact of grape farming on women's income. The analysis showed that women involved in grape farming generally experienced higher income levels compared to those who did not participate in grape farming. This correlation underscored the significant role that grape farming could play in enhancing the economic status of women in the region.

Quantitative analyses, including Chi-square tests and logistic regression models, confirmed that several factors were associated with higher income generation. Specifically, the data highlighted those women with more extensive experience in grape farming and higher educational qualifications tended to have better income outcomes. This suggested that both experience and education were crucial in maximizing the economic benefits of grape farming. The positive relationship between farming experience and income indicated that as women gained more experience, their income potential increased, likely due to improved farming practices and productivity.

However, the study also identified several challenges that affected the income potential of women grape farmers. These included high input costs, limited market access, and inadequate training and support. The results indicated that despite the overall positive impact on income, these challenges could hinder the full realization of grape farming's economic benefits. Addressing these issues was critical for ensuring that all women farmers could benefit equally from grape farming.

Overall, the study demonstrated that grape farming was a promising avenue for improving women's income in Mpunguzi and Mbabala Wards. By focusing on the factors that enhanced income generation, such as experience and education, and addressing the challenges identified, there was potential for significant economic improvement for women in these communities.

5.1 Recommendations

Based on the findings, several recommendations are proposed to enhance the income-generating potential of grape farming for women in Mpunguzi and Mbabala Wards. Firstly, addressing the high input costs associated with grape farming is crucial. Implementing subsidies or providing access to affordable inputs can help reduce financial barriers and increase profitability for women farmers.

Improving market access is another key recommendation. Establishing better market linkages and providing training on market strategies can help women farmers secure better prices for their produce and expand their market reach. Additionally, creating platforms for women to connect with potential buyers can facilitate better sales opportunities.

Training and support programs should be expanded to cover various aspects of grape farming, including advanced farming techniques, pest management, and business skills. Tailored training programs that cater to different educational backgrounds and experience levels can empower women with the knowledge needed to enhance their farming practices and income potential.

Supporting women with limited resources through microfinance options can provide the necessary capital for purchasing inputs and investing in farming improvements. Additionally, fostering partnerships with local and international organizations can help secure funding and resources for grape farming projects.

Lastly, policymakers should focus on creating an enabling environment for women grape farmers. This includes developing policies that address land tenure issues, promote gender equality, and provide incentives for women's participation in agriculture. By addressing these areas, the economic empowerment of women through grape farming can be significantly enhanced, leading to sustainable growth and development in the region.

5.2 Limitations to the Study and Areas for Further Research

This study relied primarily on primary data collected through questionnaires and interviews with women grape farmers in Mpunguzi and Mbabala Wards, while limited use was made of secondary data. The inclusion of more secondary data, such

as agricultural reports or market studies, could have enhanced the quality and reliability of the findings through data triangulation. Additionally, the study focused on the social and economic impacts of grape farming on income generation and women's empowerment but did not explore specific grape production volumes and market trends due to the lack of consistent records and accessible data.

Future research could address these limitations by incorporating a more balanced approach between primary and secondary data sources, which may provide a more comprehensive understanding of the determinants affecting women's market access in grape farming. Furthermore, similar studies could be conducted in other grape-producing regions beyond Dodoma City, to compare the findings and gain a broader perspective on the impact of grape farming on women's livelihoods across Tanzania. Expanding the geographical scope could also help identify region-specific challenges and opportunities for enhancing women's economic empowerment through grape farming.

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The Relationship between Working Environment and Public Service Delivery in Dodoma City Council, Tanzania

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Abstract

This study conducted in Dodoma City Council investigates the impact of the working environment—comprising physical environment, social environment, and organizational culture—on public service delivery. Data collection involved a questionnaire survey distributed among 93 participants across various departments. Variables were measured using a Five-Point Likert Scale, and multiple linear regression analysis was used to analyze the data, exploring how variations in the working environment predict changes in public service delivery outcomes. Prior to the main study, a pilot test ensured instrument validity, and reliability was assessed using Cronbach's Alpha. Ethical considerations included informed consent, confidentiality measures, and transparent reporting. The model summary findings indicated a coefficient of determination (R-squared) of 0.279, indicating that approximately 27.9% of the variance in public service delivery can be explained by the combined influence of the predictors. The standardized coefficients revealed that organizational culture (Beta = 0.408) had the strongest positive impact on service delivery, followed by the social environment (Beta = 0.305) and physical environment (Beta = 0.211). These findings underscore the critical roles played by organizational culture, social interactions, and physical workspace conditions in shaping effective public service delivery in Dodoma City Council.

Keywords: *Working Environment, Organizational Culture, Public Service Delivery*

1.0 Introduction

The quality of public service delivery is a critical determinant of a nation's development and the well-being of its citizens (Andrews et al., 2023). While efficient and effective public services are crucial globally, the issue is particularly salient in developing countries like Tanzania, where they can significantly impact poverty reduction and overall quality of life (World Bank, 2021).

Recent studies have increasingly recognized the influence of the working environment on employee performance and, consequently, on public service delivery (Kim, 2022; OECD, 2020). A conducive working environment encompasses various factors, including physical amenities, social interactions, and organizational culture. These factors collectively shape

employee satisfaction, motivation, and productivity, ultimately influencing their ability to deliver quality public services (Grissom et al., 2021).

For instance, a 2021 World Bank report highlighted the positive correlation between well-equipped offices, comfortable temperatures, and improved service delivery in several African countries. The report further underscored the importance of a positive social environment characterized by teamwork, collaboration, and supportive leadership. Similarly, a 2022 study published in the *Public Administration Review* found that a strong organizational culture fostering innovation and accountability significantly enhanced the responsiveness and efficiency of public services in European nations.

In the African context, the impact of the working environment on public service delivery is particularly relevant due to the challenges faced by many public sector organizations (Adu-Gyamfi et al., 2023). These challenges include limited resources, inadequate infrastructure, and socio-cultural factors that can influence employee behavior and attitudes.

A 2023 study conducted by the African Development Bank revealed that many public sector employees in Africa work in suboptimal physical environments, lacking basic amenities such as clean water, proper sanitation, and adequate lighting. These conditions can negatively affect employee morale, health, and overall job satisfaction. The study also highlighted the prevalence of hierarchical organizational structures in many African public sector organizations, which can stifle creativity, innovation, and employee empowerment.

In Tanzania, the issue of poor public service delivery has been a longstanding concern (Mdee et al., 2022). Citizens often complain about delays, inefficiencies, and a lack of responsiveness from public officials (Ngowi, 2021). While various efforts have been made to address these issues, the focus has primarily been on structural reforms, technological upgrades, and capacity-building initiatives (Tanzania Public Service Commission, 2021). The role of the working environment in shaping public service delivery has largely been overlooked.

Dodoma City Council, as the administrative center of Tanzania, plays a crucial role in delivering public services to the city's growing population. However, the council has faced numerous challenges in recent years, including a lack of resources, inadequate infrastructure, and allegations of corruption (Mwakyembe, 2020). These challenges have undoubtedly contributed to the perceived poor quality of public service delivery in the city.

While some efforts have been made to improve the working environment at Dodoma City Council, such as the construction of a new office building and the provision of basic amenities, much remains to be done. A 2022 survey conducted by the council's human resources department revealed that employees were generally dissatisfied with their working conditions. The survey identified issues such as inadequate office space, poor ventilation, and a lack of communication and collaboration among staff members.

Despite the growing body of evidence highlighting the importance of the working environment for public service delivery (e.g., Kim, 2022; OECD, 2020), there is a paucity of research specifically examining this relationship in the Tanzanian context, particularly at the local government level. The available studies have primarily focused on national-level institutions or specific sectors, such as health and education (e.g., Komba et al., 2021).

This study aims to fill this research gap by investigating the relationship between the working environment and public service delivery in Dodoma City Council. By examining the specific factors that contribute to a conducive working environment, such as physical amenities, social interactions, and organizational culture, the study will provide valuable insights into how these factors influence employee performance and, ultimately, the quality of services delivered to citizens.

2.0 Literature Review

2.1 Empirical Literature Review

The relationship between the working environment and public service delivery has gained significant attention in recent years, with a growing body of research highlighting its importance. This literature review explores the studies to understand how different dimensions of the working environment, including physical, social, and organizational culture, influence employee performance and service quality in the public sector.

The physical environment of the workplace, encompassing factors like office layout, lighting, temperature, and noise levels, has been shown to significantly impact employee well-being, satisfaction, and productivity (Kim, 2022). A study by Adu-Gyamfi et al. (2023) found that public sector employees in Africa who worked in well-designed and comfortable offices reported higher levels of job satisfaction and were more likely to perceive their work as meaningful. Similarly, Grissom et al. (2021) demonstrated that access to natural light and greenery in the workplace can improve cognitive function and reduce stress, leading to enhanced performance among public servants.

However, the impact of the physical environment on service delivery can vary across different contexts. For instance, a study by Mwakyembe (2020) found that while comfortable temperatures were associated with improved service quality in some Tanzanian government offices, this relationship was not observed in all cases. This suggests that the influence of the physical environment may be moderated by other factors, such as job characteristics and individual differences.

Moreover, the social environment, including relationships with colleagues and supervisors, communication patterns, and teamwork, plays a crucial role in shaping employee experiences and behaviors in the public sector. A supportive and collaborative social environment can foster trust, cooperation, and knowledge sharing, ultimately contributing to improved service delivery (OECD, 2020). A study by Mdee et al. (2022) found that public

servants in Tanzania who reported positive relationships with their colleagues and supervisors were more likely to be engaged in their work and provide high-quality services.

Furthermore, the social environment can also influence employee perceptions of organizational justice and fairness, which can further impact their motivation and performance. A study by Ngowi (2021) revealed that when public servants in Tanzania felt that they were treated fairly and equitably by their colleagues and supervisors, they were more likely to be committed to their organization and provide better services to citizens.

Likewise, Organizational culture, encompassing the shared values, beliefs, and norms that guide employee behavior, is a critical factor in shaping public service delivery. A strong organizational culture that emphasizes customer orientation, accountability, and continuous improvement can create a positive work environment and drive employee performance (Andrews et al., 2023). A study by Komba et al. (2021) found that public sector organizations in Tanzania with a strong culture of service excellence and innovation were more likely to achieve their performance goals and deliver high-quality services.

However, creating and sustaining a positive organizational culture can be challenging, particularly in the public sector, where bureaucratic structures and political pressures can sometimes undermine efforts to promote change. A study by Tanzania Public Service Commission (2021) highlighted the need for strong leadership and effective communication to ensure that cultural change initiatives are successful in the Tanzanian public sector.

While the existing literature provides valuable insights into the relationship between the working environment and public service delivery, there are still several research gaps that need to be addressed. First, most studies have focused on individual dimensions of the working environment (e.g., physical, social, or organizational culture) in isolation, without considering their combined effects. Future research should adopt a more holistic approach to examine how these different dimensions interact and influence employee performance and service quality.

Second, there is a need for more longitudinal studies that track changes in the working environment over time and assess their long-term impact on public service delivery. Such studies can provide valuable insights into the sustainability of interventions aimed at improving the work environment and their potential to drive lasting improvements in service quality.

Finally, most studies have been conducted in developed countries, with limited research on the working environment in developing country contexts, such as Tanzania. Future research should focus on understanding the unique challenges and opportunities related to improving the work environment in developing countries, taking into account the specific socio-cultural and economic factors that shape public sector organizations in these contexts.

2.2 Theoretical Literature Review

For this study on the impact of the working environment on public service delivery in Dodoma City Council, the **Organizational Climate Theory** is a suitable theoretical framework. This theory, which falls under the broader category of organizational behavior theories, examines

how various environmental factors within an organization, such as the physical environment, social environment, and organizational culture, influence employees' behavior and performance, ultimately affecting service delivery.

The concept of organizational climate was first introduced by Kurt Lewin in the 1930s and later expanded by other researchers like Litwin and Stringer in the 1960s. The theory has evolved over the decades, with more recent contributions focusing on the specific impacts of climate on employee attitudes and performance. In 1968, Litwin and Stringer formalized the theory by linking organizational climate to employee motivation and performance (Litwin & Stringer, 1968). The theory suggests that the overall atmosphere in an organization significantly affects how employees feel and perform. In recent years, scholars have further developed the theory to incorporate various elements of the working environment, including physical and social factors, thereby making it relevant for contemporary organizational studies (Shanker et al., 2021).

Organizational Climate Theory rests on several key assumptions. First, it assumes that the organizational environment is a significant determinant of employee behavior and attitudes. Factors like the physical setup of the workspace, the nature of interpersonal relationships, and the prevailing organizational culture directly influence how employees feel about their work and their performance (Ostroff et al., 2020). Second, the theory posits that a positive working environment leads to higher job satisfaction, motivation, and productivity. Conversely, a negative environment can lead to dissatisfaction, low morale, and reduced efficiency, which affects overall service delivery (Parker et al., 2020). The theory also assumes that the perceptions of employees about their work environment are shaped by the tangible and intangible aspects of the organizational climate, such as leadership style, communication patterns, and employee recognition programs (Schneider et al., 2020).

One of the major strengths of Organizational Climate Theory is its holistic approach, which considers multiple dimensions of the working environment. This comprehensive perspective enables organizations to understand and address a range of factors that influence employee performance and service delivery (Kuenzi & Schminke, 2020). Additionally, the theory's emphasis on employee perceptions makes it a valuable tool for assessing organizational effectiveness. By focusing on how employees perceive their environment, organizations can identify areas for improvement and implement changes that enhance employee well-being and productivity (Newman et al., 2022). The theory is also adaptable, allowing it to be applied across different types of organizations and sectors, including public service, which makes it particularly relevant for the study of service delivery in Dodoma City Council.

Despite its strengths, Organizational Climate Theory has certain limitations. One of the main weaknesses is its reliance on employee perceptions, which can be subjective and influenced by personal biases (Schneider et al., 2020). This subjectivity can lead to inconsistencies in measuring organizational climate, making it difficult to establish a direct causal relationship between climate factors and employee performance. Additionally, the theory may not adequately account for external factors, such as economic conditions or technological changes, that can also impact organizational climate and performance (Parker et al., 2020). These

limitations suggest that while Organizational Climate Theory is useful for understanding internal dynamics, it should be used in conjunction with other frameworks to capture a more comprehensive picture of organizational performance.

Organizational Climate Theory is highly relevant to this study on the impact of the working environment on public service delivery in Dodoma City Council. By examining factors such as the physical environment, social environment, and organizational culture, the theory provides a structured way to analyze how these elements influence employee behavior and service outcomes. Understanding the organizational climate can help identify specific areas where improvements can be made to enhance service delivery, such as better communication channels, improved physical workspaces, and a supportive organizational culture. Moreover, using this theory allows the study to draw connections between the working environment and public service efficiency, offering valuable insights for policy makers and administrators in Dodoma City Council (Ostroff et al., 2020). The findings from this study can contribute to developing strategies that foster a positive organizational climate, leading to better public service delivery and overall organizational performance.

3.0 Methodology

3.1 Research Design and Setting

This study utilized a cross-sectional research design, which allowed for the collection of data at a single point in time, providing a snapshot of the current state of the working environment and its impact on public service delivery within Dodoma City Council. By focusing on a specific moment, this approach efficiently gathered relevant information regarding how various factors, such as the physical environment, social environment, and organizational culture, influence the quality of public services provided. The cross-sectional design enabled the study to capture a wide range of data from multiple respondents simultaneously, offering a comprehensive understanding of the existing conditions without the need for a lengthy observation period. This method was particularly suitable for identifying patterns and relationships between environmental factors and service delivery outcomes, making it a valuable tool for informing strategic improvements and policy decisions aimed at enhancing public service efficiency and effectiveness within the council.

3.2 Targeted Population and Sample Size

The study population encompassed a total of 120 individuals within Dodoma City Council (Dodoma City Council, 2023). To ensure the research findings were both representative and manageable, a sample size of 93 participants was determined. This sample was carefully selected to capture the diverse perspectives and experiences within the council, enabling the study to draw meaningful insights about the impact of the working environment—comprising the physical environment, social environment, and organizational culture—on public service delivery. By including a wide range of participants from different departments and roles, the study aimed to provide a comprehensive understanding of the various factors influencing

service outcomes, thus ensuring the findings were reflective of the broader organizational context.

3.3 Data Collection Methods

The data collection method employed for this study was a questionnaire survey, which involved the distribution of carefully crafted questionnaires to targeted key respondents to ensure the capture of relevant and specific information. This approach was chosen to facilitate efficient and structured data gathering, allowing participants to provide their responses in a standardized format. The survey specifically targeted individuals across various departments within Dodoma City Council, including administration, human resources, finance, and service delivery units, ensuring that the insights gathered were comprehensive and represented a broad spectrum of experiences and perspectives. By focusing on these key departments, the study aimed to understand how different aspects of the working environment—such as the physical workspace, social interactions, and organizational culture—affect public service delivery within the council.

3.4 Variable Measurements and Data Analysis

3.4.1 Variable Measurements

In this study, the variables were measured using a standardized Five-Point Likert Scale to ensure consistency and reliability in data collection. The independent variables—Physical Environment, Social Environment, and Organizational Culture—as well as the dependent variable, Public Service Delivery, were all assessed with this scale, where participants indicated their level of agreement ranging from 1 (Strongly agree) to 5 (Strongly disagree). This approach allowed for a nuanced understanding of how the physical workspace, quality of interpersonal relationships, and organizational culture within Dodoma City Council impacted the quality and effectiveness of public service delivery. By capturing perceptions and experiences across these variables, the study could effectively analyze their interrelationships and the overall influence on service outcomes.

Table 3.1 Variable Measurements

Variable			Measurement
Physical Environment	(Independent Variable 1)		Five – Point Likert Scale (1 = Strongly agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly disagree)

Social Environment (Independent Variable 2)	Five – Point Likert Scale (1 = Strongly agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly disagree)
Organizational Culture (Independent Variable 3)	Five – Point Likert Scale (1 = Strongly agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly disagree)
Public Service Delivery (Dependent Variable)	Five – Point Likert Scale (1 = Strongly agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly disagree)

Source: Researcher (2023)

3.4.2 Data Analysis

The multiple linear regression analysis was used to test the significant relationship between independent (working environment) and dependent variable (Public Service Delivery). The following presents is the multiple regression equation that was utilized

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Where;

Y = Dependent Variable

β = Beta coefficient

X_1 = Physical Environment

X_2 = Social Environment

X_3 = Organizational Culture

β_1 = Regression coefficient for X_1

β_2 = Regression coefficient for X_2

β_3 = Regression coefficient for X_3

e = error term

3.5 Validity and Reliability of Data

Before proceeding with the main study, a pilot study was conducted to ensure the validity of the research instruments. This preliminary step involved testing the research instruments on a small sample of respondents to confirm their effectiveness in measuring the intended variables accurately. Following this, the reliability of the data collected was assessed

using Cronbach's Alpha test. This test was selected for its ability to identify any unreliable constructs and exclude them from further analysis. Constructs with a Cronbach's Alpha reliability score above 0.7 were considered acceptable and included in the subsequent analysis, while those with scores below 0.7 were excluded due to their unreliability. This approach was particularly valuable for evaluating constructs in the study that exhibited low correlations among their items.

3.6 Ethical Consideration

To ensure ethical integrity in this study, rigorous measures were implemented. Participants were fully informed and provided with clear explanations about the study's purpose, procedures, potential risks, benefits, and their right to withdraw at any time without repercussions. Respect for participants' autonomy was paramount, emphasizing voluntary participation throughout the research process. Confidentiality measures were strictly adhered to, with stringent protocols in place to protect participants' identities and personal information. Data collection, storage, and analysis were conducted with utmost care to maintain confidentiality and anonymity. In reporting the findings, transparency and accuracy were maintained while ensuring that participant confidentiality was upheld. These ethical considerations were central to the study's methodology, ensuring that it adhered to ethical guidelines and safeguarded the rights and welfare of all participants involved.

4.0 Results

Multiple linear regression analysis was employed to investigate the significant relationship between the independent variable, which encompasses elements of the working environment such as physical environment, social environment, and organizational culture, and the dependent variable, Public Service Delivery. This analytical approach allowed for a thorough examination of how these aspects of the working environment collectively influence public service delivery outcomes.

Table 4.1 presents the model summary results for the multiple linear regression analysis conducted in Dodoma City Council. The coefficient of determination (R-squared) for the model is 0.279, indicating that approximately 27.9% of the variance in Public Service Delivery can be explained by the combined influence of the predictors: physical environment, social environment, and organizational culture.

Table 4.1 Model Summary Results

	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	fl	df2	Sig
	.528	.279	.255	.64284	.279	11.497		89	.000

a. Predictors: (Constant), physical environment, social environment, organizational culture

The standardized coefficients in Table 4.2 indicate that Organizational Culture (Beta = 0.408) has the strongest positive impact on Public Service Delivery, followed by Social Environment (Beta = 0.305) and Physical Environment (Beta = 0.211). These findings underscore that improvements in Organizational Culture, Social Environment, and Physical Environment contribute significantly to enhancing public service outcomes. The statistical significance of all predictor variables ($p < 0.05$) and the confidence intervals for the coefficients further validate the robustness of these results, providing insights into how optimizing these aspects of the working environment can lead to improved service delivery effectiveness in the council.

Table 4.2 Coefficient Regression Results

Model		Unstandardized Coefficients		Standardized Coefficients		ig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
	(Constant)	2.760	.660		.181	.000	1.448	4.071
	Physical Environment	.314	.135	.211	2.316	.023	.583	.045
	Social Environment	.235	.070	.305	3.343	.001	.374	.095
	Organizational Culture	.338	.075	.408	.507	.000	.189	.487

a. Dependent Variable: Public Service Delivery

Table 4.3 presents the ANOVA results for the regression model investigating the relationship between Physical Environment, Social Environment, Organizational Culture, and Public Service Delivery in Dodoma City Council. The model shows a significant overall fit ($F = 11.497, p < 0.001$), indicating that these variables collectively explain a significant portion of the variance in Public Service Delivery scores. The Regression sum of squares is 14.253, with 3 degrees of freedom, suggesting that the model's predictors contribute significantly to predicting Public Service Delivery outcomes. These findings highlight the robustness of the regression model in explaining and predicting variations in Public Service Delivery based on the specified working environment factors.

Table 4.3 ANOVA Results

Model		Sum of Squares	df	Mean Square	F	Sig.
n	Regression	14.253	3	4.751	11.497	.000
	Residual	36.779	89	.413		
	Total	51.032	92			

a. Dependent Variable: Public Service Delivery

b. Predictors: (Constant), physical environment, social environment, organizational culture

5.0 Discussion

In Dodoma City Council, the findings of this study underscore the significant impact of the working environment—comprising physical environment, social environment, and organizational culture—on public service delivery outcomes. Firstly, concerning the physical environment, the study reveals that factors such as office layout, lighting, and temperature play crucial roles in shaping employee well-being and productivity. This aligns with research by Kim (2022) and Adu-Gyamfi et al. (2023), which emphasize that well-designed and comfortable workplaces contribute to higher job satisfaction and perceived meaningfulness of work among public sector employees in Africa. Moreover, access to natural light and greenery, as highlighted by Grissom et al. (2021), not only improves cognitive function but also reduces stress levels, potentially enhancing the performance of public servants.

However, the impact of the physical environment on service delivery can vary, as noted by Mwakyembe (2020), depending on contextual factors such as job characteristics and individual differences. This variability suggests a nuanced relationship where the benefits of a comfortable physical environment may not universally translate into improved service quality across all settings within Dodoma City Council.

Secondly, the study emphasizes the critical role of the social environment in shaping employee experiences and behaviors. Positive relationships with colleagues and supervisors, characterized by trust and cooperation, are found to be essential in fostering engagement and facilitating knowledge sharing among public servants. This finding resonates with insights from OECD (2020) and Mdee et al. (2022), highlighting that supportive social environments contribute significantly to improved service delivery by promoting employee engagement and teamwork.

Moreover, perceptions of organizational justice and fairness within the social environment are shown to influence employee motivation and performance. Ngowi (2021) demonstrates that public servants in Tanzania who perceive fairness in their interactions with colleagues and supervisors are more likely to demonstrate commitment to their organization and deliver high-quality services. This underscores the importance of fostering a fair and equitable social environment to enhance public service delivery outcomes in Dodoma City Council.

Thirdly, organizational culture emerges as a critical determinant of public service delivery effectiveness. A strong organizational culture that prioritizes customer orientation,

accountability, and continuous improvement is found to create a conducive work environment that drives employee performance. This finding is supported by Andrews et al. (2023) and Komba et al. (2021), who highlight the positive impact of a service-oriented and innovative organizational culture on achieving performance goals and delivering high-quality services in public sector organizations.

However, the study also acknowledges the challenges in cultivating and sustaining a positive organizational culture, particularly within bureaucratic and politically influenced structures characteristic of the public sector. The Tanzania Public Service Commission (2021) underscores the importance of effective leadership and communication in overcoming these challenges and ensuring that cultural change initiatives are successful.

6.0 Conclusion

The findings from this study conducted in Dodoma City Council underscore the critical importance of the working environment—specifically the physical environment, social environment, and organizational culture—in shaping public service delivery outcomes. The study reveals that improvements in the physical environment, such as office layout and amenities, contribute to enhanced employee well-being and productivity. Likewise, fostering a supportive social environment with positive relationships and equitable treatment among colleagues and supervisors fosters engagement and teamwork, crucial for effective service delivery. Moreover, a strong organizational culture emphasizing customer orientation and accountability proves pivotal in driving employee performance and achieving service excellence. These insights highlight the complexity and interconnectedness of factors influencing public service delivery in Dodoma, emphasizing the need for comprehensive strategies to optimize the working environment.

Based on the findings, several recommendations can be proposed to enhance public service delivery in Dodoma City Council. Firstly, investing in the improvement of the physical workplace environment by ensuring comfortable, well-equipped offices and incorporating elements that promote employee well-being, such as natural light and green spaces, can significantly boost productivity and satisfaction. Secondly, fostering a supportive social environment through team-building activities, effective communication strategies, and promoting fairness and respect among colleagues and supervisors is crucial. This can enhance collaboration, trust, and ultimately improve service delivery outcomes. Lastly, cultivating a strong organizational culture that prioritizes service excellence, innovation, and continuous improvement should be a priority. Leadership should champion these values, provide clear guidance, and incentivize behaviors that align with the organization's mission and goals. By addressing these dimensions of the working environment, Dodoma City Council can create a conducive atmosphere that empowers its employees to deliver high-quality public services efficiently and effectively.

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Effect of Procurement Auditors' Competence on Implementation of Procurement Audit Recommendations in Babati District Council

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Abstract

This study assesses the effect of procurement auditors' competence on implementation of procurement audit recommendations in Babati District Council. The study employed a cross-section research design. The study used simple random sampling to select 85 respondents while purposive sampling was used to select Key informants for interview. Data were collected through questionnaires and interview. Both descriptive and inferential statistics particularly multiple linear regression analysis was used to analyze quantitative data and content analysis were used to analyze qualitative data. The findings revealed that, procurement auditors' competence in terms of training, skills and professionalism were positive and significant related to implementation of procurement audit recommendations (p value < 0.05). The study concluded that, training, skills and professionalism were important factors in auditors' competence that affect implementation of procurement audit recommendations in Babati District Council. Thus, the study recommends to the government, policy makers and Babati District council should made effort to improve the skills of procurement personnel through targeted training and mentorship programs, while also fostering a professional work culture to ensure effective application of audit recommendations.

Keywords: *Procurement auditor, Competence, Implementations, Procurement Audit, Recommendation, Babati District council*

1.0 Introduction

Worldwide, procurement audit recommendations are recognized as important in improving effectiveness the of procurement functions in public and private organization. This is because such recommendations can identify areas of improvement, and help to ensure that proper procedures and processes are in place, thereby helping to reduce risks and improve efficiency. Additionally, these recommendations can help to ensure that organizations are compliant with applicable laws, regulations, and best practices. Finally, procurement audit recommendations can help to ensure that organizations are obtaining the best value for their money (Mahaček *et al.*, 2017).

The procurement audit recommendations can help to improve the procurement process in developed countries like Australia and the United Kingdom. These recommendations can help to ensure that the procurement process is efficient, cost-effective, and compliant with the relevant laws and regulations (Procurement Sustainable, 2014). The audit recommendations can include suggestions for changes in the procurement process, such as the establishment of an internal audit system, the implementation of a Purchasing Policy, the adoption of a Purchasing Code of Practice, and the introduction of an internal procurement monitoring system. In addition, the audit may also identify areas in which procurement processes need improvement. In these cases, the audit recommendations may provide guidance on how to address these issues (Procurement Sustainable, 2014).

In Sub-Saharan Africa countries like Nigeria, Malawi, Ghana and Kenya, procurement audit recommendations are an essential part of the overall procurement process. They can provide assurance that the procurement process is being conducted in an efficient and effective manner, identify and rectify any weaknesses in the system, and provide a basis for corrective action (Anin *et al.*, 2022).

In Tanzania's context, procurement audit recommendations also seemed important in improving procurement function in the public sector. The procurement audit recommendations provide an assessment of the current state of the procurement system and what needs to be done to improve it. These recommendations are also used to ensure that the public sector is meeting the needs of the citizens and providing value for money. The recommendations may include changes to the procurement process, introducing new technology, implementing improved training and policies, and introducing more effective control mechanisms (Kinunda, 2020).

Despite the importance of procurement audit recommendations in public procurement entities in Tanzanian public sectors, the implementation of procurement audit recommendations in public procurement entities in Tanzanian public sectors has been ineffective in Local government authorities (Matto, 2017). This is due to the lack of awareness and understanding of the importance of adhering to procurement audit recommendations, the absence of a clear implementation plan and the lack of capacity to monitor and evaluate implementation. Furthermore, there is a lack of financial resources and capacity to implement the

recommendations, and there are concerns about the lack of accountability, transparency to carry out effective audits (David, 2019). Therefore, this is motivation of this study to assess the perceived factors affecting implementation of procurement audit recommendations in Tanzania Local Government Authorities.

Although the scholars acknowledges that the procurement audit recommendations are credible, accurate, and relevant, but still the recommendation is not being implemented as required. (Bedasso & Asfaw, 2020). The same scenario in Tanzania context procurement audit recommendations seems to face unexpected challenges in their implementations (Kinunda, 2020). For example, in its Follow-up Report on the implementation of the recommendations from the previous Performance Audit Reports of the financial year 2021/2022 the findings noted that, the total of 11 recommendations were issued in this particular audit, and all of them were directed to the President's Office - Regional Administration and Local Government (PO-RALG). The overall follow-up results on the implementation of the issued audit recommendations includes procurement audit recommendations indicated that out of the 11 issued recommendations, 10 recommendations were not implemented while one recommendation was partially implemented (CAG report, 2022).

Several studies have been done on factors influence procurement auditing on organization performance, in terms of insufficient procurement auditor's experience, lack of auditing coordination or communication between parties and scarcity of human resources (Muianga *et al.*, 2015; Eyaa & Oluka, 2018; Baha, 2020). Another recent study in Tanzania by Yussuf *et al.* (2021) indicated that the auditor's independent and top management support were the factors affecting internal audit functions on the procurement performance in the parastatal organizations.

However, from previous studies and in Tanzania context there was scanty information explained the factors such as procurement audit competence affecting implementation of procurement audit recommendations. Therefore, this study intended to address the knowledge gap by assessing perceived factors affecting implementation of procurement audit recommendations in Tanzania Local Government Authorities specifically at Babati District. Specifically, the study focused on effect of procurement auditors' competence on implementation of procurement audit recommendations.

2.0 Literature Review

2.1 Theoretical Framework

The study used a competency model first emerged in the early 1990s. The first known use of the term “competency model” was in a 1992 report by the American National Standards Institute (ANSI). At that time, ANSI was developing a model for translating competencies into certification requirements (Cramer *et al.*, 2022).

A competency model is a framework for defining the skill and knowledge requirements of a job. It is a collection of competencies that jointly define successful job performance. Competency models have emerged as valuable tools employed by human resources and training departments to define skill and knowledge requirements of specific jobs, to assess competencies and performances, and help set business strategy (Isnawan & Sudirman, 2022).

According to Cramer *et al.*, (2022) suggests that there are three types of competencies that are needed for success in any organization: technical, human, and conceptual. Technical competencies are those that pertain to the nuts and bolts of a job, such as how to use a computer or how to do the math. Human competencies are those that pertain to the skills and knowledge necessary to do the job, such as how to communicate effectively or how solve problems. Conceptual competencies are those that go beyond the basics and encompass an individual's understanding of their work and the work of their organization, such as understanding how the company operates or knowing how to market a product. Competency model has been widely used in organizations to help employees learn and grow in their careers. It can also be used to assess an employee's skills and assess how well they fit into the company's culture (Cramer *et al.*, 2022).

In this study competency model was applicable to effect of procurement auditor's competence on implementation of procurement audit recommendations. Since the auditor's competence is important in implementation of procurement audit recommendations. The auditor's knowledge of the procurement process and their ability to understand the client's business needs are critical in ensuring that the procurement process is conducted in a fair and objective manner. The auditor also assists the client in ensuring that the best possible procurement options are considered, which ultimately leads to cost-effective solutions.

2.2 Empirical Literature Review

Chogo (2018) examines the determinants impacting procurement law compliance: A case study of Kwale County in Kenya. This study used a survey design. Both qualitative and quantitative approaches were employed, with stratified and simple random sampling used to determine the research respondents' sample size. Data collection methods included questionnaires and interviews. The data was analyzed using descriptive statistics and a qualitative technique. Correlation and regression analysis were used to determine the link between variables and to forecast future associations. The study discovered that while staff training, organizational culture, and law enforcement by agencies all have a favorable effect on regulatory compliance, procurement methods had a negative effect on compliance.

Ayele (2020) conducted a study titled "Assessing the Impact of Procurement Auditors' Competence on Audit Recommendations in Ethiopian Government Institutions." Utilizing a mixed-methods approach, Ayele combined qualitative interviews with quantitative surveys to gather data. The study revealed that while auditors' competence significantly influenced the implementation of audit recommendations, challenges such as inadequate training and resource constraints persisted. Consequently, the study concluded that improving auditors' skills and providing adequate resources are crucial for effective implementation (Ayele, 2020).

Mekonnen and Getachew (2021) explored "The Role of Procurement Auditors' Competence in Enhancing Audit Recommendation Implementation in Tanzanian Public Sector Institutions." This research employed a cross-sectional survey design, collecting data from procurement auditors across various Tanzanian government agencies. The findings highlighted that higher levels of competence among auditors were associated with more effective implementation of audit recommendations. The study emphasized the need for continuous professional development to maintain auditors' skills and effectiveness.

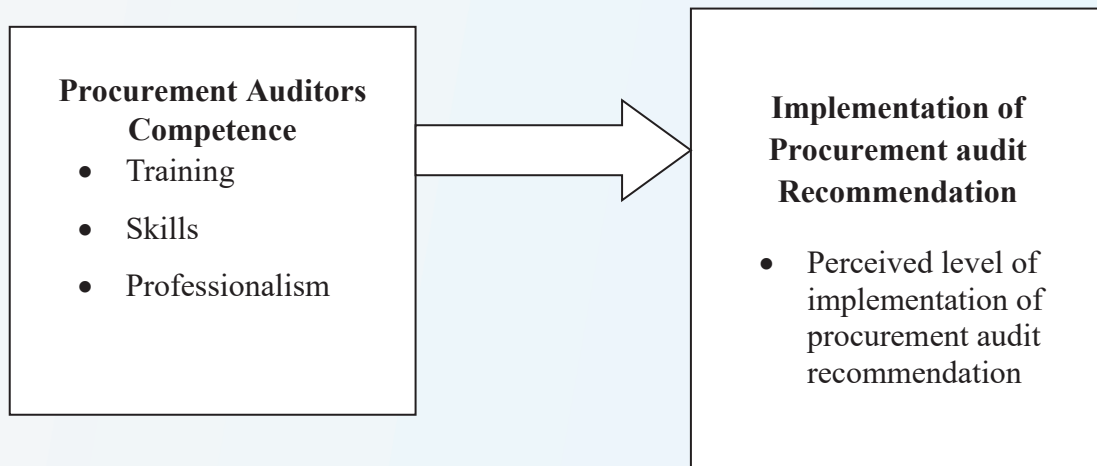
Kebede (2019) examined "Competence of Procurement Auditors and Its Effect on the Implementation of Audit Recommendations: A Case Study of Tanzanian Local Government Authorities." Kebede used a quantitative research approach involving structured questionnaires distributed to procurement auditors and administrative staff. The research found that although competence had a positive impact on the implementation of audit recommendations, there were significant gaps in training and support. The study concluded that targeted training programs and better support systems are essential for enhancing audit recommendation follow-through.

Tesfaye (2022) investigated "Effectiveness of Procurement Auditors' Competence on the Adherence to Audit Recommendations in East African Countries." This study applied a comparative analysis methodology, using data from several East African nations, including Tanzania. The research revealed that auditors' competence played a critical role in the adherence to audit recommendations, but variability existed across countries. The study recommended fostering regional cooperation and sharing best practices to improve auditors' competence and recommendation implementation.

2.3 Conceptual Framework

A conceptual framework is a "written or visual representation of an expected relationship between variables. This study has identified two variables, the independent variable (auditor's competence) and the dependent variable (implementation of procurement audit recommendation) as presented in Figure 1.

In this framework the competence of procurement auditors ensures that audits are conducted with high expertise and accuracy, which contributes to the formulation of practical and actionable recommendations. Thus, auditor competence impact how effectively procurement audit recommendations are implemented, as strong oversight, active involvement, and skilled auditing collectively support the execution of recommended improvements in procurement practices

Independent Variables**Dependent Variable****Figure 35: Conceptual Framework**

Source: Researcher own construct and Literature review, 2024

3.0 Research Methodology**3.1 Research Design**

Kothari (2008) defines research design as the arrangements of the conditions and factors for effective collection and analysis of the data in such a way that it is done and completed at low cost and accuracy in procedures. For the purpose of this study, a cross-sectional research design was employed. This is because data was collected at one point in time to fulfill the study objectives. Also, this design was adopted because it is capable of collecting large data from a relatively large number of participants at a particular time.

3.2 Research Approach

The study will use quantitative research that involved hypothesis testing to determine relationship between independent and dependent variables. The quantitative approach will use for this study since it will base on quantitative facts.

3.3 Study Population

The target group from which the sample is drawn is referred to as the population (Patel, 2019). It reflects a group of people or elements that a researcher has in mind from which data can be obtained. The target population of this study will involve 108 staff from procurement management unit, accountants, tenders board, user departments and the head of department Babati district council (Babati District human resource office, 2023). These was considered for the study for their strategic and operational interaction with the procurement function.

3.4 Sample size and Sampling Procedure**3.4.1 Sample size**

The sample size of this study was 185 respondents which essentially draw from the entire population of 108 respondents. The sample size was determined by the Taro Yamane (1967) formula below so as have a level of significance. The formular hold advantage than other

formulary because it is straightforward and easy to use. It is especially valuable when dealing with finite populations, offering a pragmatic approach that balances accuracy and feasibility. The sample size in this study was determined by the formula shown below:

$$n = \frac{N}{1 + N(e)^2}$$

Where; n= Sample size

N= Number of members

e= Level of precision

e=5% since the level of confidence is 95%

Therefore, sample size calculated as follows;

$$n = 108 / 1 + 108(0.05)^2 = 85$$

Therefore, the sample size is 85 respondents in Babati District Council

3.4.2 Unit of Analysis

In this study, the unit of analysis refers to the individual staff members within specific roles in the Babati District Council, including those from the procurement management unit, accountants, tenders board, user departments, and the head of department. These individuals constitute the primary subjects of investigation, and their perceptions, attitudes, and behaviors were examined to understand the perceived factors influencing the implementation of procurement audit recommendations. In this study unit of analysis consisted audit committee, PMU staff involvement and procurement auditors' competence?

3.4.3 Sampling Procedure

According to Saunders *et al* (2007) sampling is defined as the process of selecting a given number of the subjects or elements from the population as the representation of that population. For this study the sample will use stratified and purposive sampling. The researcher used proportionate stratified sampling that was followed by simple randomly procedure to select 85 respondents from Audit Committee and Procurement Management Unit, since they have equal chance to form the sample size of this study.

Moreover, the researcher used purposive sampling procedure to select respondents who are specifically involved with internal auditing, procurement activities and management decisions. This technique used to collect data from Head and senior procurement officers from procuring entities in Babati District because they are key informants with knowledge on procurement and tendering processes.

3.5 Data Collection Method and Approach

3.5.1 Questionnaire

The researcher will collect data by using questionnaire, the tool was formulated by following a five-point Likert structure that will assess the degree of agreement or disagreement with a certain statement. The Likert scale will range from 1 to 5 with 1 indicating strong disagreement and 5 indicating strong agreement. Each independent variables were measured using the same scale with different questions as concerned.

Questionnaire refers to a series of questions directed to individuals in order to obtain statistically useful information about a given topic (Pandey and Pandey, 2021). The use of questionnaires will arrive at because they provide systematic records to refer to when in need of reviewing responses. By virtual of their position and being able to read and write the self-administering questionnaires to Babati district staffs who deals with procurement related activities was distributed to them. Questionnaires was used since they are able to gather relevant and enough information.

3.5.2 Interview

In this study face to face interview was used to heads of Departments because the accessibility of asking the respondents directly in the organization and the interview guide was prepared by the researcher in order to have consistency in asking questions from the respondent's clarification and follow up of questions. This method was used because it is a simple and easier way or method of acquiring information that provides straight answers to research questions.

3.6 Data Analysis

In this study the data was analyzed quantitatively Quantitative data is any quantifiable information that can be used for mathematical calculation or statistical analysis. This form of data helps in making real-life decisions based on mathematical derivations. In quantitative data analysis the multiple linear regression analysis and descriptive statistics was used. Descriptive statistics methods will involve the estimation of frequencies, percentages and mean while multiple regression analysis will use to show the relationship and the effect of the independent variables to the dependent variable. The reason for using multiple regression analysis because dependent variable (implementation of procurement audit recommendations) was computed as continues variable. Before running multiple linear regression, all variables captured using Likert scale were converted into factor score with aid of principle component analysis tools in SPSS Software.

The following equations introduce the multiple regression model in the study:

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \varepsilon \dots\dots\dots (i)$$

Whereby:

Y=Implementation of Procurement audit Recommendation

X₁= Training

X₂=Skills

X₃= Professionalism

β₀= Constant

ε₀= Error

Moreover, qualitative data analyzed using content analysis. Content analysis enables researchers to identify patterns, themes, and trends within qualitative data. Through careful examination of the content, researchers can discern recurring ideas, concepts, or sentiments, providing valuable insights into the underlying phenomena being studied.

4.0 Findings and Discussions

This chapter consists of data presentation, interpretation, and discussion of the findings. The first section presented the characteristics of respondents, while other sections are presents findings related to effect of procurement auditors' competence on implementation of procurement audit recommendations in Babati District council

4.2 Respondents General Information

This section gives an analysis of the demographic information about the survey respondents. The analysis was used to make general observations about the data. This part is all about the respondent's demographic profile, which includes their gender, age, level of education, and number of years of work experience. The following are the results of the demographic profile of the respondents.

4.2.1 Sex

Results in Table 4.1 show that out of 85 respondents who participated in the survey the majority of respondents in the field of study were male that having 57.6% of the total respondents while female respondents were only 42.4% of the total respondents. Furthermore, the findings imply that, the gender of respondents may impact the implementation of procurement audit recommendations in several ways. For instance, there may be differences in how males and females perceive and prioritize certain aspects of the recommendations. Gender-related factors such as communication styles, decision-making processes, and power dynamics within the organization could also influence the extent to which the recommendations are implemented (Hasan *et al.*, 2021).

Table 4.1: Distribution of Respondents by Sex (n=85)

Sex Category	Frequency	Percent
Male	49	57.6
Female	36	42.4
Age Bracket (Years)		
18-25	11	12.9
26-30	16	18.8
31-35	37	43.6
36-40	21	24.7
Level of education		
Certificate	13	15.3
Diploma	26	30.5
Bachelor degree	40	47.1
Master degree	6	7.1
Working experience (Years)		
1 – 5	31	36.5
6-10	44	51.8
11-15	10	11.7

Source: Field Data (2024)

4.2.2 Age

The respondents also indicated their age bracket whose analysis is presented in Table 4.1. Results revealed that most respondents were between the age of 26 and 35 years. This was represented by 62%. Those with 36 years and above represented by 24.7% and only 12.9% were between 18-25 years. The findings imply that, majority of the respondents were in young and energetic age which is able to learn various issues including factors affecting implementation of procurement audit report recommendations in Babati District council.

According to Iddi (2020) the age of respondents can play a role in the implementation of procurement audit recommendations. Different age groups may have varying levels of experience, technological proficiency, and openness to change. Younger respondents might be more familiar with new technologies and more receptive to innovative approaches, while older

respondents may have more industry experience and institutional knowledge that could impact their decision-making regarding implementation.

4.2.3 Education Level

The analysis on level of education of respondents reveal that majority of respondents had attained bachelor degree education (47.1%) followed by diploma education (30.5%), certificate education (15.3%) while those with Master degree education represented by 7.1% (Table 4.1). The findings imply that, respondent acquired high education. This signifies that the respondents included in the study had the knowledge required to answer the questions related to factors affecting implementation of procurement audit recommendations in Babati District council.

The findings supported by Hamza *et al.*, (2018) the education level of respondents can influence their understanding and interpretation of the procurement audit recommendations. Higher education levels may provide individuals with more specialized knowledge, critical thinking skills, and analytical abilities, enabling them to better comprehend the recommendations and devise effective implementation strategies. Additionally, higher levels of education could indicate a greater propensity for continuous learning and professional development, potentially facilitating the implementation process.

The findings supported by Ogwel *et al.*, (2019) The working experience of respondents can have a significant impact on the implementation of procurement audit recommendations. Individuals with extensive experience in procurement or related fields may possess a deeper understanding of the challenges and complexities associated with implementation. Their experience could contribute to their ability to identify potential obstacles, develop realistic action plans, and navigate organizational dynamics more effectively. On the other hand, less experienced individuals may rely on the guidance and support of more senior colleagues during the implementation process.

4.2.4 Working Experience

The study further sought to know the duration of time the respondents had been working on their job positions as shown in Table 4.1. The findings revealed that, majority of respondents 51.8% of the respondents had worked in their designated job positions between 6 and 10 years, followed by 36.5% worked less than 6 years while 11.7% had worked more than 10 years. This implies that the respondents have been in their designated jobs long enough to understand various issues outlined and are in a position to give valid information related to factors affecting implementation of procurement audit recommendations in Babati District council.

4.3 Procurement Auditors Competence

This section intended to present the descriptive statistics results the related to the effect of procurement auditor's competence on implementation of procurement audit recommendations. The mean score and standard deviation were used to summarize the responses as shown in Table 4.2.

Table 4.2: Descriptive statistics on procurement auditors' competence

Variables	Mean score	Standard Deviation
Training	4.26	0.825
Skills	4.01	0.186
Professionalism	4.32	0.904

4.3.1 Training

Findings in Table 4.2 show that, the mean score for the statement related to training was 4.26 indicating that, respondent agree that, organization conducting staff training that create capability in implementation of procurement audit recommendations. This implies that, to high extent Babati District council conducting staff training that create capability in implementation of procurement audit recommendations.

The findings were similar to those of Yussuph *et al.*, (2020) revealed that, implementation of procurement audit recommendations often necessitates changes in processes and procedures, and therefore requires adequate training to ensure staff can carry out their roles effectively under the new guidelines. Training programs can help staff understand the rationale behind the recommendations, learn new procedures, and adapt to new systems or technologies. This enables a smooth transition and ensures the correct and consistent application of changes across the organization. In the absence of adequate training, employees may struggle to comply with the new processes, leading to errors, inefficiencies, or even non-compliance.

4.3.2 Skills

Moreover, findings in Table 4.2 show that, the mean score for the statement related to skills was 4.01 indicating that, respondent agree that, the skilled staff was essential in implementation of procurement audit recommendations. Indicating the level of agreement was high. This implies that, having staff with skills related to procurement activities was essential in Babati District council in implementation of procurement audit recommendations.

The findings concur with Baha (2020) revealed that, the skills of the team involved in implementing the procurement audit recommendations are critical to the success of the implementation. Necessary skills might include project management to oversee the changes, technical skills to understand and apply new procedures or technologies, and interpersonal skills to manage change and resistance within the organization. Skill gaps can impede the progress of the implementation, cause errors or inconsistencies, and may even result in failure to achieve the desired outcomes.

4.3.3 Staff Professionalism

Furthermore, findings in Table 4.2 show that, the mean score for the statement related to professionalism was 4.32 indicating that majority of respondent (80.3%) agree that, staff level professionalism enhance the implementation of procurement audit recommendations.

Indicating the level of agreement was high. This implies that, professionalism is important factor in procurement auditor to encourage Babati District council in the implementation of procurement audit recommendations. Therefore, professionalism is crucial for procurement auditors to encourage organizations in implementing procurement audit recommendations. It enhances credibility, builds trust and confidence, and maintains objectivity, showcases expertise, facilitates effective.

The findings supported by Mrope (2018) reveled that, professionalism in the staff contributes to the effective implementation of procurement audit recommendations. This encompasses a range of attitudes and behaviors including commitment to the organization's objectives, adherence to ethical standards, diligence in executing tasks, and a proactive approach towards learning and adaptation. For instance, professionals would understand the importance of the audit recommendations, adhere to the new procedures, and address any issues promptly and appropriately. Lack of professionalism could lead to resistance to change, sloppy execution, and ethical issues, which could undermine the implementation and negatively impact the organization's reputation and performance.

The findings also supported from interview data. The third respondents add the following about PMU staff involvement.

"...Skilled auditors provide accurate, relevant, and actionable insights based on their thorough understanding of procurement processes and regulations. Their expertise ensures that recommendations are practical and tailored to the organization's needs, increasing the likelihood of successful implementation. Additionally, competent auditors can effectively communicate their findings and work collaboratively with stakeholders to address any issues, further facilitating the implementation process..."

4.4 Inferential Statistics Results

This section presents inferential statistics results whereby multiple linear regressions were performed to test significant relationship between independent and dependent variables.

4.4.1 Model Summary

The model summary of independent variables (training, skills and professionalism) and implementation of procurement audit recommendations in Table 4.3, shows the coefficient of determination (R^2) under model one was 0.595, which meant the independent variables (audit committee, PMU staff involvement, procurement audit competence) explained 59.5% of the variations in implementation of procurement audit recommendations.

Table 4.3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.772	0.595	0.511	0.401

a. Predictors: (Constant), Training, skills and professionalism

b. Dependent Variable: Implementation of procurement audit recommendations

4.4.2 Analysis of Variance

The Analysis of Variance (ANOVA) in Table 4.4 was used to assess the overall significance of the regression model. Results in Table 7 indicated that, the F-value was 81.21 and the p-value was 0.000. This meant that the regression model was significant with p-values less than 0.05 at $\alpha = 0.05$ level in explaining the linear relationship between independent variables (training, skills and professionalism) and implementation of procurement audit recommendations.

Table 4.4: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	94.977	4	23.744	81.21	0.000
	Residual	23.891	16	0.251		
	Total	118.868	16			

a. Dependent Variable: Implementation of procurement audit recommendations

b. Predictors: (Constant), Training, skills and professionalism

4.4.3 Regression Coefficients

The Multiple linear regression models with Implementation of procurement audit recommendations as the dependent variable was estimated to determine factors affecting implementation of procurement audit recommendations in Babati District council the results for the estimated regression model are presented by the Table 4.5.

Table 4.5: Regression Results

Model	Unstandardized Coefficients	Standardized Coefficients	T	Sig.
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	B	Std. Error	Beta		
(Constant)	0.011	0.050		0.217	0.829
Training	0.182	0.041	0.162	2.565	0.011
Skills	0.138	0.018	0.266	4.731	0.001
Professionalism	0.211	0.041	0.237	0.804	0.014
a. Dependent Variable: Implementation of procurement audit recommendations					

According to the regression results in Table 4.5, training has a positive and significant relationship with the implementation of procurement audit recommendations. The coefficient for training is 0.182, with significance level of 0.011. This means that for every unit increase in training, there is a corresponding 0.182 increase in the implementation of audit recommendations, assuming other variables are held constant. This suggested that, the impact of training on the implementation of procurement audit recommendations is statistically significant. This finding is supported by previous studies, such as those conducted by Mwambua and Juma (2019), which show that training improves employees' ability to understand and apply audit recommendations effectively. Adequate training empowers staff with the necessary knowledge and skills to address audit deficiencies, enhancing the overall procurement system's efficiency.

Moreover, the results show that skills have a strong positive and significant impact on the implementation of procurement audit recommendations. The coefficient for skills is 0.138, with significant p-value of 0.001. This implies that a higher level of skills among procurement personnel leads to better compliance with and application of audit recommendations by 13.8%. These findings are consistent with studies such as Chuma (2020), who highlighted that skills are crucial in understanding audit procedures and applying recommended changes. Skilled procurement staff are better equipped to identify gaps in compliance and make the necessary improvements, leading to the successful implementation of audit recommendations.

Furthermore, professionalism also has a significant positive effect on the implementation of procurement audit recommendations, as indicated by an coefficient of 0.211, and a significance level of 0.014. This finding suggests that the more procurement professionals adhere to ethical standards and best practices, the more likely they are to effectively implement audit recommendations. The positive relationship between professionalism and implementation aligns with Nkumbula and Mugoya's (2020) research, which emphasized the importance of professional conduct in ensuring the integrity and effectiveness of procurement systems. Professionalism fosters transparency and accountability, which are essential in addressing audit concerns and ensuring that procurement audit recommendations are adequately implemented.

5.0 Conclusion and Recommendations

5.1 Conclusion of the Study

The study found that, procurement auditor's competence in terms of training, skills and professionalism was positive and significant related to implementation of procurement audit recommendations. This concludes that, PMU staff involvement was important factors that affect on implementation of procurement audit recommendations in Babati District council.

5.2 Recommendations

Based on the key findings of the study, the following recommendations are proposed: To the Ministry of Finance, it is essential to prioritize continuous training programs for procurement staff to enhance their skills and professionalism, as this will significantly improve the implementation of procurement audit recommendations. To the Public Procurement Regulatory Authority (PPRA) as the policy maker, policies should be developed that emphasize the importance of professional certifications and regular capacity-building initiatives for procurement officers to ensure adherence to ethical standards and best practices. To Babati District Council, efforts should be made to improve the skills of procurement personnel through targeted training and mentorship programs, while also fostering a professional work culture to ensure effective application of audit recommendations and compliance with procurement regulations.

5.3 Suggestions for Further Studies

The study was limited in one factor (procurement audit competence) that affect on implementation of procurement audit recommendations in Babati District council. The similar study should be focused on other factors and other Local government Authorities in Tanzania for generalization of findings.

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Effect of Legal and Regulatory Framework on Public Procurement Audit Performance in Local Government Authorities In Tanzania

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Abstract

The current study was carried out to investigate effect of legal and regulatory framework on public procurement audit performance in local government authorities in Tanzania. The study used cross sectional research design while stratified sampling procedure and purposive sampling procedure were used to select 102 respondents. The data were collected through questionnaire while data were analyzed using descriptive statistics and multiple linear regression analysis. The study found that components of legal and regulatory framework (compliance with legal provisions, auditing process procedures, transparency in the auditing procedure and accountability of audit committee members) were positive and significance related to public procurement audit performance. Therefore, the study concluded that legal and regulatory framework (compliances with legal provisions, auditing process procedures, transparency in the auditing procedure and accountability of audit committee members) has important determinants of public procurement audit performance of local government authorities in Tanzania specifically in Dodoma. The study recommends that Dodoma City Council should continue applying effectively legal and regulatory framework so as to ensure that organizational goals in procurement audit are well achieved.

Keywords: *Legal and Regulatory Framework, Public Procurement, Audit Performance, Local government Authorities, Dodoma city, Tanzania*

1.0 Introduction

Public procurement has grown to be an essential component in the global economic and business landscape. This importance is underscored by the growing attention from donors, governments, civil society, professional organizations, the private sector, and the general public (Njoroge, 2020). Due to the substantial volume of public sector procurement and its operational context, procurement audits are becoming a key responsibility of procurement regulatory bodies (OECD, 2021). These audits review the entire procurement process, from planning to contract execution, and are conducted both internally and externally. The focus on the completeness, efficacy, and accuracy of the procurement process is a major aspect of public sector procurement audits (TPJ, 2022).

In European countries like North Macedonia, public procurement audits cover transactions involving goods procurement, infrastructure and civil works, services, and consultancy and management services. The Law on Public Procurement in North Macedonia mandates that the State Audit Office audit the use and expenditure of public procurement funds by contracting authorities. These audits are regularity audits within the audited entities (Dionisjev, 2021). In the United Kingdom, effective public procurement audits ensure public entities achieve the best value for money and uphold probity, thereby securing public confidence (James, 2021). The audit typically involves both compliance and performance audits.

In African countries, public procurement audits are also practiced. Effective implementation of these audits ensures public procuring entities achieve the best value for money and uphold probity, thus securing public confidence (Asfaw, 2021). However, non-compliance in public procurement practices is increasing annually, attributed to various factors such as non-adherence to auditing standards, lack of capacity-building programs, non-compliance with technical audit factors, legal framework failures, lack of professional skills, and poor records management (Njoroge, 2021).

In Tanzania, public procurement audits have been in practice since the enactment of PPA No. 21 in 2004 and continue to be mandatory for all public organizations (URT, 2021). As per PPA No. 7 of 2011, with amendments in 2016, the Public Procurement Regulatory Authority (PPRA) arranges procurement audits for all public procuring entities using auditors appointed and qualified by the authority. These audits are systematically conducted to assess compliance with the law and ensure value for money (URT, 2022).

Effective implementation of public procurement audits guarantees that public procuring entities achieve the best value for money and maintain integrity, thereby securing public trust (Asfaw, 2018). An efficient audit system is crucial to achieving the objectives of public procurement. It is vital that public procurement bodies strictly follow the applicable rules and regulations governing their activities. This adherence is key to boosting productivity, efficiency, optimal resource usage, and maintaining a balanced government budget. (Ochiri, 2017).

In recent years, the performance of local government authorities in Tanzania, exemplified by Dodoma City Council, has experienced a concerning decline, as evidenced by a 2021/22 report from the Controller and Auditor General (CGA). Notably, the report revealed a stark reality—

46% of the audited local government authorities were found to be non-compliant with audit requirements. This high rate of non-compliance indicates a systemic failure to adhere to proper financial and operational procedures, raising significant concerns about the transparency and efficiency of procurement processes within Dodoma City Council.

Procurement experts' insights are vital for understanding practical challenges and opportunities related to public procurement audit within Tanzanian local government authorities. Experts can provide nuanced perspectives on implementation gaps, regulatory hurdles, and competency issues affecting audit practices (Yussuf, 2021; Sallwa, 2022). Their input will enrich the study's examination of how legal frameworks, auditor competencies, and records management practices contribute to or hinder effective procurement performance auditing.

The 2021/22 CGA report's findings of widespread non-compliance among local government authorities, including Dodoma City Council, highlight significant deficiencies in audit adherence and accountability within public procurement processes (CGA, 2022). These findings underscore the urgent need for strengthened audit practices to enhance transparency, efficiency, and resource management in local government procurement.

While various studies, such as those by Etse & Asenso-Boakye (2020), Jembe and Wandera (2019), and Ochriri *et al.* (2018), highlight the essential role of public procurement audits in ensuring overall procurement performance, there is a notable gap in the literature concerning the determinants of public procurement audit practices specifically within Tanzanian local government authorities. Existing research in the country, including Yussuf's (2021) study on the impact of internal audits on procurement performance and Sallwa's (2022) investigation into the influence of procurement audits on the effectiveness of public organizations, has not addressed the unique challenges faced by local government authorities. This study aims to bridge this gap by examining how factors such as public procurement laws and regulatory frameworks, auditors' competency, and procurement records management influence procurement performance within Dodoma City Council. Through exploring these specific determinants, the research seeks to provide valuable insights that can help address issues of non-compliance and budget deficits, thereby improving the governance and efficiency of procurement processes at the local government level.

In addition, a number of efforts have been taken by the government to ensure proper practice of public procurement audit. These efforts include enactment of legal and regulatory framework guiding public procurement audit practice. But one of the challenges affecting the practice of public procurement audit in most of local government authorities is that, procurement audit is not given priority. Despite the efforts taken, still to date, there is improper practice of public procurement audit. Based on this argument, this study sought to address the identified gap as whether factors such as legal and regulatory framework, are crucial for public procurement audit in procurement performance since there is limited understanding in the academic field in the context of Tanzania.

2.0 Literature Review

2.1 Theoretical Review

The study utilized Institution theory. According to Scott (2004), John Meyer and Brian Rowan, the pioneers of institutional theory, described it as the process through which organizations gradually evolve by adopting new ideas and philosophies in response to changes in the broader business environment. These reforms are significantly influenced by the manager's expertise. The core concepts of institutional theory provide valuable insights for analyzing the relationship between organizations and their environment, emphasizing social rules, expectations, norms, and values as the main sources of pressure on organizations. The theory prioritizes legitimacy over efficiency or effectiveness as the primary goal of organizations.

The environment is seen as the broader context in which organizations operate, encompassing diverse entities such as regulatory bodies, governmental agencies, courts, professionals, professional standards, interest groups, public opinion, laws, regulations, and societal values. Institutional theory suggests that organizations adapt to fit their environment. This theory, commonly used in analyzing public procurement, is rooted in Scott's (2004) identification of three pillars of institutions: regulatory, normative, and cultural-cognitive. The regulatory pillar emphasizes rules, laws, and penalties as mechanisms for enforcement, emphasizing efficiency as a driver of adherence. Scott posits that institutions consist of cultural-cognitive and regulatory components which, in conjunction with associated practices and resources, imbue life with significance. The normative pillar deals with norms (expected behaviors) and values (desired ideals), with social obligation forming the foundation for compliance.

One of the strengths of institutional theory is its emphasis on the importance of rules and regulations within organizations and the broader community. It asserts that progress is dependent on the support of rules, regulations, policies, or laws (Scott, 2014). For instance, the implementation of e-procurement must be underpinned by rules, regulations, and procedures to ensure effective and efficient execution. However, a criticism of institutional theory is that it tends to overlook internal dynamics of organizational change and ignores the roles of power and self-interest.

The legal and regulatory framework plays a crucial role in shaping public procurement audit performance, laws and regulations establish the rules and standards that govern public procurement processes, including auditing practices. These regulations often set out requirements for transparency, accountability, fairness, and efficiency in public procurement activities. Auditors conducting audits of public procurement processes must adhere to these legal requirements to ensure compliance and integrity in their work.

2.2 Empirical Literature Review

Dionisjev (2020) investigated the role of state audits in the public procurement process in the Republic of North Macedonia. This qualitative study revealed that increased financial audits conducted by the State Audit Office significantly enhance control over public funds' expenditure in procurement processes. The research uncovered significant deficiencies in public procurement practices that necessitate improvements through detailed audit

recommendations. It was observed that audits often reveal procedural weaknesses that affect procurement outcomes. Additionally, the study highlighted that audited entities frequently overlook specific sub-findings provided by the State Audit Office, indicating a need for more robust implementation of audit recommendations. The findings underscore the importance of continuous improvement in the regulatory framework to address these challenges.

Kikula et al. (2020) explored the impact of regulatory frameworks on procurement audit performance in East Africa. This study used a mixed-methods approach to analyze how regulatory frameworks affect the effectiveness of procurement audits. The research found that comprehensive legal frameworks are critical for ensuring effective procurement audits. Stronger regulatory enforcement was shown to lead to improved audit outcomes and greater accountability. The study recommended strengthening regulatory frameworks to support better procurement practices and enhance audit performance. It also suggested that regular updates and revisions to legal frameworks are necessary to address emerging issues and challenges in procurement.

Mwaipopo (2020) examined the effectiveness of legal and regulatory frameworks in public procurement in Tanzania. The study employed a case study approach to assess how well-defined regulations influence procurement audit efficiency and effectiveness. The findings indicated that well-structured and clear regulatory frameworks significantly contribute to improving procurement audits. The research emphasized the need for continuous updates and improvements in regulatory frameworks to keep pace with evolving procurement practices and challenges. The study also highlighted the role of regulatory bodies in enforcing compliance and ensuring that procurement processes adhere to established legal standards.

2.3 Conceptual Framework

This study was guided by independent and dependent variables that show the relationship between them. Accordingly, Figure 1 presents the conceptual framework: in this study the legal framework encompasses rules, procedures, and standards typically set by precedent in common law, which guide decisions in legal cases (Willes, 2016). Auditors, acting as independent entities, ensure adherence to these legal requirements and convey their findings to the public's representatives. Core components of audit law encompass compliance, monitoring, documentation, and reporting (Asfaw, 2018). The legal and regulatory framework is defined by entities such as PPA, its regulations, PCCB, PPRA, and GPSA, focusing on compliance and monitoring.

Independent variables

Dependent variable

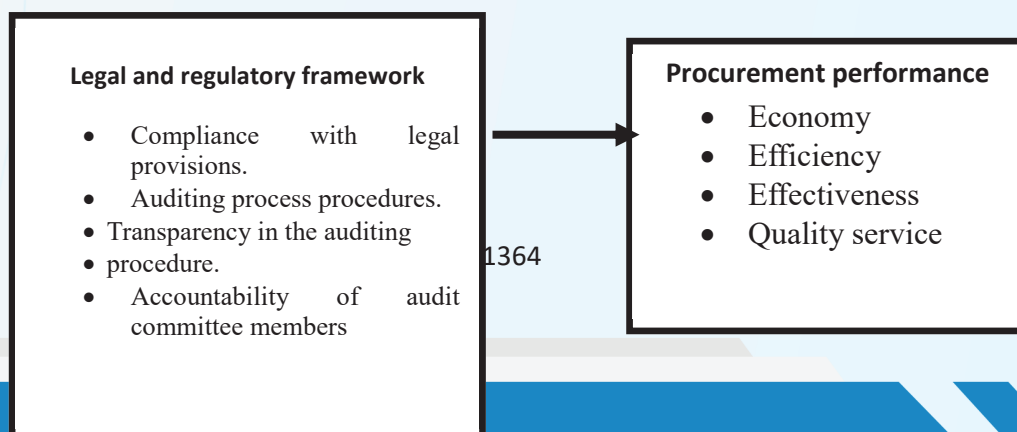


Figure 36: Conceptual Framework

Source: Constructed by researcher, 2024

3.0 Research Methodology

3.1 Research Design

The decision to use a cross-sectional descriptive research design for this study is justified by its suitability for capturing a snapshot of a phenomenon at a specific point in time. This design is particularly effective for describing the current state of public procurement audit performance in local government authorities, such as Dodoma City Council. As noted by Creswell (2014), cross-sectional studies are useful for examining the prevalence and characteristics of a particular phenomenon within a defined time frame, providing a clear picture of the situation as it exists at that moment.

3.2 Research Approach

The study used quantitative research approach since quantitative data provided a broad overview and allows for generalizations across larger populations. Quantitative method allowed for the collection of numerical data that can be objectively measured and analyzed (Creswell & Creswell, 2017). This is crucial when assessing factors such as audit performance, which often involved measurable indicators. On the other hand public procurement audits typically involve a large number of transactions and entities across various local government authorities. Quantitative research enabled researcher to gather data from a significant sample size, providing a broader perspective on the factors influencing audit performance.

3.3 Area of the Study

The study was conducted at Dodoma City Council. This is due to the fact that Dodoma City Council is one of the local government authorities in which there is the practice of public procurement audit. Furthermore, it was established that in recent years, the performance of local government authorities in Tanzania, exemplified by Dodoma City Council, has experienced a concerning decline, as evidenced by a 2021/2022 report from the Controller and Auditor General (CGA). Notably, the report revealed a stark reality—46% of the audited local government authorities were found to be non-compliant with audit requirements. This high rate of non-compliance indicates a systemic failure to adhere to proper financial and operational procedures, raising significant concerns about the transparency and efficiency of procurement processes within Dodoma City Council.

3.4 Study Population

Population is the target group to be studied or is the total collection of elements which we wish to make inferences (Creswell, 2014). The study population was all 137 staff (DCC Report, 2023).

3.5 Unit of Analysis

The unit of analysis refers to the specific entity or phenomenon that researchers focus on when conducting an empirical study or analysis. It is the primary unit that is being studied and measured in order to draw conclusions or make inferences about broader populations or phenomena (Cohen *et al.*, 2014). For the purpose of this study, the unit analysis of the study was senior employees' as well as operational employees.

3.6 Sample and Sampling Procedures

3.6.1 Sample Size

Sample size in research denotes the quantity of individuals or entities participating in a study. It holds significant importance in research design as it profoundly impacts the credibility and applicability of the results. The determination of sample size hinges on statistical factors and aligns closely with the study's specific objectives (Cohen *et al.*, 2014). For this study, the sample size is calculated using Slovine's formula, as referenced in Magigi (2015), with a 95% confidence level and a 5% margin of error (1 - 0.05). The formula is presented as follows:

$$n = \frac{N}{1 + N(e^2)}$$

Where: n = is number of sample (required)

N = Total population (137) and

e = Error tolerance (level) or margin of error (0.05)

$$137 / (1 + 137(0.05)^2) = 137 / 1.3425$$

$$= 102$$

The sample size of the study is 102 respondents. The sample size distribution in each respondent is shown in Table 1

Table 39: Sample Size Distribution

Departments	Population	Sample Size	Percent %
Procurement offices	16	12	11.8%
Operational staff	121	90	88.2%
Total	137	102	100%

3.6.2 Sampling Procedures

The researcher employed a proportionate stratified sampling procedure to ensure a representative selection of operational staff from user departments, acknowledging the equal chance for each stratum to contribute to the overall sample size. This approach entails dividing the population of operational staff into strata based on relevant characteristics, such as department or role, and then determining the sample size proportionally from each stratum.

Following the stratified sampling, a simple random sampling technique was implemented within each stratum to randomly select operational staff, ensuring that each individual within the stratum has an equal chance of being included in the study. This method aims to provide a comprehensive understanding of the perspectives and experiences of operational staff in Dodoma City Council regarding public procurement audit performance.

3.7 Data Collection Techniques

3.7.1 Questionnaire

Questionnaire was used to all respondents. In the process of collecting data through questionnaire, the researcher made an appointment with the respondents prior to the date of data collection. Upon such visitation, the researcher made some arrangements. The researcher used drop and pick method in the distribution of questionnaire. Questionnaire was used since it helped the researcher to get first-hand information for analysis. First-hand information for analysis is important since it is the information which was gathered directly from the respondents. Additionally, they are a quick way of getting results the researcher intends to get from the respondents.

3.8 Data Analysis Method

The data collected was checked to avoid any errors or omissions and ensure they are consistent. The data then coded into logical, descriptive, and meaningful categories to provide a framework for analysis. The coded data will then be entered into the computer for analysis by use of SPSS.

Quantitative data were analyzed through descriptive statistics and presented through percentages, means, standard deviations and frequencies. Multiple linear regression models were used to establish the relationship independent variables (Legal and regulatory framework, auditors' competence and procurement records management) and dependent variables (Public procurement audit performance). The following regression model was used

$$PPAP = \beta_0 + \beta_1 LRF + \beta_2 AC + \beta_3 PRM + \epsilon_i \dots \dots \dots (1)$$

Where;

PPAP= Public procurement audit performance

LRF = Legal and Regulatory Framework

AC = Auditor Competence

PRM = Procurement Record Management

β_0 = Constant

ϵ = Error

4.0 Findings and Discussion

This section present and discuss findings related to effect of legal and regulatory framework on public procurement audit performance.

4.1 Respondents' Demographic Characteristics

The findings in Table 4.1 reveal a workforce in procurement audits that is predominantly within the 26-35 (35%) and 36-45 (30%) age brackets, combining fresh perspectives and technological familiarity with experienced insights (Smith, 2013). The gender distribution shows 60% male and 40% female, contributing to diverse viewpoints, which can enhance the comprehensiveness of procurement audit assessments (Sandberg, 2015). Educationally, 50% of respondents hold a Bachelor's degree, and 25% have a Master's degree, highlighting a well-educated workforce essential for navigating complex procurement processes (Dessler, 2013). Additionally, 30% have 11-15 years of working experience, followed by 25% with 5-10 years, indicating a blend of expertise and depth in procurement practices (Jones & George, 2011).

Table 4.1 : Demographic characteristics of respondents (n = 100)

Age	Frequency	Percentage
18-25 years	10	10
26-35 years	35	35
36-45 years	30	30
46-55 years	15	15
56 years and above	10	10
Sex		
Male	60	60
Female	40	40
Level of education		
Diploma	20	20
Bachelor	50	50
Masters	25	25
Doctorate	5	5
Working experience		
Less than 5 years	15	15
5-10 years	25	25
11-15 years	30	30
16-20 years	20	20
More than 20 years	10	10

4.2 Descriptive Statistics Result for Legal and Regulatory Framework

This section presents the descriptive statistics results related to the legal and regulatory frameworks. The responses in each variable were summarized using mean score and standard deviation (Table 4.2).

Table 40.2: Legal and Regulatory Framework (n = 100)

Statement	Mean	Std. Deviation
There is compliance to the legal provision	4.40	.651
Auditing process requires right procedures to be followed as per PPA and its regulations	3.97	1.049
There should be transparency in the auditing procedure	3.94	1.135
Every member of auditing committee should be accountable	3.71	1.122

The

findings in Table 4.2 reveal that, strong agreement on the importance of compliance with legal provisions in procurement audits, with a mean score of 4.40, reflecting its critical role in audit effectiveness. Adherence to auditing procedures as per the Public Procurement Act (PPA) received a mean score of 3.97, though variability in responses suggests challenges in consistent application. Transparency in the auditing process, scoring 3.94, also shows moderate agreement, but with varying emphasis among respondents. Accountability of audit committee members, with a lower mean of 3.71, suggests it is less prioritized, with differing views on its current practice. Supported by Dionisjev (2020), the findings highlight that compliance with legal frameworks ensures fairness, transparency, and quality in public sector audits, reducing risks and enhancing financial integrity.

4.3 Multiple Regression Results

This section presented the multiple linear regression models that were used to establish the relationship independent variables (Compliance with legal provisions, auditing process procedures, transparency in the auditing procedure and accountability of audit committee members) and dependent variables (Public procurement audit performance).

4.3.1 Model Summary

Findings in Table 4.3 indicated that, The R Square value of 0.882 reveals that approximately 88.2% of the variance in the performance of public procurement audits can be explained by the combined effect of compliance with legal provisions, auditing process procedures, transparency in the auditing procedure and accountability of audit committee members. This implies that these factors play a significant role in influencing the effectiveness and efficiency of procurement audits in the studied context.

Table 4.3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.939	0.882	0.879	0.240

a. Predictors: (Constant), Compliance with legal provisions, auditing process procedures, transparency in the auditing procedure and accountability of audit committee members

4.3.2 Analysis of Variance (ANOVA) Results

The ANOVA results provided in Table 4.4 offer an evaluation of the overall significance of the regression model used to predict public procurement audit performance in local government authorities in Tanzania. The F-statistic of 240.164, which is the ratio of the regression mean square to the residual mean square, is significantly large. This high F-value indicates that the model explains a substantial amount of the variance in the dependent variable relative to the error variance. The associated p-value (Sig.) of 0.000 is less than the common alpha level of 0.05, suggesting that the regression model is statistically significant.

Table 4.4: ANOVA Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	41.394	3	13.798	240.164	0.000 ^b
	Residual	5.516	96	0.057		
	Total	46.910	99			

a. Dependent Variable: Public Procurement audit performance

b. Predictors: (Constant), Compliance with legal provisions, auditing process procedures, transparency in the auditing procedure and accountability of audit committee members

4.3.3 Regression coefficients

Table 4.5 presents the regression coefficients for independent variables.

Table 4.5: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

1	(Constant)	0.122	0.178		0.686	0.494
	Compliance with legal provisions	0.247	0.104	0.230	2.362	0.020
	Auditing process procedures	0.212	0.095	0.194	2.241	0.027
	Transparency in the auditing procedure	0.575	0.063	0.569	9.178	0.000
	Accountability of audit committee members	0.320	0.085	0.301	3.290	0.007

Dependent Variable: Public Procurement Audit Performance

The Findings in Table 4.5 reveals a positive relationship between compliance with legal provisions and public procurement audit performance, as indicated by the Beta coefficient = 0.247 and p-value=0,020, which implies that for every unit increase in compliance with legal provisions, public procurement audit performance increases by 0.247 units. The relationship is statistically significant ($t = 2.362$, $p = 0.020$), meaning that compliance with legal provisions is an important predictor of improved audit performance of local government authorities in Tanzania specifically in Dodoma city. The positive and significant relationship between compliance with legal provisions and public procurement audit performance is consistent with findings from similar studies. For instance, research by Mrope and Nkinga (2018) highlighted that compliance with procurement regulations is crucial for enhancing procurement audit quality, as it ensures that procurement activities adhere to established standards and guidelines.

Moreover, auditing process procedures also show a significant positive influence on public procurement audit performance, with a Beta coefficient = 0.212 and p-value=0.027. This indicates that an improvement in the auditing process procedures by one unit leads to a 0.212 increase in audit performance. The effect is statistically significant, suggesting that adherence to well-established audit procedures can enhance audit outcomes. These findings are echoed in other research. Muthaura (2017) argued that clearly defined and structured audit processes ensure the systematic evaluation of procurement activities, which leads to more accurate and reliable audit outcomes. Additionally, a study by Wang (2020) found that well-established auditing procedures allow auditors to detect discrepancies more efficiently, leading to better public procurement audit performance. These studies suggest that proper auditing procedures not only ensure thorough evaluations but also reduce the likelihood of audit errors, enhancing overall audit effectiveness.

Furthermore, transparency in the auditing procedure has the strongest positive influence on public procurement audit performance, with Beta coefficient = 0.575 and p-value=0.000. This means that an increase in transparency leads to a substantial 0.575 unit improvement in audit performance. The relationship is highly significant, indicating that transparency is a critical

factor in ensuring effective procurement audits of local government authorities in Tanzania specifically in Dodoma city. The findings aligns with findings from a number of other studies. For example, research by Al Mamun (2019) emphasized that transparency in auditing procedures fosters trust and accountability, which are essential for effective audit processes. A study by Ngari and Muturi (2020) similarly found that transparency reduces the chances of manipulation in procurement audits, improving the reliability of audit results. Both studies reinforce the idea that transparent auditing procedures ensure that all stages of procurement are conducted in an open manner, facilitating better oversight and enhancing audit performance. The significant impact of transparency in this study highlights its critical role in promoting accountability and accuracy in public procurement audits.

Additionally, the accountability of audit committee members has a significant positive impact on public procurement audit performance, as shown by the Beta coefficient = 0.320 and p-value=0.007. This suggests that greater accountability leads to a 0.320 unit increase in audit performance. The effect is statistically significant, highlighting the role of accountable committee members in improving audit outcomes of local government authorities in Tanzania specifically in Dodoma city. The findings is consistent with findings from prior studies. For example, research by Kinyua and Odhiambo (2020) found that accountability within audit committees leads to more diligent oversight of procurement activities, which improves the quality and accuracy of audit outcomes. Additionally, Nyamache and Mutua (2021) concluded that accountable audit committee members are more likely to enforce strict adherence to procurement standards, thus reducing instances of mismanagement or fraud in procurement processes. These studies support the conclusion that having accountable audit committee members is vital to ensuring that procurement audits are conducted effectively and that any irregularities are promptly addressed.

5.0 Conclusion and Recommendations

5.1 Conclusion

With regard to the effect of legal and regulatory framework on public procurement audit performance, the study concluded that legal and regulatory framework (Compliance with legal provisions, auditing process procedures, transparency in the auditing procedure and accountability of audit committee members) has important determinants of public procurement audit performance of local government authorities in Tanzania specifically in Dodoma

5.2 Recommendations

The Ministry of Finance and Planning, alongside the Public Procurement Regulatory Authority (PPRA), should continue to strengthen and update the legal and regulatory frameworks governing public procurement audits. Ensuring that these frameworks are aligned with international best practices and robust enough to address contemporary challenges is crucial for maintaining audit effectiveness.

5.3 Area for Further Studies

Future studies could explore various aspects to enhance understanding of public procurement audit performance in local government authorities. One potential area is the impact of

technological integration, such as e-procurement systems and big data analytics, on audit effectiveness.

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Factors Contributing to Non-Performing Loans of Special Groups in Dodoma City Council Tanzania

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Abstract

President's Office – Regional Administration and Local Government in Tanzania has prudently invested to issue 10% of their local collection to special groups in cities and municipalities and those members are availed with benefits when they fall due in the future. This paper investigated the factors contributing to non-performing loan of special groups in Dodoma city council. The paper employed a cross sectional research design and stratified sampling procedure was used in the selection of 90 respondents in the study area. Questionnaires were used in gathering data and multiple regression was used in analyzing the factors determining the non-performing loans among special groups in Dodoma city. The paper found out that, people are requesting loans in contrast to their income level hence diverting the amount on normal spending those economic activities analyzed on loan portfolio, individual are not equipped with relevant skills, large family size and youth have to be equipped with relevant attention due to their higher spending are factors leading to increasing trend of nonperforming loans among special groups In Dodoma city council. Therefore, recommended that the organization should limit investment in the loan portfolio by providing loans to the project with attractive returns but with low risks (minimal), to conduct constant monitoring and evaluation (investment auditing) for each investment as well as to equip loan/investment officer with different loan appraisal skills by ways of training.

Keywords: *Non-performing loans, special groups, Local Government Authorities, Dodoma City Council.*

1.0 Introduction

For a time, the cultural norms, beliefs and prejudices were hindering youth, women and people with disabilities are hindering them within the society to achieve access to financing and hence engage fully in economic production, these groups were neglected in loans and those managed to get through financial intermediaries the process were long with conditions. Due to the inabilities of these special groups to have access to funding the government of Tanzania found initiative through local government authorities to set 10% of their collections special for issuing loans to the special groups. Despite of the initiatives made by the government these loans are turning into non-performing loans over the years.

In 1993, the Government initiated a seed fund to economically uplift disadvantaged groups, particularly women and youths who lacked access to loans from financial institutions due to collateral constraints. The Parliament Standing Committee for Local Authorities, in one of a sitting deliberated and later directed the LGAs to contribute 10% of unprotected own sources to the Fund. As the directives lacked a legal base for compliance, not all LGAs could comply fully, and subsequently, in the year 2019, the Government amended the Local Government Finance Act, [CAP 290], and introduced Section 37A which mandates LGAs to allocate 10% of unprotected own source collection to the Fund. (KILANGI, 2019)

Further, PO-RALG requires loans to be issued with a distribution ratio of 40% to women, 40% to youths, and 20% to people with disability. The guidelines were further revised in 2021 (KILANGI, 2019). However, despite the commendable initiative, the Fund encountered numerous challenges, including misallocation of funds by respective Council employees or issuing loans to non-existing groups, nonperforming groups, and unqualified groups thus leading to loan repayment failures.

In response to the above challenges, on 29 March 2023, upon receiving the annual report from the Controller and Auditor General (CAG) for the financial year 2021/22, the President ordered a review of the loan disbursement procedure and to explore the possibility of use of banks to facilitate loan disbursement. Following this directive, the Prime Minister directed all LGAs nationwide to suspend issuing loans to special groups aiming to Controller and Auditor General GR/LGA/2022/23 101 provide time for the Government to establish a new system for issuing loans that will address the identified challenges by the CAG.

As of 30 June 2023, the Fund's net worth for 177 LGAs amounted to TZS 245.31 billion. Before the cessation of loan disbursements in April 2023, a total of 176 LGAs had already allocated TZS 62.69 billion to WYDF Account and issued loans of TZS 73.41 billion for the financial year 2022/23. (Kichere, 2024)

Globally, the rate on non-performing loans (NPL) in USA recorded to 5% of NPL on 2009, and 0.855% on 2019 and it has an on-going fluctuation over years (Bank, Bank Non-Performing Loans to Gross Loans for United States, 2023). (Bank, Bank Non-Performing Loans to Gross Loans for United States, 2023)the average of NPLs for 2022 based on 15 countries was 12.46 percent. The highest value was in Equatorial Guinea: 55.41 percent and the lowest value was in Botswana: 3.75 percent (bank, 2023)

CAG assessment on the performance of revolving fund distributed to women, youth and people with disabilities in 185 LGAs in 2020/21 revealed that, about 155 LGAs had not recovered most of the loans issued to these groups which owe TZS 47.01 billion. The CAG report 2021/22 further revealed that Revolving Fund for Women, Youth and People with Disability found that loan beneficiaries in 180 LGAs defaulted a total of TZS 88.42 billion. (Kichere, 2022)

It was also noted that, loan beneficiaries in 151 LGAs defaulted on loan payments totaling TZS 79.76 billion out of the loans issued, which remained unrecovered as of 30 June 2023 (of which TZS 27.67 billion was for loans issued in 2022/23) (Kichere, 2024)

It was noted that Dodoma city council had outstanding loans totaling TZS 420,993,000 in 2023 from 20 groups that ceased to operate business (Kichere, NATIONAL AUDIT REPORT, March 2024)

2.0 Literature Review

2.1 Theoretical Review

This study is guided by three theories namely asymmetric information, the financial instability theory and Transaction theory as discussed here below.

2.1.1 Asymmetric Information Theory

There is asymmetric information in a financial contract when the borrower has information that the lender ignores or does not have access to. This asymmetry concerns the lender whenever the borrower can use this information profitably and at the lender's expense, and is connected with three circumstances: the borrower violates the contract by hiding information about the characteristics and revenues of the project, the lender does not have sufficient information or control over the borrower to avoid cheating and there is debt repayment risk with the borrower having limited liability. Asymmetric information in can thus results in adoption of adverse selection, moral hazard or monitoring cost

A lender suffers adverse selection when he is not capable of distinguishing between projects with different credit risk when allocating credit. Given the two projects with equal expected value, the lender will prefer the safest one while the borrower the riskier one thus those undertaking risky activities will find it convenient to hide the true nature of the project and exploit the lender's lack of information. Moral hazard occurs when the borrower has the ability to apply the funds to different uses than those agreed upon with the lender, who is hindered by his lack of information and control over the borrower. As in the case of moral hazard, monitoring costs are tied to a hidden action by the borrower who takes advantage of his better information to declare lower-than-actual earnings. Adverse selection appears before the lender disburses the loan whereas moral hazard and monitoring costs appear after the capital has been conceded (Bebczuk, 2003)

Information asymmetry generally gives lenders a harder time in distinguishing between good credit risks and bad credit risks which in turn gives both an equal chance of being lent to. This may make the firms which are good credit risks more averse to borrowing due to the higher interest rates whereas the bad credit risks will be more willing to borrow as they would have expected to have been charged a much higher interest rate. This will in turn have an effect on the lender's portfolio as a larger proportion of the loans will consist of loans with a greater risk of default and in turn result in higher non-performing loans.

2.1.2 Credit Rationing Theory

Credit rationing a situation in which lenders are unwilling to advance additional funds to borrowers at the prevailing market interest rate – is now widely recognized as a problem arising because of information and control limitations in financial markets.

Broadly speaking, ‘credit rationing’ refers to any situation in which lenders are unwilling to advance additional funds to a borrower even at a higher interest rate. In the words of (M. Jaffee and F. Modigliani, 1969), pp. 850–1), ‘credit rationing is a situation in which the demand for commercial loans exceeds the supply of these loans at the commercial loan rate quoted by the banks. Key point to this definition is that changes in the interest rate cannot be used to clear excess demand for loans in the market. In essence, this definition treats credit rationing as a supply-side phenomenon, with the lender’s supply function becoming perfectly price inelastic at some point. If the projects that are being funded by the loan are not scalable, however, then a distinction must be made between a situation in which a lender eventually restricts the size of loan it will provide to any individual borrower and one in which ‘rationed’ borrowers are denied credit altogether.

This phenomenon arises in circumstances in which lending is not scalable. (Stiglitz, 1981) therefore define credit rationing as follows: We reserve the term credit rationing for circumstances in which either (a) among loan applicants who appear to be identical some receive a loan and others do not, and the rejected applicants would not receive a loan even if they offered to pay a higher interest rate; or (b) there are identifiable groups of individuals in the population who, with a given supply of credit, are unable to obtain loans at any interest rate, even though with a larger supply of credit, they would.

According to this definition, lenders fully fund some borrowers but deny loans to others despite the fact that the latter are identical in the lender’s eyes to those who receive loans. Thus, there are two working definitions of credit rationing in the literature. The first focuses on situations in which increases in the interest rate cannot clear excess demand in the loan market, whether this excess demand reflects a single borrower (who would like a larger loan amount) or many. Under this definition, rationing would exist if every potential borrower received a loan but a smaller one than that desired at the equilibrium interest rate.

2.1.3 Transaction Cost Theory

Transaction costs are costs incurred that don’t accrue to any participant of the transaction. They are sunk costs resulting from economic trade in a market. In economics, the theory of transaction costs is based on the assumption that people are influenced by competitive self-interest. In the context of lending, transaction costs include the costs of gathering information about borrowers, monitoring loans, and enforcing contracts. High transaction costs can influence the structure and terms of lending.

(Prakash Singh, 2019) the client transaction costs can become one of the important factors to evaluate transaction costs of the different models of microfinance. policymakers can use the findings to reduce the clients’ transaction costs by benchmarking best practices across all the

microfinance business models. Costs on loan acquisition has significance impacts on loan monitoring, uses and loan repayments.

2.2 Empirical Literature Review

Non-Performing Loans (NPLs) and their Causes

Non-performing loans (NPLs) have been a subject of interest in many economies, particularly in developing countries where financial institutions face challenges in maintaining loan quality. Several empirical studies have been conducted to investigate the factors contributing to NPLs.

A study by (Kithinji, 2010) in Kenya, for example, found that macroeconomic factors such as inflation and interest rates significantly influenced the level of NPLs. The study also highlighted that poor credit appraisal systems and ineffective monitoring of borrowers by financial institutions contributed to the rise of NPLs. Kithinji concluded that both internal bank practices and external economic conditions are key drivers of NPLs.

Similarly, (Fofack H. , 2005) explored the causes of NPLs in Sub-Saharan Africa and found that factors such as low economic growth, poor governance, and external shocks, such as fluctuating commodity prices, were major contributors. Fofack's study emphasized that in developing economies, external macroeconomic instability plays a significant role in determining loan repayment performance.

In the Tanzanian context, (Bofondi, 2011) analysed the banking sector and concluded that weak legal frameworks for debt recovery and inefficient banking practices exacerbated the problem of NPLs. Their study also highlighted the role of institutional factors, such as inadequate risk management frameworks, as key contributors to the accumulation of bad loans.

NPLs Among Special Groups (Women, Youth, and People with Disabilities)

Special groups, such as women, youth, and people with disabilities, face unique challenges in accessing and repaying loans. Studies indicate that these groups often experience higher levels of financial exclusion, which can result in higher default rates. (Morsy, 2020) found that financial literacy and access to credit training significantly affect loan repayment behaviour among women in rural areas of Egypt. The study showed that women with more financial knowledge and access to capacity-building programs were less likely to default on loans. This highlights the importance of financial literacy and education in reducing NPLs among special groups.

In Nigeria, (Aina, 2014) conducted research on the role of microfinance institutions in supporting youth entrepreneurship. The study revealed that youth borrowers faced higher default risks due to a lack of entrepreneurial experience and inadequate support from financial institutions. This led to an increase in NPLs within youth-targeted lending programs. The researchers recommended that financial institutions offer more training and mentorship programs to youth borrowers to help reduce the rate of defaults.

Another study by (Miller, 2021) in Uganda explored loan performance among people with disabilities. The study identified discrimination and lack of tailored financial products as major obstacles to successful loan repayment. People with disabilities were found to have fewer opportunities to generate income, making it harder for them to meet loan obligations. The authors recommended that financial institutions develop specialized loan products and provide support systems tailored to the needs of borrowers with disabilities to reduce the incidence of NPLs.

Financial Inclusion and NPLs

Several studies have explored the relationship between financial inclusion and NPLs, particularly in developing economies. (Kumar, 2016) in their study of Indian microfinance institutions, found that the expansion of financial services to previously unbanked populations led to a significant increase in NPLs. This was attributed to the fact that many of these new borrowers lacked the financial literacy and experience required to manage loans effectively. The study concluded that financial inclusion efforts should be accompanied by financial literacy training to mitigate the risk of loan defaults.

In a Tanzanian study, (Lotto, 2018) analysed the impact of financial inclusion programs on NPLs among rural populations. Lotto found that while financial inclusion initiatives improved access to credit for marginalized groups, they also led to an increase in NPLs due to inadequate financial literacy and poor loan management skills. The study recommended that financial institutions invest in financial education programs to reduce the risks associated with lending to financially excluded groups.

Loan Management Practices and NPLs

The management practices of financial institutions also play a critical role in determining the level of NPLs. (Makri, 2014) in a study of European banks, identified poor loan appraisal and inadequate monitoring systems as major causes of NPLs. The researchers found that banks that implemented rigorous risk assessment frameworks and monitored borrowers closely had lower levels of NPLs compared to those that did not.

A Tanzanian study by (Mwisho, 2001) explored loan management practices in the banking sector and found that inadequate credit appraisal, failure to follow up on loans, and weak enforcement of loan contracts were significant contributors to NPLs. Mwisho's study emphasized the need for banks to adopt more comprehensive risk management strategies and improve the supervision of borrowers to reduce default rates.

In the case of microfinance institutions (MFIs), (Chijoriga, 2011) examined loan default rates in Tanzania and found that poor loan management practices, coupled with a lack of borrower education, contributed to high NPLs. Chijoriga argued that financial institutions must improve their lending practices by conducting better due diligence and offering post-loan support to borrowers, particularly special groups.

Economic Factors and NPLs

Macroeconomic conditions, such as GDP growth, inflation, and unemployment rates, have been widely cited as key determinants of NPLs. (Nkusu, 2011) conducted an empirical analysis of macroeconomic factors affecting NPLs in developing countries and found that economic recessions, high unemployment rates, and inflation had a significant impact on loan default rates. The study concluded that improving the overall economic environment is critical to reducing NPLs.

Similarly, (Louzis, 2012) found that macroeconomic shocks, such as currency devaluation and economic slowdowns, had a strong influence on NPLs in Greek banks. This finding supports the argument that NPLs are not solely determined by borrower behaviour but are also affected by external economic conditions.

In the Tanzanian context, (Magali, 2014) explored the role of economic factors in determining NPL levels in rural SACCOS (Savings and Credit Cooperative Societies). The study found that poor economic performance in rural areas, coupled with unstable incomes, contributed to high default rates. Magali recommended that financial institutions develop more flexible repayment structures that account for fluctuations in borrowers' income, particularly for those in agriculture-dependent regions.

Empirical studies on NPLs provide valuable insights into the various factors that influence loan performance, particularly among special groups. From macroeconomic conditions and institutional practices to borrower characteristics and financial literacy, a range of factors contribute to NPLs. The literature suggests that reducing NPLs requires a multifaceted approach, including better risk management by financial institutions, targeted support for special groups, and improvements in financial literacy. While the empirical evidence from different regions highlights common challenges, there is a clear need for localized research to understand the specific factors affecting NPLs in contexts such as Dodoma City Council.

To conclude there is a research gap in sense that actors such as age, sex and gender was not into consideration and for the purpose of this study these actors will be analysed.

Research Methodology

3.0 Material and Methods

This section describes the research methodology which includes: research design, area of study, research approach, population, sample, sampling techniques, sample size, data collection methods and tools data analysis technique, reliability and validity of the instruments and ethical considerations.

3.1 Research design

Research design is the framework of research methods and techniques chosen by a researcher to conduct a study. The design allows researchers to sharpen the research methods suitable for the subject matter and set up their studies for success. This study has employed the cross-sectional research design to gather both quantitative and qualitative data. The quantitative

phase involves surveys and statistical analysis, while the qualitative phase includes interviews and focus group discussions.

3.2 Area of Study

In this research the area of study is Dodoma city council situated in Dodoma region Tanzania. Dodoma city council has population of 765,179 (statistics, 2022) Is located between Latitudes 6.000 and 6.300 South, and Longitude 35.300 and 36.020 East (municipal) covering approximately 41,311 square kilometres. Dodoma is selected as the area of study because it has substantial amount of NPL, up to February 2022 city executive director declared that only Tshs. 3,981,070,933.62 were paid by borrowers equal to 44.9%, there is 55.1% unpaid. (Vuai, 2022)

3.3 Population of the Study

Population of the study is a complete set of people/individuals with a specialized set of characteristics, the usual criteria of defining population is demographic (J.h.Sheldon, 2010). In this case the population was community development officers of Dodoma city council, DCC employees responsible with 10% loans for special groups and LGA's loan beneficiaries in Dodoma city council.

Also, I have included special groups within Dodoma City Council, including but not limited to women entrepreneurs, youth associations, and minority business owners.

3.4 Sampling Procedures

Sampling techniques are different methods of selecting individual members or subset of a population to make statistical inferences from them and estimate the characteristics of a whole population. (Fleetwood, 2022; Fleetwood, 2022). And in this study the stratified sampling and purpose sampling has employed in the selection of respondents. At the first time, the population was divided into different strata of youth, women and people of disabilities. From each stratum respondents were selected randomly. On the other hand, the purposive sampling was deployed in selecting area of study and Key informants.

3.5 Sample Size Determination

Sample size is number of individuals to be included in the research study and represent the entire population. It references a total number of respondents to be included in the study. In this study the sample size will be calculated by using Slovin's formula which is given as $n = \frac{N}{1 + Ne^2}$ where, N is population, e is margin of error and n is sample size.

$$N=111, e = 0.05$$

$$\text{Hence } n = \frac{111}{(1 + 111 * 0.05^2)}$$

Sample will be 89.4579055 = 90 respondents

Table 3.6: Sample distribution in the study area

special groups	TOTAL POPULATION	SAMPLE SELECTED
Youth	4511	$4511/8601 * 90 = 47$
women	3463	$3463/8601 * 90 = 36$
Group of disabilities	627	$627/8601 * 90 = 7$
TOTAL	8601	90

3.6 Methods of Data collection and Tools

Primary data

The primary data are those which are collected afresh and for the first time, and thus happen to be original in character. (Kothari C. , 2004). Primary data are usually collected from the source—where the data originally originates from and are regarded as the best kind of data in research. Questionnaire Method The structured and unstructured questions were used in the process of collecting primary data from the respondents. The *developed survey questionnaires* were covering factors such as economic status, social conditions, institutional support, regulatory environment, demographic information, financial literacy, and access to resources. The self-administered questionnaires were used in the collection of data from the study area

Documentary Review

The secondary data, on the other hand, are those which have already been collected by someone else and which have already been passed through the statistical process. (Kothari C. , 2004). For the purpose of this study secondary data were collected from previous reports, literatures, journals and other documents related to non-performing loans (NPL) issued by LGA's and other literatures sources including academic journals, books, reports, and articles, to gather insights and findings related to non-performing loans, financial inclusion, and special groups in the context of Dodoma City Council, also, reports and publications from Dodoma City Council, national government agencies, and relevant ministries. Look for data on financial inclusion programs, policies, and statistics related to special groups and non-performing loans

3.7 Variability and Reliability of Data in Research

3.7.1 Validity of Data

The validity of the study refers to the quality and instruments of the study are accurate, correct, and truly meaningful and right (Kothari C. R., 2014). To ensure validity, questionnaires were pre-tested by distributing them to statisticians and colleagues for piloting. Meanwhile the research consulted supervisor to cross check and make an amendment where necessary.

According to (R. Burke Johnson, 2017) consulting supervisors during the research process provides an additional layer of validation and expertise. Supervisors offer valuable insights, guidance, and feedback on the research design, methodology, and data analysis. They also help researchers identify any gaps or limitations in their study and suggest improvements to enhance the overall quality of the research.

3.7.2 Reliability of Data

Reliability refers to the extent to which the same answer can be obtained using the same instruments more than one time. And variability refers to an extent to which requirements of scientific research methods has been followed during the process of generating research findings. Reliability and validity of the research data will be ensured through various measures such as a pilot study, consistency in data collection process, and the use of a standardized questionnaire.

3.7.2.1 Reliability Test

Reliability is the stability and uniformity of measures or results over several administrations or observations. It is a vital component in determining the reliability and correctness of study findings. The internal consistency of instrument is measured by Cronbach's alpha coefficient, a commonly used indicator of reliability. It is generally agreed upon that a Cronbach's alpha level of 0.7 or higher indicates adequate reliability. This limit point indicates that the scale's elements are reliably measuring the same underlying concept. In essence, a Cronbach's alpha greater than 0.7 indicates a high level of internal consistency and a reliable correlation between the scale's items. Cronbach's Alpha is a measure of internal consistency, indicating how closely related a set of items are as a group.

In this study, the variables were categorized into different aspects of factors influencing non-performing loans among special groups in Dodoma city economic factor, social factor and demographic factors. and the Dependent Variable, which is the non-performing loans. Starting with economic factors (income level), it indicates that has high level of contribution to NPL,

Cronbach's Alpha values ranging from 0.824 to 0.854 represent the internal consistency and reliability of a scale measuring the relationship between the level of income and Non-Performing Loans (NPL) among a special group. 0.824 to 0.854, These values fall within the range that indicates good to very good reliability. A Cronbach's Alpha in this range suggests that the relationship between income levels and NPL are likely well-correlated and capture the underlying construct effectively.

Moving to the social factor (level of education) section, it is evident that engagement of education including special skills all have acceptable levels of NPL, with Cronbach's Alpha values ranging from 0.834 to 0.861 represent the internal consistency and reliability of a scale

measuring the relationship between the education level and Non-Performing Loans (NPL) among a special group

In the Follow-up demographic factors (age, gender and family size), Cronbach's Alpha values for age, gender, and family size are notably high, ranging from 0.844 to 0.887 represent the internal consistency and reliability of a scale measuring the relationship between age, sex, family size, and Non-Performing Loans (NPL) among a special group. These values fall within the range that indicates very good to excellent reliability. Values above 0.8 are considered good, and values closer to 0.9 indicate even better internal consistency.

Finally, the Dependent Variable, Non-performing loans, also demonstrates high internal consistency, with a Cronbach's Alpha value of 0.879 on the dependent variable Non-Performing Loans (NPL) among a special group indicates a high level of internal consistency and reliability of the scale used to measure NPL. also, A Cronbach's Alpha of 0.879 suggests that the items on scale are highly consistent with each other. The questions or items used to measure NPL are well-correlated and effectively capture the underlying construct of NPL among the special group.

3.8 Ethical Consideration

Ethical considerations in research refer to the principles and guidelines that researchers must follow to ensure their work is conducted with integrity, respect, and responsibility (Creswell, 2014). To comply with the ethical standards, the study considered informed consent, anonymity, plagiarism (25%), data protection, privacy and confidentiality, authorship, and publication issues. In that regard, the researcher ensured that respondents' personal information is kept confidential and that their identities are protected, unless explicit consent was given to disclose their identities. The research also maximized benefits and minimized any potential harm to respondents, all physical, emotional or psychological harm were avoided.

4.0 Findings and Discussion

The study aimed at investigating factors contributing to non-performing loans of special groups in Dodoma city council. The findings are presented in line with the specific objectives of the study which are articulated in chapter one. The data has been analyzed using Statistical Package for Social Science (SPSS) which made cross tabulation of variables very easy. Also views observed are presented as opinions.

4.1 Demographic Characteristics of Respondent

The characteristics analyzed in this study included age, default history, special groups loans experience, sex distribution and lending knowledge on special groups loans and non-performing loans of the same in Dodoma city council. The reviews of these characteristics provide insight to why the answers of the respondents may vary.

Table 4.2

Gender				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid male	48	53.3	53.3	53.3
female	42	46.7	46.7	100.0
Total	90	100.0	100.0	

4.2. Age and Gender of Respondents

The results from Table 4.2 indicate that, the males who participated in the study were many than females. About 53.3% of respondents were Male while female was 42 presenting 46.7% of the population. But this does not conclude that gender has impact on loan repayments on loans issued to special groups my municipal and city councils, also Table 4.3 indicates the age and gender distribution from which individual with highest response was age 20years -30 years was 37.8% it's because this group incorporate all youth, women and people with disabilities.

Table 4.2.1 age and gender distribution

characteristics		Frequency	Percent
Age group			
	Under 20	3	3.3
	20-30	34	37.8
	31-40	16	17.8
	41-50	28	31.1
	over 50	9	10.0
	Total	90	100.0
Gender			
	male	48	53.3
	female	42	46.7
	Total	90	100

Family Size

Under my study respondents with different family size was involved from which individual with 1-3 family size was 32.2% the same with 10 or more which was also 32.2%, the logic was to investigate the impact of family size on repayments or to assess the contribution of family size towards non-performing loans in Dodoma city council.

Family Size

	Frequency	Percent	Valid Percent	Cumulative Percent
1-3	29	32.2	32.2	32.2
4-6	10	11.1	11.1	43.3
Valid 7-9	22	24.4	24.4	67.8
10 or more	29	32.2	32.2	100.0
Total	90	100.0	100.0	

Table 4.2.4 Family Size

4.3 The influence of age, gender and family size on non-performing loans among youth, women and people with disabilities.

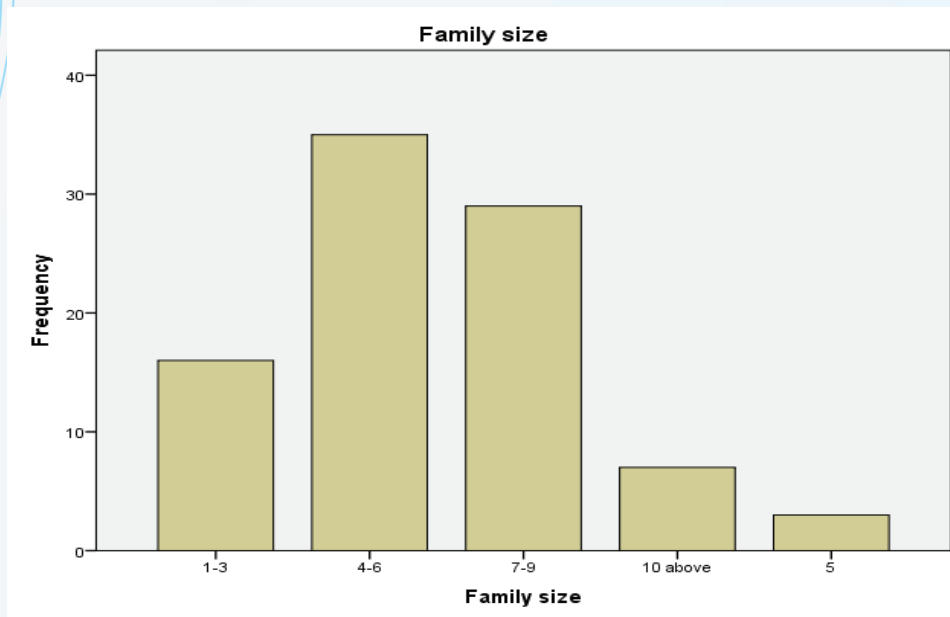
It was studied the influence of age, gender and family size on non-performing loans on loans issued with local government authorities using Dodoma city council as the case study. Participants with different age categories was involved as depicted on below summary

The age distribution of the sample population shows a strong concentration in the younger age brackets, particularly in the 20-30 age range. This indicates that the majority of the respondents are young adults, which may have implications for the analysis of non-performing loans, as younger individuals face different financial challenges compared to older age groups. Understanding the age distribution helps in tailoring financial education and support programs to meet the needs of the predominant age group.

Participants with age category 20 to 30 years of age was leading with 48.9% of all participants it is because these age categories incorporate all three groups youth, women and people with disabilities, also age category of 41-50 and over 50 years was 3.3% each.

The gender distribution of the sample population shows a slight male majority, with 53.3% of respondents being male and 46.7% being female. This relatively balanced gender distribution ensures that both male and female perspectives are adequately represented in the analysis. Understanding the gender distribution is crucial for tailoring interventions and support programs to address the specific needs and challenges faced by both genders.

Also, from the study participants with different family size were analyzed, the family size distribution shows a diverse range of family sizes among the sample population, with a significant concentration in the 4-6 members category (38.9%) and the 7-9 members category (32.2%). Smaller families (1-3 members) make up 17.8% of the sample, while very large families (10 or more members) represent 7.8%. Understanding the family size distribution was important for tailoring financial education and support programs, as family size can significantly impact financial needs and challenges, including loan repayment capabilities.



A multiple linear regression model was used for data analysis as expressed as: $Y = C_0 + C_1X_1 + C_2X_2 + C_3X_3 + \dots + C_xX_x$ where Y is the dependent variable (non-performing loans) X_1, X_2, X_x are the independent variables (age, gender and family size) and C_0, C_1, C_2, C_x are the unknown regression coefficients. The unknown coefficients are estimated based on n observation for the dependent variable Y , and for each of the independent variables (age, gender and family size).

Findings on the influence of age, gender and family size on non-performing loans is presented in below table,

Model Summary

Model	R	R Square	Adjusted Square	RStd. Error of the Estimate
1	.718 ^a	.647	.514	.272

a. Predictors: (Constant), Family size, Gender, Age

The model, which includes family size, gender, and age as predictors, performs well in explaining the challenges in repaying past loans. The high R Square and Adjusted R Square values indicate that these factors account for a significant portion of the variance in loan repayment challenges among youth, women, and people with disabilities. The low standard error further suggests that the model provides accurate predictions. However, there is still some variance unexplained, indicating that other factors not included in this model may also contribute to loan repayment challenges. Further research and additional variables may help in developing an even more robust model.

Correlation coefficient of 0.718, This represents the simple correlation between the observed and predicted values of the dependent variable. An R value of 0.718 indicates a strong positive correlation between the predictors (family size, gender, and age) and the challenges in repaying past loans and r square of (0.647): This value represents the proportion of variance in the dependent variable that can be explained by the predictors in the model. An R Square of 0.647 means that 64.7% of the variance in challenges in repaying past loans can be explained by family size, gender, and age combined.

4.4 Model Building and Assumption Test

When building a linear multiple regression models, several assumptions need to be considered to ensure the accuracy of results. (Gujarati, 2009) The assumptions include linearity, independence of errors, homoscedasticity, normality of errors, and absence of multicollinearity. Firstly, linearity assumes that there is a linear relationship between the independent variables and the dependent variable. Secondly, the independence of errors assumes that the errors are not correlated with each other. Homoscedasticity assumes that the variance of errors is constant across all levels of the independent variables. The normality of errors assumes that the errors are normally distributed.

Lastly, the absence of multicollinearity assumes that there is no strong linear relationship between the independent variables. These assumptions can be tested using various diagnostic tools such as scatterplots, residual plots, Durbin-Watson statistics, and tests for normality and multicollinearity (Hair *et al.*, 2010). Ensuring these assumptions are met is crucial for the reliability and interpretability of the results obtained from the multiple regression analysis. The assumption test is explained in this part of chapter four.

4.5 Test for Multicollinearity

The collinearity diagnostics table provides insights into multicollinearity issues within your regression model using **eigenvalues**, **condition indices**, and **variance proportions**.

Collinearity Diagnostics							
Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	Gender	Age	Family size
1	1	3.345	3.000	.01	.03	.01	.01
	2	.453	3.716	.01	.95	.03	.02
	3	.155	4.642	.00	.00	.46	.46
	4	.046	3.499	.99	.02	.50	.51

a. Dependent Variable: Ability to repay loan

The Gender variable has a high variance proportion of 0.95. This suggests that most of the variance in Gender is explained by this dimension, potentially indicating a relationship with other variables. both Age (0.46) and Family Size (0.46) have moderately high variance proportions, indicating some level of shared variance in this dimension. Age (0.50) and Family Size (0.51) again have high variance proportions, suggesting a moderate level of multicollinearity between these variables.

Gender shows a relatively high variance proportion (0.95) in Dimension 2, which might suggest it is highly related to another predictor in the model. However, the condition index value is low, so this does not pose a critical issue. The moderately high variance proportions for Age and Family Size in Dimensions 3 and 4 suggest that these variables are somewhat collinear with each other, but the condition indices are not high enough to warrant immediate action.

4.6 Test for Autocorrelation

Autocorrelation refers to the correlation of a variable with its own past values or residuals in a regression model. In simple terms, it's when the residuals (errors) from your regression model are not independent but instead follow a pattern, which violates one of the key assumptions of linear regression.

Autocorrelation is particularly common in time-series data, where the value of an observation may be influenced by its previous values. If autocorrelation is present, it can lead to, Inflated R-squared values: Making the model appear to fit better than it actually does. Underestimated standard errors: Leading to incorrect p-values and overconfident conclusions about the significance of the predictors. Biased parameter estimates: Leading to unreliable predictions.

Residuals Statistics					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.38	2.20	1.90	.179	90
Residual	-1.002	1.207	.000	.511	90
Std. Predicted Value	-2.887	1.676	.000	1.000	90
Std. Residual	-1.927	2.321	.000	.983	90

a. Dependent Variable: Ability to repay loan

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.843	3	.948	3.504	.019 ^b
	Residual	23.257	86	.270		
	Total	26.100	89			

a. Dependent Variable: Ability to repay loan

b. Predictors: (Constant), Family size, Gender, Age

The F-statistic (3.504) is a measure of the overall significance of the regression model. It tests whether the group of predictors explains a significant proportion of the variance in the dependent variable. The p-value (0.019) indicates the probability that the observed F-statistic could occur by chance if the null hypothesis is true. A low p-value suggests that the model as a whole is statistically significant. **Significance Level (Sig. = 0.019):** The p-value is less than the typical alpha level of 0.05, indicating that the regression model is statistically significant. This means there is evidence to suggest that the independent variables, when considered together, have a significant effect on the ability to repay the loan

Conclusion

The study found out that, special groups are requesting loans in contrast to their income level hence diverting the amount on normal spending those economic activities analysed on loan portfolio and hence failing on meeting loan commitments and turning loans into non-performing loans, individual are not equipped with relevant skills including lending and economic skills, large family size and youth have to be equipped with relevant attention due to their higher spending are factors leading to increasing trend of nonperforming loans among special groups In Dodoma city council.

5.0 Recommendations

This sub-section presents recommendations to various players in the lending decisions of special groups on loans issued by LGAs that include PMO - RALG, committee members, Government officials, business officers, and other participants, based on findings there off I recommends the followings,

Financial Literacy and Education Programs

Equipping individuals with the relevant financial skills to manage loans and spending effectively by Workshops and Seminars Conducting regular financial literacy workshops targeting different demographics, focusing on budgeting, saving, and responsible borrowing. Introduce financial education in schools to equip youth with financial management skills early

on. Also, by Utilizing community centers to hold informational sessions on loan management and financial planning.

Loan Assessment and Approval Processes

Ensuring loans are given based on the applicant's income level and ability to repay. Stringent Loan Evaluation by Implementing stricter assessment criteria that consider the borrower's income, existing financial obligations, and credit history. Income verification by requiring thorough income verification processes to prevent over-borrowing and through tailored loan products, also by Developing loan products tailored to specific income brackets, ensuring repayment terms are realistic and manageable.

Support for Large Families

Providing financial support and management skills to large families to reduce financial strain, Subsidized Financial Counselling through Offering subsidized or free financial counselling services to large families to help them manage their finances effectively, Family Support Programs including Introducing programs that provide additional financial support or benefits to large families, reducing the need for excessive borrowing also by Income-Generating Activities, Encouraging and supporting large families in engaging in income-generating activities to boost their financial stability.

Monitoring and Evaluation

Continuously monitoring the effectiveness of implemented strategies and make necessary adjustments. Regular Reviews, conducting regular reviews of loan portfolios to identify and address emerging trends of non-performing loans. Regularly assess the impact of financial literacy programs and other interventions on reducing non-performing loans, and establishing a feedback mechanism for borrowers to report challenges and receive timely support.

Collaboration with Financial Institutions

Working with financial institutions to develop borrower-friendly policies and practices. Collaborate with banks and microfinance institutions to offer flexible repayment plans that align with borrowers' income flows. Developing and implementing advanced risk assessment tools to better predict and manage potential defaults. Offering loan restructuring options for borrowers facing genuine financial difficulties, reducing the likelihood of default.

Encouraging Participation in Business Training Programs

For LGAs and policymakers, has to highlights the importance of providing or encouraging participation in business training programs as a means to improve loan repayment rates. Supporting such training initiatives could lead to better loan performance and reduced default rates.

Targeted Interventions: Lenders might consider making attendance at business training a part of the loan approval process, especially for new or struggling borrowers, to increase the likelihood of successful repayment.

Focus on Age and Gender

Since age has a stronger positive relationship with loan repayment ability, LGAs might give more weight to age in their credit assessment models.

Although gender has a smaller negative impact, it still provides useful information and should not be ignored entirely. LGAs can develop age-specific financial products or support programs to enhance repayment rates. Also Understanding the reasons behind the negative association with gender could help design interventions to support better repayment outcomes.

Consider Family Size:

LGAs should consider family size when assessing loan applications. Larger families might be at higher risk of loan default due to the increased financial burden.

- **Tailored Financial Products:** Developing loan products that offer more flexible repayment options or support for larger families could help mitigate the risk and support these families better.

Support Programs:

- **Financial Counseling:** Providing financial counseling and budgeting support specifically tailored for larger families could help improve their ability to manage finances and repay loans.

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Influence of Human Capital Management Information System on the Performance of Human Resource Functions: A Case of Dodoma City Council

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Abstract

This study evaluates the impact of the Human Capital Management Information System (HCMIS) on the performance of the Human Resource (HR) function, focusing on Dodoma City Council. A quantitative approach and cross-sectional design were employed, with the study grounded in the Resource-Based View theory and Task Technology Fit. Both primary and secondary data were gathered from Dodoma city Council staff and documents respectively. The study used the surveys and documentary reviews. Data analysis involved descriptive statistics and multiple regression. The findings indicated that payroll, employee database and reporting management had a positive and significant effect on the performance of the Human Resource. The study recommends that the government should strengthen HCMIS to improve HR performance. Additionally, future research should explore similar topic in different other regions, methods, and populations.

Keywords: *Human Capital Management Information System, Dodoma City Council and Human resources performance*

1.0 Introduction

Globally, Human Capital Management Information Systems (HCMIS) have emerged as part of the broader digital transformation in organizations. Initially, human resource (HR) functions were managed manually, creating inefficiencies in payroll, employee management, and performance evaluation (Kavanagh & Johnson, 2017). As technology advanced in the late 20th century, businesses increasingly adopted automated systems to streamline these processes.

Human Capital Management Information Systems (HCMIS) dimensions, including payroll, employee database, and reporting management, significantly influence HR performance by streamlining processes, improving accuracy, and enhancing decision-making. Efficient payroll systems reduce errors and ensure timely compensation, directly impacting employee satisfaction and organizational trust (Kumar & Singh, 2022). Employee database management facilitates better tracking of workforce skills, attendance, and career progression, enabling HR to allocate resources more effectively and support talent development (Mhando, 2023). Reporting management enhances HR analytics, providing insights into workforce performance and trends, which support data-driven decision-making and strategic planning (Gonzalez, 2021). This comprehensive integration of payroll, employee data, and reporting functions in HCMIS helps HR professionals focus on value-adding tasks, ultimately improving overall organizational performance (Nguyen *et al.*, 2023).

The evolution of human resource (HR) management in Tanzania has transitioned from traditional manual practices to a more advanced Human Capital Management Information System (HCMIS), driven by reforms and regulations. Traditionally, HR relied on paperwork for employee records, payroll, and performance evaluations, creating challenges in data management and decision-making (Mshiu, 2020). Recognizing the need for modernization, the Tanzanian government enacted the Public Service Act, 2002 (revised in 2006), establishing a foundation for professional HR management (United Republic of Tanzania, 2021). This was followed by the National Human Resource Development Strategy (NHRDS) in 2008, aimed at improving the quality of human capital through education and training to address labor market skills gaps (URT, 2021). The 2017 Human Resources Management Policy emphasized creating a skilled workforce fostered by National ICT Policy, 2016 and e-Government Strategy, 2012-2017 (Mshiu, 2020), and the Public Service Management and Employment Policy of 2018 promoted integrating technology in HR practices, advocating for HCMIS adoption to enhance efficiency (URT, 2022).

Human Capital Management Information Systems (HCMIS) significantly enhance HR performance across various regions, including the USA, UK, India, China, Australia, and Africa, by streamlining payroll processing, managing comprehensive employee databases, and facilitating efficient reporting. In the USA and UK, HCMIS implementations have led to improved payroll accuracy and compliance with labor laws, reducing administrative costs and enhancing employee satisfaction (Jain & Singh, 2023; Smith, 2022).

In India, companies are increasingly adopting cloud-based HCMIS to manage vast employee data, which aids in strategic decision-making and performance analytics (Kumar & Raghavan, 2024). China's focus on digitizing HR functions through advanced HCMIS has enabled real-time data access, significantly boosting organizational agility (Li et al., 2023). Meanwhile, in Australia, HCMIS has been instrumental in fostering a data-driven culture that supports workforce planning and performance management (Brown & Green, 2024). In Africa, the implementation of HCMIS in various sectors is gradually enhancing HR processes, though challenges such as infrastructure and skill gaps persist (Musa et al., 2024). Overall, HCMIS serves as a critical enabler of HR efficiency and effectiveness across these diverse regions.

In developing countries, however, Khashman & Al-Ameed (2018) found that adoption of HCMIS has been slower due to challenges like limited infrastructure, budget constraints, and a lack of skilled personnel. However,

HCMIS in Tanzania have become integral to the modernization of human resource (HR) functions across both public and private sectors (Mhando, 2021). These systems are employed to streamline HR processes such as payroll management, employee records, performance evaluations, and compliance with labor regulations, improving efficiency and decision-making. HCMIS implementations, particularly in public institutions, have shown notable success in reducing administrative burdens and enhancing data accuracy for strategic workforce planning (Mushi, 2022; Ngowi, 2023).

Despite these benefits, Mwakyembe, (2023), Chibanga (2021), Kibanda & Mwasaru (2022) stresses that challenges such as system integration issues and user resistance remain unaddressed. While past studies focused on specific functions like payroll or employee databases, few provide a holistic assessment of how HCMIS impacts HR performance in the public sector (Adom et al., 2020; Zhang et al., 2019). This study addresses this gap by investigating the influence of HCMIS on HR performance in Dodoma City Council. Given the increasing importance of digital systems, understanding how HCMIS can improve HR functions is crucial for enhancing public sector service delivery and governance in Tanzania.

2.0 Objectives of the Study

The general objective of this study was to assess the influence of human capital management information system on the performance of human resource function: A Case of Dodoma City Council

3.0 Literature Review

3.1.0 Theoretical Literature Review

3.1.1 Resource Based View Theory (RBV)

The RBV theory was developed by Jay Barney in 1991. It posits that a firm's gains a sustainable competitive advantage through using unique combination of resources. The theory assumes that resources are heterogeneously distributed and are stable over time, allowing for dissimilar performance (Barney, 1991). To gain the competitive edge, the resources must be valuable, rare, inimitable, and non-substitutable (Barney, 1991). The theory is relevant in describing HCMIS is seen as a valuable resource that enhances HR (Marler & Fisher, 2013). By effectively managing these HR functions via enhanced efficiency, reduced errors, and improved decision-making Thus, the RBV theory effectively explains how HCMIS, as a strategic resource, enhances HR

performance and contributes to sustained competitive advantage. However, RBV does not examine the technology fitness to task.

3.1.2 Task Technology Fit (TTF)

The TTF model, developed by Dale Goodhue and Ronald Thompson in 1995. The theory holds that the effectiveness of information technology (IT) is the function of the degree to which the technology fits the tasks (Goodhue & Thompson, 1995). The model assumes that for IT to enhance performance, it must be well-suited to the specific requirements of the tasks being performed. This implies that a good fit between technology and task will lead to improved performance and utilization, while a poor fit will result in reduced effectiveness and underutilization (Goodhue & Thompson, 1995). This makes the model practical for adoption. However, the model fails to consider individual differences among users (Zigurs & Buckland, 1998). The TTF model is highly applicable in explaining the influence of HCMIS on the performance of the human resource (HR) function.

3.2 Empirical Literature Review

Various studies linked the HCMIS and performance of HR functions. Zhang et al. (2019) in China found that efficient payroll management significantly enhances the overall performance of the HR function. Besides, Adom et al. (2020) in Ghana based on a mixed-method approach noted that organizations with modern payroll systems experienced fewer payroll-related disputes and higher employee satisfaction. It was concluded that technology could enhance payroll system. These observations were also noted by Ochieng and Wanjiru (2018) and Mboya et al. (2021) in Kenya who linked payroll improvement and the HR function performance. Likewise, Smith & Johnson (2015) found that employee database management had a positive effect on the HR performance in terms of recruitment and performance appraisal using a mixed-methods approach. Additionally, Brown and Williams (2017) noted that employee database management systems increased HR operational efficiency by 30%. The study was based on a longitudinal study design of 150 companies over five years. Therefore, it is unknown the extent results would change upon changing research approaches and research designs. Lee and Kim (2019) based on interview found that strategic use of employee databases enables better workforce planning and talent management. In the similar vein, Martinez and Garcia (2021) found that effective database management significantly enhances the accuracy and utility of HR metrics. Similarly, Davis and Thompson (2016) using a survey methodology found that organizations

utilizing advanced analytics tools reported a 40% improvement in the accuracy of HR reports. Likewise, Harris and Nguyen (2018) supported findings of Thompson (2016) by noting that HR analytics significantly improves recruitment, performance management, and succession planning. Furthermore, Roberts and Evans (2020) and Mitchell and Lee (2022) through combining quantitative surveys with qualitative interviews. Learned that the use of advanced analytics tools leads to more detailed and actionable HR reports. However, these studies were not based in Tanzania nor focused on the public sector like Dodoma city council.

4.0 Material and Methods

This study adopted a mixed approach. The mixed approach is suitable because it combines the strengths of both qualitative and quantitative methods, providing a comprehensive understanding of complex research problems by capturing both numerical data and in-depth insights (Kumar, 2019). The cross-sectional research design was chosen to capture data at a single point in time, providing a snapshot of the current situation within Dodoma City Council, which is essential for understanding its immediate needs and challenges (Kumar, 2019). Conducting the research in Dodoma City Council is justified due to its growing significance in Tanzania, making it a relevant context for examining the effectiveness of Human Capital Management Information Systems (HCMIS) (Mhando, 2023).

A purposive sampling method was employed to select respondents with specific expertise, including IT staff, Human Resources personnel, and accountants, ensuring that the sample accurately reflects the knowledge required to address the research objectives (Palinkas et al., 2015). Additionally, Purposive sampling is justified because it allows researchers to intentionally select participants who possess specific characteristics or expertise relevant to the research topic, ensuring the collection of rich, targeted, and insightful data from those most qualified to provide it (Etikan, 2023). Data collection utilized both primary and secondary sources through structured questionnaires, and documentary reviews, which provide a comprehensive view of the topic (Fowler, 2014).

Data analysis was performed using descriptive statistics and multiple regression analysis with SPSS version 23, allowing for a robust examination of correlations between variables and ensuring that the findings are statistically sound (Kothari, 2014). To guarantee the reliability of the research instruments, Cronbach's Alpha was used, as it is a well-established measure of internal

consistency, while content validity testing ensured that the questionnaire addressed all relevant topics related to employees' challenges in acquiring employment-related services (Tavakol & Dennick, 2011).

5.0 Findings and Discussion

5.1. HCMIS and Performance of Human Resource Functions

The descriptive statistics was used to determine extent of performance of human resource function is affected by HCMIS. The responses were rated using five-point Likert scale (5 = Strongly disagree, 4= Disagree, 3 = Neutral, 2 = Agree and 1= Strongly agree) See Table 1. The results presented indicate the perceptions of participants regarding the effectiveness of Database Management, Payroll Management, Reporting Management, and their collective impact on HR performance, with each dimension measured on a scale from 1 to 5.

Table 1: Descriptive statistics (n = 63)

	Database management	Payroll Management	Reporting Management		HR performance
N Valid	126	126	126		126
Missing	0	0	0		0
Mean	1.73	1.60	1.73		1.77
Std. Deviation	1.076	1.096	1.076		1.067
Minimum	1	1	1		1
Maximum	5	5	5		5

Interpretation of Results

The mean score for Database Management is 1.73 (SD = 1.076), indicating a low perception of its effectiveness in HR functions, with significant variation in responses. Payroll Management is viewed even less favorably, with a mean of 1.60 (SD = 1.096), suggesting concerns over accuracy and timeliness. Reporting Management has a similar mean score of 1.73 (SD = 1.076), reflecting dissatisfaction among participants.

HR performance shows a marginally better mean of 1.77 (SD = 1.067), yet remains low overall, indicating that improvements are needed across all areas. The low mean scores imply systemic issues that may stem from inadequate technology, insufficient training, or ineffective processes, with high standard

deviations highlighting mixed perceptions among respondents. Organizations should invest in robust HCMIS solutions and provide training for HR personnel, along with regular audits and employee feedback, to enhance HR effectiveness and stakeholder satisfaction.

Table 2: Regression Coefficients for HCMIS Aspects and the Performance of the HR Function

Model	Unstandardized Coefficients		Standardized T Coefficients		Sig.
	B	Std. Error	Beta		
(Constant)	1.722	0.134		12.845	0.000
Salary record	0.663	0.152	0.966	4.366	0.000
Deduction record	0.109	0.147	0.274	2.744	0.039
Bonus record	0.113	0.134	0.817	1.096	0.024

Dependent Variable: Performance of the human resource function
R-square =0.858
F- value = (89.65, P-value < 0.05)

Source: Field Data, (2024)

Findings in Table 3 show that all independent variables has a positive and significant effect as beta coefficient were positive and had p-value less than 0.05.

5.3. Influence of Employee Database Management on the Performance of HR Function

Table 3: Descriptive Result for Employee Database Management (n= 63)

Statements	Mean	Std. deviation
Access to Information	4.1905	1.33026
Data Accuracy	4.3333	1.28264
Storage	4.3175	1.34195
Database Usage.	4.3151	1.14758
Overall mean score	4.2891	1.27561

Source: Field Data, (2024)

The findings from Table 3 indicate a strong positive perception of employee database management's role in enhancing human resource (HR) functions. With an overall mean score of 4.29, respondents largely agree that easy access to comprehensive employee information significantly boosts HR efficiency (Mean = 4.19). The accuracy of work records is also highly valued for improving workforce planning (Mean = 4.33). Furthermore, storing performance reviews in the database is viewed as essential for ensuring fair evaluations (Mean = 4.32) and reducing biases in assessments (Mean = 4.32). These results align with the findings of Mwangi and Sato (2021).

5.5. Multiple Regression Results for Employee Database Management and the Performance of HR Function

Table 4. shows that $R^2 = 0.816$ which means that 81.6% of corresponding variations in performance of the HR function. The result implied that the model explained well the relationship between employee database management and performance of HR function by 81.6%. meanwhile the p-value overall was 0.000 signifying the significant change. All independent variables had a positive and significant effect on the HR functions as beta coefficients were positive and p-values < 0.05 .

Table 4: Regression Coefficients for Employee Data Base Management and Performance of the HR Function

5.6. Influence of Analytical and Reporting on the Performance of Human

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.689	0.119		14.224	0.000
Employee information	0.184	0.107	0.156	1.710	0.011
Work record	0.206	0.101	0.110	2.043	0.042
Performance review	0.132	0.078	0.129	5.501	0.000

Dependent Variable: Performance of the human resource function
R-square =0.816
F- value = (95.27, P-value < 0.05)

Resource Function

Table 5: Descriptive Result for Analytical and Reporting (n= 63)

<i>Statements</i>	<i>Mean</i>	<i>Std. deviation</i>
<i>Predictive analytics</i>	4.2429	1.37790
<i>Analytics capacity</i>	4.3889	1.57717
<i>Reporting ability</i>	4.1697	1.63831
<i>Training Need Indetification</i>	3.9857	1.50728
<i>Overall mean score</i>	4.1968	1.52517

Source: Field Data, (2024)

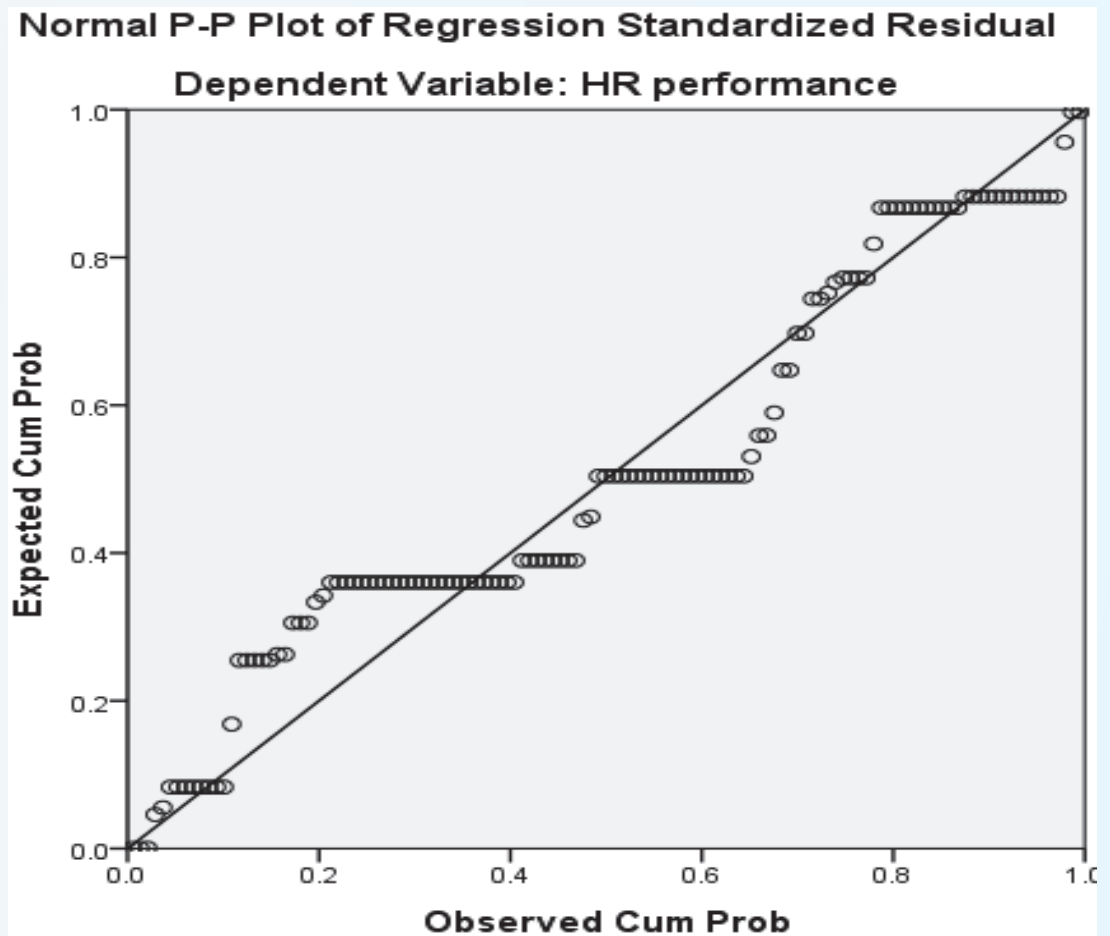
Table 5 shows that analytical and reporting practices received an overall mean score of 4.1968, indicating respondents' value predictive analytics and forecasting for future hiring. Predictive analytics scored a mean of 4.2429, highlighting its importance in planning, while workforce forecasting achieved a mean of 4.3889. Additionally, trend analysis for understanding employee turnover and identifying training needs received

high scores of 4.1697 and 3.9857, respectively. These findings align with Siti and Wong (2023).

5.7. Assumptions for Testing Multiple Regression

5.7.1. Linearity Testing

Regression summarizes the relationship between an independent variable (IV) and a dependent variable (DV) with a straight line, showing how changes in X affect Y. However, this relationship may not always be linear and can include both linear and non-linear elements. The correlation coefficient and slope are reliable only for the linear portion, which may increase the risk of Type II errors for the IV and Type I errors (overestimation) for other IVs in multiple regression. A more effective method for assessing these relationships is to examine residual plots, which show standardized residuals against standardized predicted values and are available in most statistical software.

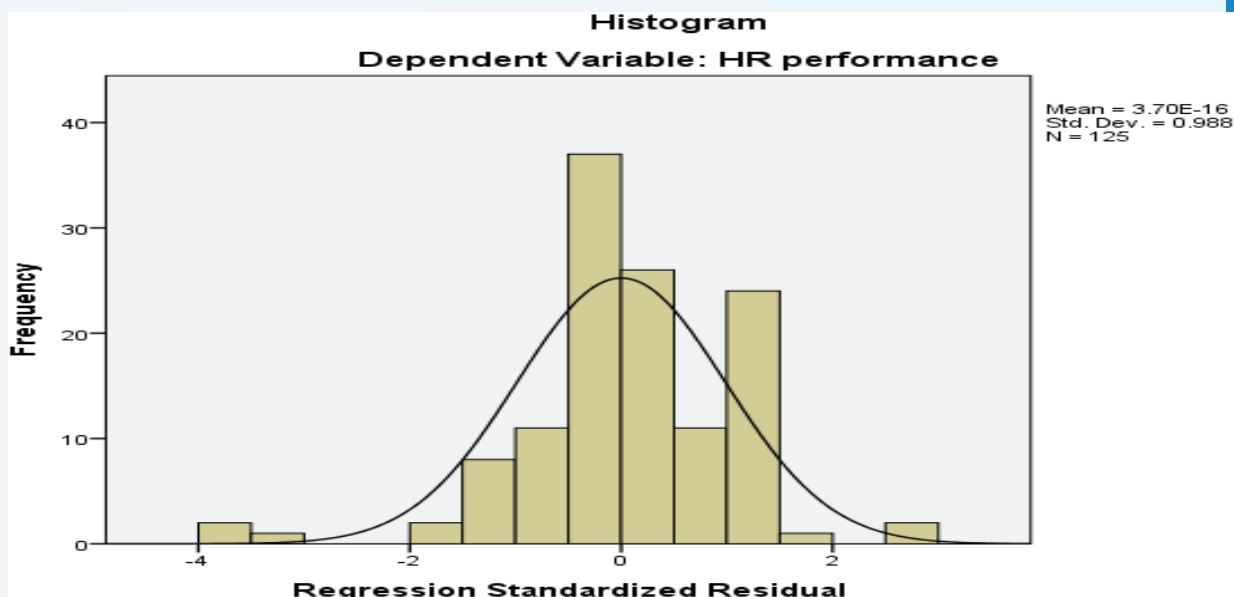


Source: Researcher Constructs (2024)

ii. Normality Testing

In multiple regression, the normal distribution assumption applies only to the residuals, not to the independent variables, which is a common misconception. Residuals represent the errors between observed and predicted values, and it is their distribution that should be normally distributed across the sample. Additionally, multiple regression assumes that the independent variables are not highly correlated with one another to avoid multicollinearity issues.

Figure 2: Histogram of Normality of Data of Variables



Multicollinearity

This assumption is verified using Variance Inflation Factor (VIF) values. Scholars recommend measuring multicollinearity with tolerance or VIF; a tolerance value below 0.20 or 0.10, or a VIF of 5 or above, indicates a multicollinearity issue. The results showed no multicollinearity among the independent variables, with tolerance indexes ranging from 0.771 to 0.701 and VIF below 1.428. Tolerance reflects the variability of independent variables not explained by others (Hair et al., 2010). VIF is calculated as the inverse of tolerance (Kumar, 2019), and multicollinearity occurs when tolerance is between 0 and 1. Hair et al. (2010) recommend cutoff values of 0.10 for tolerance and 10 for VIF, noting that tolerances above 0.5 may complicate regression coefficient interpretation (Tabachnick & Fidell, 2013). Multicollinearity tests were conducted, as shown in Table 6.

Table 6: Results of Multicollinearity Test

Model Variables	Collinearity statistics	
	Tolerance	VIF
Payroll Management	0.131	7.610
Database Management	0.148	6.753
Reporting Management	0.139	7.206

iv. Autocorrelation Testing

Another multiple regression assumption is autocorrelation, which must be minimal for valid data analysis. Autocorrelation occurs when residuals interact with each other, affecting the results due to their lack of independence (Hair et al., 2010). The Durbin-Watson statistic ranges from 0 to 4, with values near 2 indicating no autocorrelation,

and a value of 2.0 is the standard benchmark. In this study, the Durbin-Watson test yielded 2.114, indicating no autocorrelation problem.

Table 6 reported $R^2=0.734$ which means that 73.4% of corresponding variations in performance of the human resource function. The overall p value of 0.000 implied that change was significant. Individual independent value had a positive and significant effect.

Table 6: Regression coefficients for analytics reporting and the performance of human resource function

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	1.899	0.101		18.840	0.000
Analysis of employee performance	0.124	0.099	0.199	1.254	0.014
Forecast future workforce needs	0.382	0.102	0.594	3.742	0.000
Trend analysis	0.215	0.105	0.349	2.045	0.044
Dependent Variable: Performance of human resource function					
R-square =0.734					
F- value = (72.13 , P-value < 0.05)					

Findings in Table 6 indicated that, the beta coefficient for analysis of employee performance is 0.124 with a p-value of 0.014. This indicates that a unit increase in analysis of employee performance is associated with a 12.4% increase in the performance of the HR function. Moreover, findings in Table 14 indicated that the coefficient for forecast future workforce needs is 0.382 with a p-value of 0.000. This means that a unit increase in forecast future workforce needs is associated with a 38.2% increase in the performance of the HR function. Furthermore, findings in Table 14 indicated that the coefficient for trend analysis is 0.215 with a p-value of 0.044. This indicates that a unit increase in trend analysis is associated with an 21.5 % increase in the performance of the HR function.

6.0 Conclusions of the Study

The study found that, there was positive and significant relationship between payroll management within human capital management information system and the performance of human resource function. Therefore, the study concludes that, payroll management is important aspect of human capital management information system that influence performance of human resource functions in selected public institution in Dodoma City Council.

Moreover, the study found that, there was positive and significant relationship between employee database management within human capital management information system and the performance of human resource function. Therefore, the study concludes that, employee database management is another important aspect of human capital management information system that influence performance of human resource function in selected Public Institution in Dodoma City.

Furthermore, the study found that, there was positive and significant relationship between analytics and reporting within human capital management information system and the performance of human resource function. Therefore, the study concludes that, analytics and reporting management is another crucial aspect of human capital management information system that influence performance of human resource functions in selected Public Institution in Dodoma City.

7.0 Limitations of the Study

The study examining the influence of Human Capital Management Information Systems (HCMIS) on human resource performance in Dodoma City Council faced several limitations. Firstly, focusing on a single local government context restricts the generalizability of the findings to other regions or sectors in Tanzania, indicating a need for broader research. Secondly, reliance on self-reported data raises concerns about biases, as respondents may provide socially desirable answers. The cross-sectional design limits insights into long-term impacts or trends associated with HCMIS implementation. Additionally, challenges with technological infrastructure and access to data likely hindered the depth of analysis, underscoring the need for future research that addresses these limitations and employs longitudinal approaches.

8.0 Recommendations of the Study

Based on the findings, the researcher recommends that the government implement an automated and integrated payroll system to ensure accurate and timely salary disbursements, minimizing errors associated with manual processes. Additionally, effective employee database management should be centralized and well-maintained to streamline HR activities and facilitate quick access to employee records. The government should also leverage advanced data analytics tools to provide HR departments with insights into workforce trends and performance metrics. Implementing a comprehensive reporting system that generates real-time, customizable reports can aid in strategic planning and decision-making. Furthermore, training HR personnel in data analytics is essential to maximize the benefits of these tools.

9.0 Suggestion for Further Research

While this study offers valuable insights into the challenges of implementing HCMIS in Dodoma City Council, its findings may not be fully generalizable to all public institutions in Tanzania. To enhance understanding of HCMIS implementation challenges across the public sector, the researchers recommend expanding the study to include public institutions in other major cities, which would help determine if the challenges identified in Dodoma are consistent elsewhere. Additionally, a comprehensive study involving all public institutions that have adopted HCMIS, not just early adopters, would provide a fuller picture of sector-wide challenges. Integrating qualitative and quantitative approaches in future research could validate current findings, using in-depth interviews with ICT experts and system beneficiaries to gather diverse insights.

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Influence of Decision-Making Style on Employee Performance from TEMESA

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Abstract

This study focused on examining the influence of decision-making style on employee performance within the Tanzania Electrical, Mechanical, and Electronics Services Agency (TEMESA). Utilizing a mixed-methods approach, the research combined quantitative surveys and qualitative interviews to gather comprehensive data. A sample of 135 employees was selected through simple random sampling, while key informants, including managerial staff and supervisors, were chosen purposively. Data collection involved structured questionnaires for employees and semi-structured interviews for key informants. The analysis employed descriptive and multiple regression techniques to evaluate the impact of decision-making styles on employee performance. The findings indicated that decision-making style significantly affects employee performance, with timely and participatory decision-making positively influencing performance outcomes. The study also identified issues such as limited employee involvement in decision-making and unclear instructions, which adversely impacted performance. The research underscores the importance of adopting effective decision-making styles to enhance employee performance and provides recommendations for improving decision-making processes within TEMESA. This contribution adds valuable insights to the literature on employee performance in public sector organizations.

Key words: *Decision-making style, Employee performance*

3. Introduction

Decision-Making Style refers to the approach or method used by individuals or groups to make decisions. It encompasses how decisions are made, including the processes and strategies involved. Decision-making styles can vary, such as being participatory (involving input from others), autocratic (centralized decision-making by one person), or consultative (seeking advice but making the final decision independently). The style used can influence how effectively decisions are made and their outcomes.

Employee Performance refers to how well employees carry out their job responsibilities and tasks. It includes various aspects such as productivity, efficiency, quality of work, and the ability to meet goals and objectives. Employee performance can be affected by multiple factors, including the decision-making processes within the organization. High performance is often characterized by employees meeting or exceeding their job expectations and contributing positively to organizational goals. Decision-making styles significantly influence employee performance, particularly within public sector organizations, where the alignment between leadership and decision-making is essential for organizational effectiveness (Ali et al., 2021; Pizzolitto et al., 2023). Employee performance, including efficiency, productivity, and the fulfillment of job responsibilities, is often impacted by how decisions are made at various organizational levels (Dastane, 2020). Decision-making styles, whether participative, autocratic, or consultative, shape employee behavior and can either enhance or inhibit their performance depending on how they are involved in the process (Shafique & Beh, 2017).

In public organizations, such as the Tanzania Electrical, Mechanical, and Electronics Services Agency (TEMESA), decision-making plays a pivotal role in navigating the complex bureaucratic environment and resource constraints (Amegayibor, 2021). Established in 2005, TEMESA is tasked with providing critical services in the fields of electrical, mechanical, and electronics engineering, functioning under the Ministry of Works (URT, 2023). The agency faces various challenges, including limited resources, bureaucratic inefficiencies, and high employee turnover, all of which can negatively impact employee performance (Ali et al., 2021; Amegayibor, 2021). Effective decision-making is essential in overcoming these challenges, as it allows leaders at TEMESA to optimize resource allocation, motivate employees, and enhance organizational performance (Pizzolitto et al., 2023). Participative decision-making, which involves employees in the process, has been shown to foster a sense of ownership and responsibility among employees, ultimately improving performance (Shafique & Beh, 2017). On the other hand, autocratic decision-making may be necessary in situations requiring quick, authoritative actions, but its overuse can lead to reduced employee morale and engagement (Ali et al., 2021).

Understanding the influence of decision-making styles on employee performance at TEMESA is vital to addressing performance gaps and promoting organizational success. As observed in other public organizations globally, the shift towards more inclusive decision-making practices has yielded positive outcomes, such as increased employee satisfaction, higher efficiency, and improved service delivery (Bunjak et al., 2022). In the case of TEMESA, adopting the appropriate decision-making style that

aligns with both organizational goals and employee needs is crucial for enhancing performance and achieving long-term success.

4. Literature Review

This section encompasses the theoretical framework, as well as a review of various relevant literature and the study's conceptual framework.

The theoretical review of the study is based on Contingency Theory, Transformational Leadership Theory, and Transactional Leadership Theory. Contingency Theory highlights the need for leadership styles to adapt to situational factors for effectiveness (Fiedler, 2015), while Transformational Leadership Theory emphasizes inspiring and motivating employees to exceed organizational goals (Burns, 1978). These theories collectively suggest that effective decision-making and leadership styles depend on context, supporting the study's objective of examining their influence on employee performance within TEMESA.

The literature review plays a pivotal role in shaping the study, providing insight into the problem domain, discussing prior research, identifying knowledge gaps, and setting the study's objectives. Effective decision-making processes are crucial for enhancing employee performance and organizational outcomes. Ullah et al. (2022) investigated the influence of authoritative and laissez-faire leadership styles on employee performance within the Board of Intermediate and Secondary Education in Peshawar, Pakistan. The study found that authoritative leadership, which involves decisive and clear decision-making, positively impacted employee performance. This highlights the necessity for leaders to adopt decision-making styles that are clear and decisive to enhance performance.

Haq and Kuchinke (2016) also focused on the relationship between leadership styles and employees' attitudes towards their leaders in the banking sector of Pakistan. The study revealed that transformational leadership, which encourages participative decision-making, substantially improved employee performance. On the other hand, laissez-faire leadership, characterized by a lack of decision-making, did not impact performance, indicating that effective leadership requires active involvement in decision processes.

The conceptual framework for this study examines the influence of decision-making styles on employee performance at TEMESA. Decision-making styles are identified as the independent variable and are measured through employee involvement in decision-making processes, and the timeliness of decision-making. Employee performance, the dependent variable, is measured through key indicators such as

productivity and adherence to deadlines. Research indicates that involving employees in decision-making fosters engagement, job satisfaction, and a sense of ownership, leading to improved performance (Fagaloa, 2022; Bunjak et al., 2022). Timely decision-making reduces uncertainty, allowing employees to execute tasks efficiently and confidently, thus enhancing productivity (Lewis et al., 2004; Nuhu, 2010). Moreover, clear communication and effective information flow within the decision-making process positively impact employees' understanding of expectations and enable them to perform better (Chua et al., 2018; Mwiandi, 2012). Therefore, the framework posits that decision-making styles, particularly those involving employee participation and timeliness, are critical determinants of performance outcomes at TEMESA.

5. Research Methodology

This part encompasses the of research design, area of the study, sampling procedure, targeted population, sample size and sample selection, the research instruments to be used, procedures for data collection, data analysis, reliability and validity of research instruments, and ethical issues to be considered.

The study adopted mixed approach where both qualitative and quantitative techniques were applied. The rationale for using the mixed approach is that, the method appropriates for studying the complex relationships and it allows the examination of both the experiences/perception and numerical data on the matter under study.

The study is centered on the headquarters of the Tanzania Electrical, Mechanical, and Electronics Services Agency (TEMESA) in Dodoma. TEMESA is a crucial public agency responsible for maintaining government infrastructure such as motor vehicles, ferry services, and electrical systems in government buildings. This setting offers a valuable opportunity to explore the influence of decision-making styles on employee performance within a key organization that supports government operations. Dodoma, as Tanzania's administrative hub, is ideal for studying leadership dynamics in public sector institutions like TEMESA (Henn et al., 2015).

This study used a cross-sectional research design. Data was collected from the study area at one point in the given study area. In a cross-sectional study, the researcher measures the outcome and the exposure of the study participants at the same time (Setia, 2016). This type of research design provided meaningful information to a group of people and was done in a smalltime frame.

For this study the target population included all leadership management and employees of TEMESA in Dodoma (Creswell, 2009). Sampling techniques involved simple random sampling for general employee respondents and purposive sampling for key

informants such as department heads and senior managers. The sample size was determined using the Yamane formula (1967), with the total population being 202 employees. A sample size of approximately 134 employees was calculated, reflecting a balance of representativeness and statistical precision for reliable results (Yamane, 1967).

The study employed a combination of qualitative and quantitative methods to collect data. In-depth interviews with key leaders and managers provided valuable insights into decision-making practices and their effects on employee performance. Additionally, focus group discussions with employees were conducted to gather diverse viewpoints on how decision-making styles influence their job satisfaction and performance. Quantitative data was collected using a structured questionnaire survey distributed among TEMESA employees, which included both closed- and open-ended questions to measure the impact of decision-making styles on various performance metrics. Supplementing these methods, a documentary review of TEMESA's organizational reports, performance evaluations, and other relevant documents was performed to further analyze the relationship between decision-making styles and employee performance.

Furthermore, the study employed both qualitative and quantitative data analysis methods. Qualitative data were transcribed, coded, and analyzed thematically from in-depth interviews with managerial staff and supervisors, while document reviews supported content analysis. Quantitative data from questionnaires were cleaned and organized before being analyzed using descriptive statistics, including percentages and means. The study utilized a Multifactor Leadership Questionnaire (MLQ) to assess organizational structure's impact on performance, and logit regression and ordinary least squares (OLS) regression models to examine how decision-making styles affected employee motivation, job satisfaction, and performance metrics. This comprehensive approach provided valuable insights into the relationship between decision-making styles and employee performance at TEMESA.

6. Findings and Discussion

This part presents analysis and discusses the findings of the study. Section one has a description of the demographic characteristics of respondents. Section two represents the findings on the specific objectives which answer the research questions of the study.

The findings show that the respondents' demographic characteristics reveal a diverse workforce profile. The majority of participants were male (62.2%) compared to female respondents (37.8%), suggesting a gender imbalance that may impact leadership

dynamics and gender-sensitive management practices (Ali et al., 2021; Omar et al., 2022). Age distribution showed that 43.0% of respondents were between 38-47 years old, with the majority being middle-aged, which reflects a stable and experienced workforce (Oyewobi, 2022; Llorens et al., 2018). This demographic composition may influence decision-making styles and their impact on performance.

Education levels varied significantly, with 57.8% holding university degrees, indicating a highly educated workforce (Dulewicz & Higgs, 2005; Gemeda & Lee, 2020). The majority had 3-5 years of working experience (50.4%), which highlights a blend of both newer and seasoned employees, essential for organizational knowledge and development (Nuhu, 2010; Oyewobi, 2022). These characteristics are crucial for understanding how decision-making styles affect performance across different employee profiles within TEMESA.

The influence of decision-making style on employee performance

The second specific objective of this study aimed to explore the influence of decision-making style on employee performance within TEMESA. Decision-making style plays a crucial role in shaping organizational culture, employee engagement, and overall performance outcomes (Asrar, 2017). This objective seeks to provide insights into effective decision-making practices that can enhance organizational effectiveness.

The findings of the study regarding the influence of decision-making style on employee performance are presented in Table 3, providing valuable insights into the relationship between decision-making style and employee performance within TEMESA.

Table 41: Influence of decision-making style on employee performance

	Statement/items	Agree		Neutral		Disagree	
		F	%	F	%	F	%
1	Employees are involved in decision-making processes	67	49.6	23	17.0	45	33.3
2	Decision-making processes consider input from employees.	71	52.6	21	15.6	43	31.9
3	Employees have opportunities to contribute ideas and suggestions.	66	48.9	36	26.7	33	24.4
4	Decision-making is timely, with quick resolutions to issues.	31	23.0	17	12.6	87	64.4
5	Decisions are made promptly, without unnecessary delays.	43	31.9	56	41.5	36	26.7

6	Decision-making processes are efficient and streamlined.	81	60.0	13	9.6	41	30.4
7	Employees receive timely feedback on their suggestions.	30	22.2	67	49.6	38	28.1
8	Decisions are communicated promptly to relevant parties.	44	32.6	71	52.6	20	14.8
9	There is transparency in decision-making processes.	70	51.9	21	15.6	44	32.6
10	Employees feel empowered to participate in decision-making.	54	40.0	58	43.0	23	17.0
11	The organization values employee input in decision-making.	74	54.8	19	14.1	42	31.1
12	Decision-making processes are inclusive of diverse perspectives.	56	41.5	68	50.4	11	8.1
13	Employees perceive decision-making processes as fair and inclusive.	61	45.2	51	37.8	23	17.0

The findings presented in Table 4 concerning objective two, which focuses on the influence of decision-making style on employee performance, reveals several key insights into the organizational dynamics within TEMESA. The Likert-scale statements assessed various aspects of decision-making processes and their impact on employee performance.

Employees are involved in decision-making processes:

Findings in Table 3 reveals that 49.6% of respondents agreed that employees are involved in decision-making processes, while 33.3% disagreed. This finding suggests that there is moderate involvement of employees in decision-making within TEMESA. This result aligns with previous research by Ali et al. (2021), which emphasized the importance of employee involvement in decision-making for project success. However, the disagreement from a significant portion of respondents indicates a potential area for improvement in enhancing employee participation in decision-making processes. Organizations that involve employees in decision-making tend to have higher levels of job satisfaction and organizational commitment (Dastane, 2020), implying potential benefits for TEMESA if employee involvement is increased.

Further finding regarding decision-making processes shows that the majority (52.6%) agreed that decision-making processes consider input from employees. This suggests a relatively positive perception of employee input in decision-making within TEMESA. This finding resonates with the literature, as studies by Gemedu and Lee (2020) have shown that considering employee input in decision-making can lead to

higher levels of work engagement and positive outcomes. However, the proportion of respondents who disagreed (31.9%) indicates that there may be room for improvement in ensuring that employee input is consistently valued and incorporated into decision-making processes. Another Key Informant said that;

"Through various joint meetings in the office, we endeavour to receive input from every employee, even if they are security guards" (Key Informant, 2024)

Moreover, findings show employees have opportunities to contribute ideas and suggestions as reflected in Table... that nearly half of the respondents (48.9%) agreed that employees have opportunities to contribute ideas and suggestions. This indicates a moderately positive perception of the availability of opportunities for employee input within TEMESA. This finding is consistent with research by Bunjak et al. (2022), which suggests that organizations that provide opportunities for employee input tend to foster a culture of innovation and creativity. However, the proportion of respondents who disagreed (24.4%) suggests that there may be barriers or limitations preventing some employees from contributing their ideas, highlighting a potential area for improvement.

Only 23.0% of respondents agreed that decision-making is timely, while the majority (64.4%) disagreed. This indicates a significant perception among respondents that decision-making processes lack timeliness within TEMESA. This finding is consistent with the literature, as delays in decision-making can hinder organizational effectiveness and employee productivity (Fagaloa, 2022). The implications of this result suggest the need for TEMESA to streamline its decision-making processes to enhance efficiency and responsiveness to issues.

Similar to the previous statement, a significant proportion (64.4%) disagreed that decisions are made promptly, indicating a perception of delays in decision-making within TEMESA. This finding underscores the importance of timely decision-making, as delays can lead to missed opportunities and decreased employee morale (Oyewobi, 2022). The disagreement from the majority of respondents highlights a critical area for improvement in ensuring that decisions are made promptly to support organizational agility and effectiveness.

A majority (60.0%) agreed that decision-making processes are efficient and streamlined. This suggests a positive perception of the efficiency of decision-making within TEMESA. Efficient decision-making processes are crucial for organizational performance and competitiveness (Shafique & Beh, 2017). This finding aligns with previous research highlighting the importance of streamlining decision-making processes to enhance organizational effectiveness (Liphadzi et al., 2015). However,

the proportion of respondents who disagreed (30.4%) indicates that there may be opportunities for further improvement in enhancing the efficiency of decision-making processes.

Only 22.2% of respondents agreed that employees receive timely feedback on their suggestions. This indicates a perception among respondents that feedback on employee suggestions is lacking within TEMESA. Timely feedback is essential for employee development and motivation (Ullah et al., 2022). The disagreement from the majority of respondents suggests a potential gap in communication and feedback mechanisms within the organization, highlighting an area for improvement to enhance employee engagement and satisfaction.

A significant proportion (52.6%) agreed that decisions are communicated promptly to relevant parties. This suggests a positive perception of communication effectiveness within TEMESA regarding decision outcomes. Prompt communication of decisions is essential for organizational transparency and alignment (Asrar, 2017). This finding is consistent with previous research emphasizing the importance of timely communication in organizational decision-making (Johnson & Christensen, 2019). However, the proportion of respondents who disagreed (14.8%) indicates that there may be instances where decision communication is not effectively executed, highlighting a potential area for improvement.

More than half (51.9%) agreed that there is transparency in decision-making processes. This indicates a moderately positive perception of transparency within TEMESA regarding decision-making. Transparency in decision-making fosters trust and accountability within organizations (Rotberg, 2012). This finding aligns with previous research highlighting transparency as a key factor in effective decision-making processes (Llorens et al., 2018). However, the proportion of respondents who disagreed (32.6%) suggests that there may be perceptions of opacity or ambiguity in certain decision-making processes, emphasizing the importance of enhancing transparency to build trust and confidence among employees.

Forty percent of respondents agreed that employees feel empowered to participate in decision-making. This suggests a moderate perception of employee empowerment within TEMESA. Empowering employees in decision-making can lead to increased job satisfaction and organizational commitment (Bunjak et al., 2022). This finding is consistent with previous research emphasizing the importance of employee empowerment for organizational performance (Amegayibor, 2021). However, the proportion of respondents who disagreed (17.0%) indicates that there may be barriers

or limitations preventing some employees from feeling empowered to participate in decision-making, highlighting a potential area for improvement.

A majority (54.8%) agreed that the organization values employee input in decision-making. This indicates a positive perception of the organization's recognition of employee contributions within TEMESA. Recognizing and valuing employee input can enhance organizational commitment and engagement (Fries et al., 2021). This finding is consistent with previous research highlighting the importance of valuing employee input for organizational success (Cosmas, 2018).

Overall, the findings from Table 3 highlight both strengths and areas for improvement in decision-making processes within TEMESA. While there are positive perceptions regarding employee involvement and the value of employee input, challenges exist concerning the timeliness of decisions, transparency, and inclusivity. Addressing these challenges could enhance organizational effectiveness and employee satisfaction, ultimately contributing to improved performance and outcomes.

7. Conclusion and Recommendation

Conclusion

The study on the influence of decision-making style on employee performance at TEMESA reveals several critical insights. It highlights the significance of clear and consistent decision-making processes, which are essential for optimizing employee performance. The findings indicate that while employee involvement in decision-making is generally positive, inconsistencies and delays in the decision-making process, coupled with communication breakdowns, negatively impact performance. Addressing these issues by refining decision-making styles to ensure clarity and timeliness can significantly enhance employee efficiency and commitment.

Furthermore, the study emphasizes the need for improved communication strategies within TEMESA. Effective communication processes, including clear information flow and feedback mechanisms, are crucial for reducing misunderstandings and fostering a collaborative work environment. By promoting a culture of inclusivity and transparency in decision-making, TEMESA can better engage employees and boost overall performance. These findings suggest that TEMESA's focus on enhancing decision-making practices and communication systems will be pivotal in achieving better performance outcomes and organizational success.

Recommendation

To enhance employee performance at TEMESA, the Government and Ministry of Works, Transport, and Communications should focus on several key areas. First, improving clarity in organizational structures by defining job roles and updating these as needed will help align employees with organizational goals. Promoting inclusive decision-making by involving employees in decision processes can boost ownership and accountability. Investment in communication training and tools, as well as establishing clear feedback mechanisms, is crucial for effective information sharing and performance evaluation. Encouraging transparency in decision-making and fostering interdepartmental collaboration will also enhance employee engagement. Lastly, prioritizing employee well-being and implementing continuous improvement initiatives will contribute to sustained organizational success.

Limitation to the Study and Areas for Further Research

Future research on the influence of decision-making styles on employee performance at TEMESA could benefit from several additional areas of focus. First, examining the impact of different decision-making styles, such as participative versus autocratic, on employee motivation and productivity within TEMESA could provide deeper insights into how these styles influence performance outcomes. Second, investigating how feedback mechanisms, including performance appraisals and employee surveys, affect employee perceptions and performance could reveal strategies for improving these processes. Lastly, exploring the relationship between employee engagement and organizational culture, particularly focusing on factors like leadership behavior and communication practices, could offer valuable information on how to enhance employee motivation and performance.

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Determinants of Non-Performing Loans for Selected Savings and Credits Cooperative Societies in Dodoma District Council

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Abstract

The study aimed to evaluate the determinants of non-performing loans (NPLs) for selected SACCOS in Dodoma District Council, Tanzania. It focused on assessing the effects of leverage, member growth, deposit-to-asset ratio, and management efficiency on NPLs. Using a cross-sectional survey design, quantitative approach, and simple random sampling, the study relied on financial reports from 2018 to 2022. Data was collected through document reviews and surveys, with analysis methods including Descriptive statistics analysis, Correlation analysis, multiple Linear Regression, and the Hausman test. The findings showed that leverage, deposit-to-asset ratio, management efficiency, and member growth significantly impacted NPLs. It was finally, recommended that lax lending should be avoided to lower NPLs among selected SACCOS in Dodoma City.

Keywords: *Non-performing loans, SACCOS, Dodoma District Council*

1.0 Introduction

1.1.Introduction to the Problem

Savings and Credit Cooperative Societies (SACCOS) are essential in the microfinance sector, addressing financial needs in underserved communities (Anania & Gikuri, 2015). Their goals include creating employment, reducing poverty, supporting business growth, empowering marginalized groups, and promoting new ventures (Abebe & Kegne, 2023). SACCOS provide crucial access to financial services for those excluded from traditional banking.

In Tanzania, the cooperative movement began in 1925 with the Kilimanjaro Native Planters Association, and the first SACCOS, the Tanganyika Ismailia Savings and Credit Cooperative Society, was established in 1938 (Eyraud et al., 2021; Anania & Gikuri, 2015). However, the number of registered SACCOS has sharply declined from 6,138 in 2018 to 1,900 in 2022 (WOCCU, 2023). A major challenge for SACCOS, as

well as financial institutions worldwide, is the issue of Non-Performing Loans (NPLs). Factors contributing to rising NPLs has been linked to a multitude of factors, such as poor loan appraisal processes, weak credit risk management, ineffective recovery strategies, and adverse macroeconomic conditions (Samoei, Makokha, & Gregory, 2018; Ozili, 2019). This accumulation of NPLs jeopardizes the financial stability of SACCOS and their capacity to serve their members.

The International Monetary Fund (IMF) and World Bank stress the need for effective loan portfolio management and robust risk management to combat the detrimental effects of NPLs on financial stability and economic growth (IMF, 2017; World Bank, 2018).

In Tanzania, the Bank of Tanzania (BoT) reported an increase in the NPL ratio for Microfinance Institutions, from 6.3% in December 2018 to 8.3% by December 2019, due to weak appraisal and recovery practices (BoT, 2019). While the problem of NPLs is recognized, further investigation into the specific determinants affecting SACCOS is needed. Understanding these factors will help SACCOS devise targeted strategies to manage loan portfolios effectively, enhancing their financial stability and ability to contribute to economic development.

1.2 Statement of the Problem

The primary function of Savings and Credit Cooperatives (SACCOS), which are microfinance institutions, is to promote modest savings and provide loans to individuals who lack access to formal financial services, irrespective of their income levels (Kadaga, 2020). However, a significant issue facing SACCOS worldwide is the prevalence of non-performing loans (NPLs), which jeopardize financial stability and hinder their ability to provide affordable credit (Moti et al., 2012). The World Bank (2021) reported a global NPL average of 6.78%, with Africa at 11.55% and Tanzania experiencing 8.34% from 2011 to 2020 far exceeding the recommended threshold of 5% (BoT, 2020).

In the Dodoma District Council, SACCOS play a crucial role in enhancing financial inclusion, particularly for low-income and marginalized groups. Nevertheless, the rise in NPLs poses serious concerns regarding their sustainability and operational efficiency. Notably, the number of registered SACCOS in Dodoma City has plummeted from 186 in 2017 to just 59 by late 2022 (TCDC, 2022), primarily due to high NPL levels. This decline can be directly attributed to among other factors, is the high levels of non-performing loans (TCDC, 2022)

This study aims to identify the factors contributing to NPLs in SACCOS within Dodoma City, which could impair their ability to manage loan portfolios effectively. Addressing this issue is crucial to reducing loan defaults and financial losses, ultimately safeguarding the economic empowerment of SACCOS members. Although existing research has explored NPL determinants in the banking sector, limited studies have focused specifically on SACCOS. This research seeks to fill that gap by examining the unique factors that influence NPLs in Dodoma City.

1.3 Literature review

1.3.1 Theoretical Literature Review

1.3.1.1. Credit Risk theory

Credit risk theory, established by researchers like Altman (1968) and Merton (1974), offers a framework for assessing the likelihood of default in lending activities. This theory posits that various elements such as borrower traits, economic conditions, and lender-specific factors affect the risk of loan defaults and non-performing loans. Altman (1968) proposed that credit risk can be evaluated through financial ratios and quantitative measures, which can be integrated into a credit risk model to forecast default probabilities. Merton (1974) introduced structural models, which assess credit risk by examining a firm's asset value, debt commitments, and asset return volatility. In the context of SACCOS, credit risk theory can help identify the factors contributing to non-performing loans by analyzing aspects such as borrower creditworthiness, economic conditions, and the cooperative's lending practices and risk management strategies.

1.3.1.2. Agency theory

Agency theory, introduced by scholars like Jensen and Meckling (1976) and Eisenhardt (1989), explores the principal-agent relationship and the conflicts of interest that can arise between them. When the interests of the principal (e.g., shareholders or members) and the agent (e.g., managers) diverge, the agent may act opportunistically, prioritizing personal gain over the principal's interests. To address these agency problems, mechanisms such as incentive alignment, monitoring, and control systems can be implemented (Eisenhardt, 1989). In the context of SACCOS, agency theory helps analyze conflicts between members (principals) and management (agents), and it identifies strategies to align their interests, promoting effective governance that can impact lending practices and the occurrence of non-performing loans (NPLs).

1.3.2. Empirical Literature

The link between leverage and non-performing loans (NPLs) has been widely examined across various financial contexts. Research by Makri et al. (2014) in the Eurozone indicated a significant positive correlation between leverage and NPLs, suggesting that higher leverage ratios lead to increased loan defaults. Ghosh (2015) found similar results in the U.S. banking sector during the 2007-2009 financial crisis. However, the relationship is nuanced, influenced by economic conditions. Louzis et al. (2012) found that in Greece, the impact of leverage on NPLs varied with economic stability; during growth periods, leveraged banks managed debts more effectively, while downturns saw higher NPLs associated with high leverage.

In Africa, Ouedraogo and Sawadogo (2019) noted a similar positive relationship in West African banks, while Kodithuwakku (2015) confirmed this in Sri Lanka. Research on leverage's impact on NPLs in SACCOS is limited but includes Nawai and Shariff (2010), who found a significant positive effect in Malaysian SACCOS. In Tanzania, studies primarily focus on commercial banks, with Kingu et al. (2018) confirming that leverage impacts NPLs, leaving a gap in SACCOS-specific research.

Likewise, membership growth in financial institutions, including SACCOS, has been linked to NPLs. Fofack (2005) found that rapid growth in membership correlated with higher NPLs in sub-Saharan Africa, attributing this to challenges in credit risk management. Similarly, Louzis et al. (2012) reported that increased membership strain operational capacities in Greece, leading to poor loan appraisals and recovery.

Ouedraogo and Sawadogo (2019) confirmed this trend in West African banks, emphasizing the need for institutions to scale operations effectively. Niyonzima and Imanishimwe (2016) also noted a positive correlation between membership growth and NPLs in Rwandan microfinance. However, literature on this topic within SACCOS remains sparse. Nawai and Shariff (2010) highlighted significant challenges in managing loan portfolios amid membership growth in Malaysian SACCOS. In Tanzania, there is a notable lack of studies focusing on membership growth's impact on NPLs in SACCOS, as most research has concentrated on the banking sector.

1.4 Research Objectives

- i. To examine the effects of leverage on non-performing loans (NPL) among selected SACCOS in Dodoma City
- ii. To evaluate the influence of the growth of members on non-performing loans (NPL) among selected SACCOS in Dodoma City.
- iii. To establish the influence of deposit-to-asset ratios on non-performing loans (NPL) among selected SACCOS in Dodoma City
- iv. To investigate the effect of management efficiency on non-performing loans (NPL) among selected SACCOS in Dodoma City

2.0 Material and Methods

2.1. Research Philosophy

Research philosophy refers to a set of assumptions guiding the creation of knowledge (Saunders, 2019). This study adopts positivism, valuing the quantitative method. Positivism is justified by its relevance to studying the effects of leverage and membership growth on non-performing loans (NPLs) among SACCOS in Tanzania.

2.2. Research Approach

The study used a quantitative approach, collecting numerical data to analyze relationships between variables and test hypotheses (Creswell & Plano Clark, 2018). Quantitative methods are ideal for phenomena measured numerically, requiring analysis of variables to produce results (Pandey et al., 2023).

2.3. Research Design

A cross-sectional design was adopted to analyze the determinants of NPLs in SACCOS within Dodoma City. This descriptive design allowed for systematic data collection to describe the factors associated with the research problem (Neuman, 2014).

2.4. Study Population, Study Area, Unit of Analysis, and Unit of Inquiry

2.4.1. Study Population

The population included all registered SACCOS in Dodoma District Council, with 59 SACCOS registered by the third quarter of 2022 (TCDC, 2022).

2.4.2. Study Area

The research took place in Dodoma City, Tanzania's capital, focusing on selected SACCOS. Dodoma was chosen due to a significant decline in registered SACCOS from 186 in 2017 to 59 in 2022 (TCDC, 2022).

2.5. Sample Size and Sampling Procedures

2.5.1. Sample Size

The sample size, determined using the Yamane (1967) formula, resulted in a sample of 51 SACCOS.

$n = N / (1 + N(e)^2)$ where $N = 59$ and $e = 0.05$.

2.5.2. Sampling Procedures

Simple random sampling was used to select SACCOS, ensuring unbiased respondent selection from a homogenous population (Kumar, 2019).

2.6. Data Type and Source

The study used secondary data from financial reports and primary data collected through questionnaires. Secondary data offer cost-effective trend analysis.

2.7. Data Collection Methods

Data collection involves gathering relevant information to address the research problem (Saunders et al., 2016). This study relied primarily on documentary review and surveys.

2.7.1. Documentary Review

Secondary data, such as audited financial statements, were used as a source for the study.

2.7.2 Survey (Questionnaires)

Structured questionnaires were distributed to key informants to collect data on NPLs from the selected SACCOS.

2.8. Data Collection Tools

Checklists and structured questionnaires were used to gather relevant numerical data on leverage, membership growth, and financial indicators.

2.9. Data Analysis

Data were organized using descriptive statistics, including percentages and means. Correlation analysis and Multiple linear regression were applied to analyze leverage, membership growth, and NPLs.

2.10. Reliability and Validity of Data

Cronbach's alpha was used to ensure reliability, evaluating the consistency of questionnaire items.

2.11 Ethical Considerations

Ethical principles were upheld, with informed consent sought from participants through detailed explanations and written consent forms.

3.0. Results

3.1. Descriptive Statistics

Table 1: Descriptive Statistics

<i>Variable</i>	<i>Obs</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
Leveragede~a	251	0.443	0.1223	0.16	0.67

N0 of members	251	2107.033	1419.696	67	5121
Deposit-to-asset ratio	251	0.4325	0.109	0.12	0.61
Management efficiency	251	3.6917	1.1402	1.1	6.7
NPL gross	251	0.22267	0.3241	0	1

Table 1 Table 2 Leverage has a mean of 0.16 minimum and 0.67 Maximum while the overall mean was 0.443 and a standard deviation of 0.1223. On the other hand, the deposit-to-asset ratio has a minimum of 0.12 and a maximum of 0.61 and the overall mean was 0.4325 with the smallest standard deviation of 0.109%. The standard deviation was very large (0.109%). This observation implies that the mean of deposit to asset ratio had a small standard deviation because SACCOS had insignificant differences in terms of deposit-to-asset ratio, results revealed that the deposit-to-asset ratio influences the NPL of SACCOS. A number of members has a minimum mean of 67 and a maximum of 5121 while the overall mean was 2107.033 with standard deviation of 1419.696. This large standard deviation and broad range suggest significant diversity in membership size across the SACCOS. Such variability may play a key role in understanding how the number of members influences non-performing loans (NPLs), as larger or smaller membership bases could impact loan demand. The Management efficiency has minimum of 0.11 and maximum of 6.7, the overall mean was 3.6917 with the smallest standard deviation of the 1.1402%. The standard deviation was very large (1.1402%). This observation implies that the mean of the management efficiency had a small standard deviation because SACCOS had insignificant differences in terms of the management efficiency. These results revealed that Management efficiency influences the NPL gross of SACCOS. The NPL has minimum of 0 and maximum of 1.0 on the other hand, the overall mean was 0.22267 with the smallest standard deviation of the 1.14%. The standard deviation was very large (1.14%). This observation implies that the mean of the NPL loans had a small standard deviation because SACCOS had insignificant differences in terms of the NPL loans. Regardless the NPL loans of the SACCOS, results revealed that the NPL loans has changes as other variables change.

3.2. Correlation Analysis

Table 2: Correlation Analysis

	Leverage	N0. Members	Deposit Ratio	Management Efficiency	NPL Gross
Leverage	1				
N0. of Members	0.1269	1			
Deposit ratio	-0.4689	0.3687	1		

Management Efficiency	0.117	0.0478	-0.4246	1	
NPLs gross	0.3814	0.2354	-0.4093	-0.6713	1

Table 2 Correlation among independent variables and dependent variable

This study used Pearson's Correlation Coefficient to measure the strength and direction of the linear relationship between independent and dependent variables. Pearson's correlation values range from -1 to +1, where +1 indicates a perfect positive relationship, -1 signifies a perfect negative relationship, and 0 suggests no linear association. A weak correlation is identified with values between 0.1 and 0.29, a moderate correlation between 0.3 and 0.49, and a strong correlation with values greater than 0.5. The direction of the relationship depends on the sign of the coefficient; a positive sign indicates that both variables move in the same direction, while a negative sign means they move in opposite directions. Pearson's correlation was used in this research to assess the level and direction of association between the variables, with findings analyzed accordingly.

3.3 Multiple Linear Regression

Table 3: Regression analysis

(n = 251)

Source	SS	df	MS			
Model	.592871554	4	.148217888	Number of obs = 139		
Residual	.516089567	134	.003851415	F(4, 134) = 38.48		
Total	1.10896112	138	.00803595	Prob > F = 0.0000		
				R-squared = 0.5346		
				Adj R-squared = 0.5207		
				Root MSE = .06206		

<i>nplgross</i>	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
<i>leveragedebt</i>	-.1535006	.0440998	-3.48	0.001	-.2407223	-.0662788
<i>noofmembers</i>	-2.79e-07	3.61e-06	-0.08	0.939	-7.42e-06	6.86e-06
<i>deposittoassetratio</i>	.3906837	.0429512	9.10	0.000	.3057336	.4756337
<i>managementefficiency</i>	-.0206708	.0061302	-3.37	0.001	-.0327952	-.0085463
<i>_cons</i>	.3726263	.0321974	11.57	0.000	.3089454	.4363071

Table 3 The Multiple linear Regression

The multiple regression analysis for the determinants of non-performing loans (NPLs) indicates that leverage, deposit to asset ratio, and management efficiency are significant predictors of NPLs, while the number of members is not. Leverage has a negative and significant effect on NPLs (coefficient = -0.1535, p = 0.001), meaning that higher leverage reduces NPLs. The deposit to asset ratio has a positive and significant impact (coefficient = 0.3907, p = 0.000), showing that an increase in this ratio leads to higher NPLs. Management efficiency also has a significant negative effect (coefficient = -0.0207, p = 0.001), suggesting that improved management

efficiency lowers NPLs. However, the number of members does not have a significant influence on NPLs (coefficient = $-2.79e-07$, $p = 0.939$). Overall, the model explains 53.46% of the variance in NPLs,

3.4 Fixed effect Regression

This type of model is used to control for unobserved heterogeneity when this heterogeneity is constant over time and correlated with the independent variables. It essentially controls for time-invariant characteristics of the individuals or entities in the panel data. Table R of the fixed effect regression shows that the **Adjusted R-Squared (within) = 0.8085** whereas the overall probability was **$P > F = 0.0000$** . A p-value of 0.0000 indicates that the model is highly significant. This means that there is strong evidence against the null hypothesis, which shows that debt to assets and deposit to assets ratio had p-value of 0.0000. Therefore, these two predictors significantly associated with the NPL among selected SACCOS. An adjusted R-squared of 0.8085 means that approximately 80.85% of the variation in the NPLs within the groups is explained by the model

Table 4: Fixed effect Regression

Fixed-effects (within) regression			Number of obs = 95			
Group variable: comapanyid			Number of groups = 19			
R-sq: within = 0.8085			Obs per group: min = 5			
between = 0.0003			avg = 5.0			
overall = 0.0898			max = 5			
corr(u_i, Xb) = -0.8866			F(4, 72) = 75.99			
			Prob > F = 0.0000			
np1	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
leveragedebt	-.5089033	.1410621	-3.61	0.001	-.7901055	-.227701
n0ofmembers	-.0001002	.0000504	-1.99	0.051	-.0002007	2.52e-07
deposittoassetratio	.3073951	.083067	3.70	0.000	.1418041	.4729861
managementefficiency	-.0176849	.0126765	-1.40	0.167	-.042955	.0075853
_cons	.7032943	.1526216	4.61	0.000	.3990486	1.00754
sigma_u	.16828624					
sigma_e	.0366653					
rho	.95468188	(fraction of variance due to u_i)				
F test that all u_i=0: F(18, 72) = 7.13 Prob > F = 0.0000						

3.5 Hausman Test

Furthermore, fixed effect regression cannot be conclusive without the Hausman test because In panel data analysis, the choice between fixed effects and random effects models depends on whether the unobserved individual effects are correlated with the regressors. The fixed effects model assumes that these individual-specific effects are correlated with the regressors, while the random effects model assumes they are not (Greene, 2018).

Table5: Hausman Test

<i>leveragede~a</i>	<i>-.5089033</i>	<i>-.2088806</i>	<i>-.3000227</i>	<i>.1240534</i>
<i>n0ofmembers</i>	<i>-.0001002</i>	<i>1.83e-06</i>	<i>-.0001021</i>	<i>.0000498</i>
<i>deposittoa~o</i>	<i>.3073951</i>	<i>.4534713</i>	<i>-.1460761</i>	<i>.0618714</i>
<i>management~y</i>	<i>-.0176849</i>	<i>-.0213051</i>	<i>.0036202</i>	<i>.0099415</i>
<i>_cons</i>	<i>.7032943</i>	<i>.3692387</i>	<i>.3340555</i>	<i>.1453103</i>

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\begin{aligned} \text{chi2}(4) &= (b-B)'[(V_b-V_B)^{-1}](b-B) \\ &= -8.25 \quad \text{chi2}<0 \implies \text{model fitted on these} \end{aligned}$$

To draw a final conclusion about whether the Random Effects model is appropriate, one would typically look at the test statistic and p-value associated with the Hausman test. If the p-value is less than a chosen significance level (e.g., 0.05), the null hypothesis is rejected in favor of the Fixed Effects model. In Table T of Hausman test shows that the p-value is 0.000 which is less than a significance level (0.05) therefore, the Fixed Effects model is appropriate model to address the determinants of the NPL

4.0. Conclusion and Recommendations

4.1. Conclusion

The study aimed to assess the determinants of non-performing loans (NPLs) in selected SACCOS within Dodoma District Council, focusing on SACCOS in Dodoma City. This research was driven by the significant burden of NPLs on these institutions, despite limited attention to the issue. The study highlights the need for solutions, as lax lending practices result in financial losses.

The findings, based on multiple regression analysis, revealed that management efficiency, deposit-to-asset ratio, number of members, and leverage had a negative but significant impact on NPLs. The study recommends that SACCOS adopt improved operational practices to address these challenges.

4.2. Recommendations

The study recommends the Ministry of Finance should enhance policies on NPLs in microfinance institutions to unlock untapped economic potential. Similarly, the researcher recommends that SACCOS management should implement skills and competencies from this study, focusing on training credit officers and improving lending practices to reduce NPLs.

Suggestion for Further Study

Future research could explore additional factors influencing NPLs among SACCOs instead of confining on the management efficiency, number of members, asset to debt ratio and leverage alone. Likewise, the ignoring the primary data and relying on the secondary data provides the avenue for conduction other studies based on primary data. Moreover, there is a possibility of using alternative analytical methods to verify the findings of study.

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The Effect of Brand Reputation on Customer Loyalty in Iron Sheet Roofing Industry in Tanzania

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Abstract

This study investigated the effect of brand reputation on customer loyalty in Tanzania's steel roofing industry, focusing on how product quality, customer service, and brand image influence customer loyalty. Using Relationship Marketing Theory as a framework, the research employed a cross-sectional design and gathered data from 285 customers of Temeke iron sheet roofing products through structured questionnaires. Data analysis, conducted using Descriptive statistics and Linear regression in IBM SPSS Statistics 27, revealed significant positive relationships between product quality, customer service, brand image, and customer loyalty. The findings indicate that higher perceived product quality (coefficient 0.252, $p = 0.001$), effective customer service (coefficient 0.173, $p = 0.012$), and a strong brand image (coefficient 0.617, $p < 0.001$) are all strongly associated with increased customer loyalty. This research offers valuable insights for developing strategies that enhance customer loyalty, contributing to the long-term success of the iron sheet roofing industry in Tanzania.

Keywords: *Customer Loyalty, product quality, Brand image, customer service, Iron roofing Industry*

1.0 Introduction

The interplay between brand reputation and customer loyalty has long been recognized as a fundamental aspect of marketing and business strategy across various industries worldwide (Le, 2023). In today's competitive marketplace, a brand's

reputation holds immense significance in shaping consumer perceptions, attitudes, and purchasing behaviour. Brand reputation encompasses the collective image, credibility, and trustworthiness that a brand enjoys among its target audience (Foroudi, 2019). A positive reputation can cultivate customer loyalty, leading to repeat purchases, positive word-of-mouth, and increased customer retention. On the other hand, a tarnished reputation can result in customer defection, reduced sales, and damage to a brand's overall standing. Understanding the complex and dynamic relationship between brand reputation and customer loyalty is essential for businesses aiming to thrive and succeed in the ever-evolving global market (Foroudi, 2019).

Building and retaining customer loyalty as a subject has evolved for several years as businesses changed and shifted focus from quality alone to become customer centric prior 1980s' (Zeithaml et al., 2001). Nevertheless, when market competition became stiff in the late 1990s, ensuring the needs of customers are satisfied became a far more important goal for many businesses (Gonring, 2008). Since then, in an effort to increase revenues, individuals and corporations have become increasingly customer focused (Mao, 2010). Customer loyalty has been a subject of study and scholars have grouped them into four main kinds.

The importance of building grand reputation by meeting customer expectation has also gained an increasing interest within the roofing industry. This has been evidenced by a fast growth of market for steel/iron sheet globally. The steel roofing global market report has shown that the global steel roofing market size has grown from USD 4.15 billion in 2022 to USD 4.26 billion in 2023 at a compound annual growth rate (CAGR) of 2.8 percent (BRC, 2023). While the Russia-Ukraine war disrupted the likelihood of global economic recovery from the COVID-19 pandemic with mounting economic sanctions, the steel roofing market size is however anticipated to grow to USD 4.56 billion in 2027 at a CAGR of 1.7 percent.

In Africa, and specifically in Tanzania, a large and increasing proportion of individuals use corrugated steel iron as a roofing material, surpassing traditional methods. Local manufacturers, including ALAF Limited, Reed's Metals Inc., ATAS International Inc., and DECRA Roofing Systems Inc, play a significant role in fabricating a considerable portion of the nation's steel roofs (BRC, 2023). The quality and reliability of iron sheet roofing materials play a crucial role in shaping customer satisfaction. Moreover, the broader customer experience, encompassing aspects such as customer service responsiveness and adherence to industry standards, also contributes significantly. Customer trust is intricately linked to brand reputation and customer satisfaction, with a trustworthy brand engendering confidence, reinforcing positive attitudes, and fostering loyalty among customers (Delgado and Munuera, 2005).

However, the market is facing challenges as some manufacturers produce low-quality iron sheets at lower prices to gain short-term popularity (Mutoro, 2021). This practice, driven by increased demand and competition, has led to a decline in the quality of roofing materials, compromising brand reputation and long-term customer loyalty. Customers are often tempted by lower prices, but these come with trade-offs in durability and overall performance (Roy et al., 2022; Zulanas, 2017).

While previous research has explored the link between brand reputation and customer loyalty (Ewaldo et al., 2021; Kurhayadi et al., 2022; Seo & Park, 2017), few studies have focused on the iron sheet industry. Most research in this sector has centered on technical aspects like product sustainability, load stress reliability, and cost-cutting measures (Roy et al., 2022; Kozak & Liel, 2015; Kashiwagi et al., 2016; Zulanas, 2017). The impact of brand reputation on customer loyalty in the roofing industry remains underexplored. Given the importance of empirical evidence on brand reputation in Tanzania's rapidly growing construction sector, this study fills the research gap by examining how brand reputation affects customer loyalty in the iron sheet industry. The study evaluated the influence of product quality, customer service, and brand image on customer loyalty.

2.0 Literature review

2.1 Theoretical literature review

The study on "The effect of Brand Reputation on Customer Loyalty in the Iron Sheet Roofing Industry in Tanzania" have been guided by the Relationship Marketing Theory. Relationship Marketing is a comprehensive theoretical framework that focuses on building and maintaining long-term relationships with customers (Ahmmed et al., 2019). According to Möller & Halinen (2000), this theory emphasizes the importance of creating strong, mutually beneficial relationships between a brand and its customers to foster loyalty and customer retention.

In the context of the iron sheet roofing industry, Relationship Marketing Theory can provide valuable insights into how brand reputation influences customer loyalty. The theory posits that customer loyalty is a result of positive and ongoing interactions between the brand and its customers. Positive interactions, such as delivering high-quality products, excellent customer service, and consistent communication, create a positive brand image and reputation (Gilaninia et al., 2011). Relationship Marketing Theory also emphasizes the significance of customer trust and satisfaction in driving loyalty. A brand with a strong reputation for product quality, reliability, and customer support is more likely to earn the trust and satisfaction of customers, leading to higher levels of loyalty and repeat purchases.

Furthermore, the theory highlights the importance of customer retention and long-term customer relationships. By fostering a loyal customer base, roofing companies can benefit from customer advocacy, positive word-of-mouth, and reduced customer churn (Nasir, 2017). By adopting Relationship Marketing Theory as a guiding framework, the study can explore the dynamics between brand reputation and customer loyalty in the iron sheet roofing industry in Tanzania. It can help researchers understand how positive brand perceptions and experiences influence customer loyalty and how roofing companies can strengthen customer relationships to achieve sustainable growth and success in the market.

2.2 Empirical review

Empirical insights from various studies underscore the intricate interplay between brand reputation, customer satisfaction, customer trust, and customer loyalty. Walsh and Wiedmann (2004) along with Walsh et al. (2009) substantiate that a favorable brand reputation substantially mitigates perceived risks and catalyzes intensified intentions for customer loyalty. Lai's study in 2019 unveils an indirect and nuanced nexus between brand reputation and customer loyalty, facilitated through the lens of customer commitment. The pivotal role of a robust post-experience in cultivating firm reputation and engendering customer commitment is a salient point reiterated by Lai (2019). Furthermore, Lai (2019) accentuates that a brand's constructive reputation is meticulously homed in the aftermath of positive encounters, thereby potentially fostering heightened customer commitment.

Chang (2013), and Su et al. (2015) collectively validate that customer satisfaction acts as a mediator between brand reputation and customer loyalty. Further affirmed by Chang (2013), a noteworthy and indirect association between brand reputation and customer loyalty is mediated by both customer satisfaction and trust. These findings collectively underscore the intricate web of interactions, suggesting that a positive brand reputation, cultivated through positive experiences, can lead to customer commitment and loyalty, facilitated by the mediating roles of customer satisfaction and trust.

Ali, (2022) carried out an investigation aiming to elucidate the function of corporate brand reputation in fostering robust customer relationships. The study was conducted in Egypt and targeted users of household appliances. A meticulously designed structured questionnaire was employed to gather data from 357 participants. Statistical analyses were performed utilizing the Social Science Statistical Package (SPSS) version 16 and the Analysis of Moment Structure (AMOS) package version 18. The outcomes revealed that the brand reputation of a firm exerted a noteworthy influence on customer satisfaction. This customer satisfaction, in turn, emerged as a potent

determinant impacting customer trust. Moreover, both customer satisfaction and trust exhibited notable roles in shaping customer loyalty.

Seo & Park (2017) conducted an examination into the influence of corporate reputation within the airline sector on brand loyalty. An empirical analysis was carried out via a questionnaire survey of Korean airline passengers. The responses gathered from a sample size of 250 participants were analyzed using structural equation modeling. The findings underscored the substantial impact of airline corporate reputation on pivotal factors such as brand image, pricing, perceived service quality, and brand preference. Furthermore, the study revealed that elements like price, perceived service quality, and brand preference exhibited a statistically significant influence on both behavioral and attitudinal loyalty among customers.

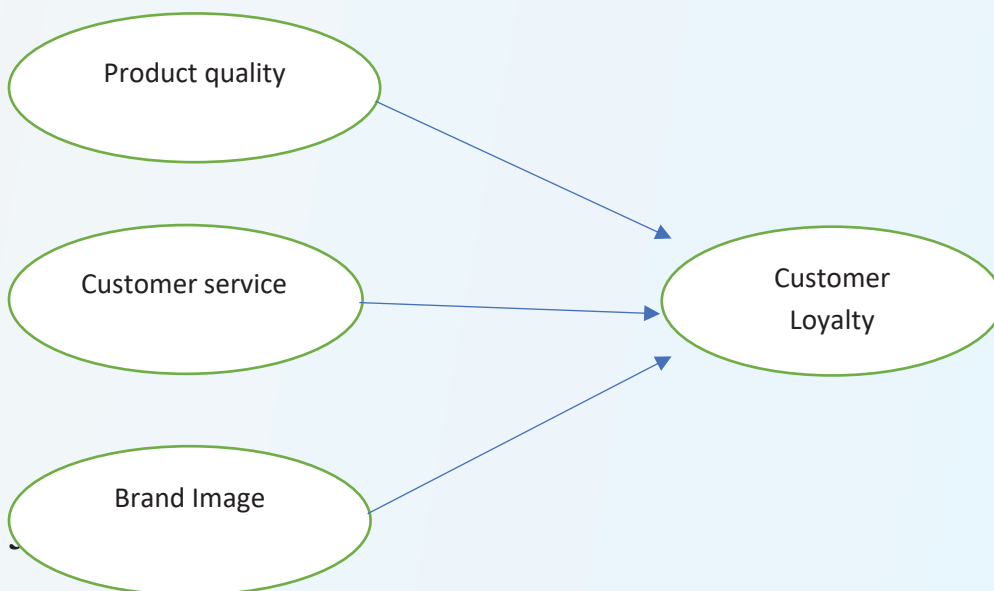
Alam & Arshad (2012) studied brand credibility, customer loyalty and the impact of religious orientation in the Pakistani setting. The study involved 263 participants, and researchers employed exploratory and confirmatory factor analyses to scrutinize data alignment and the potential presence of shared method bias. Moreover, correlation and hierarchical regression analyses were utilized to assess the presumed connections among the variables. The findings unveiled noteworthy and positive connections, such as those between trustworthiness and brand credibility, perceived quality and brand credibility, brand credibility and customer loyalty, as well as religious orientation and customer loyalty. Additionally, the study revealed that brand credibility acted as an intermediary element between trustworthiness, perceived quality, and customer loyalty. Furthermore, the research highlighted the role of religious orientation in moderating the relationship between trustworthiness and brand credibility.

Umair(Abbas et al., 2021) examined the impact of brand image on customer loyalty with the mediating role of customer satisfaction and brand awareness. A questionnaire is filled by the 300 respondents that were selected through non-probability to measure customer satisfaction and their loyalty to their favorite Brand. This was based on 22 statements and 5 points, Likert Scaled survey questionnaire. The results were made by using different methods. The result is based on the statistics test which displays that the Image of the brand and customer Loyalty is very significant with Customer Satisfaction and Brand Awareness, but Brand Image is insignificant with Brand Awareness.

Overall, empirical findings consistently emphasize that a favorable brand reputation plays a crucial role in shaping customer perceptions, attitudes, and behaviors, leading to enhanced customer loyalty. Brands that invest in building and maintaining a strong reputation are more likely to reap the benefits of loyal customer relationships, positive word-of-mouth, and sustainable business growth.

2.3 Conceptual framework

A conceptual framework is developed to show the relationship between independent and dependent variables. The independent variables namely product quality, customer service and brand image were derived from the Relationship marketing theory and empirical literature review. The conceptual framework of Figure 1 assumes that there is a relationship between the above-mentioned independent variable and dependent variable (Customer Loyalty).



3.1 Sampling, Questionnaire Design, and Data Collection

This study was conducted within the Temeke region in Dar es Salaam as the region is a growing presence of many construction companies, increasing number of construction activities, and iron sheet companies. Dar es Salaam exhibits a significant concentration of construction activities, making them central hubs for the iron sheet roofing industry. Simple random sampling was involved in selecting the sample from the given population. A sample of 285 was involved in the study as indicated by the Cochran formula where n represents the sample size, while Z denotes the critical value associated with a specific confidence level, such as 1.96 for a 95% confidence level. p signifies the proportion within the population of interest, which is 50% in this instance, and q is the complementary value to p , calculated as $1-p$. Lastly, e represents the acceptable margin of error, typically set at 0.05.

$$n = \frac{z^2}{e^2} * pq$$

$$n = \frac{1.96^2}{0.05^2} * 0.5 * 0.5 = 384 \text{ respondents}$$

Using the Cochran formula, a sample of 384 was obtained however only a total of 285 questionnaires were filled out correctly and handed back to the researcher for data recording and analysis. The total number of returned questionnaires indicates an overall success response rate of 75.0% enough to ensure that the research results are reliable and valid. According to Nulty (2008), a study involving a sample size of 500 necessitates 289 participants, which constitutes 58% of the total. The unreturned response of 25.0% was due to time constraints where some customers were in a hurry preventing them from completing the survey at that particular moment. Also, some customers were unwilling to fill out the given questionnaires while some customers did not complete filling out the given questionnaires.

The data collection process primarily involved gathering firsthand data using questionnaires. The questionnaires were designed firstly to capture the demographic features of the respondents such as age, gender and occupation. The second part of the questionnaire was capturing the variable information on the product quality, customer services and brand image focusing on capturing customers' expectation regarding iron roofing products in Temeke region. Questions were formulated as statements and rated on a five-point Likert-type scale, ranging from 1 for "strongly disagree" to 5 for "strongly agree".

3.2 Data Analysis

The study used both descriptive and inferential statistics. Descriptive statistics were used to describe the demographic information of respondents.

Objective i: A multiple linear regression equation to model the effect of product quality (material durability, weather resistance, thickness and gauge, coating quality, and compliance with manufacturing standards) on customer loyalty is expressed as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

Where: Y represents customer loyalty, X_1 represents material durability, X_2 represents weather resistance, X_3 represents thickness and gauge, X_4 represents coating quality, X_5 represents compliance with manufacturing standards, β_0 is the intercept, $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ are the coefficients for each respective independent variable, and ε represents the error term.

Objective ii: A multiple linear regression equation to model the effect of customer service (addressing customer inquiries, accuracy of order processing, timely delivery, complaint resolution, installation support, and after-sales support) on customer loyalty is expressed as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon$$

Where: Y represents customer loyalty, X_1 represents addressing customer inquiries, X_2 represents accuracy of order processing, X_3 represents timely delivery, X_4 represents complaint resolution, X_5 represents installation support, X_6 represents after-sales support, β_0 is the intercept, $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ are the coefficients for each respective independent variable, and ε represents the error term.

Objective iii: A multiple linear regression equation to model the effect of Brand image (Brand recognition, Brand visibility, Brand reputation, Brand associations, Complaint resolution, and Market positioning) on customer loyalty is expressed as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon$$

Where: Y represents customer loyalty, X_1 represents Brand recognition, X_2 represents Brand visibility, X_3 represents Brand reputation, X_4 represents Brand associations, X_5 represents Complaint resolution, X_6 represents Market positioning, β_0 is the intercept, $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ are the coefficients for each respective independent variable, and ε represents the error term.

Overall multiple linear regression equation to model showing the effect of Product quality, Customer Service and Brand image on customer loyalty is expressed as:

$$Y = \beta_0 + \beta_1 \cdot X_1 + \beta_2 \cdot X_2 + \beta_3 \cdot X_3 + \varepsilon$$

Where: Y is the predicted customer loyalty. β_0 is the intercept (constant term). β_1, β_2 , and β_3 are the coefficients for Product Quality, Customer Service, and Brand Image, respectively, representing the change in Y for a one-unit change in each of the respective independent variables. X_1, X_2 , and X_3 are the independent variables (Product Quality, Customer Service, and Brand Image). ε is the error term, representing unobserved factors affecting customer loyalty that are not included in the model. Moreover, the Statistical Package for Social Science (SPSS) Version 27 software were used to analyse the quantitative data.

The reliability of data was computed through Cronbach's Alpha Value which was measured through perceptions and expectations of all three dimensions. The results showed that all of the dimensions had an Alpha value above the acceptable level of

0.7. Thus, the results in Table 1 confirm that the measurement instruments for the study were reliable.

Table 1: The Cronbach's Alpha Values

Construct	Number of items	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items
Product Quality	5	0.851	0.851
Customer Service	6	0.877	0.877
Brand Image	6	0.878	0.878

4.0 Findings and Discussion

4.1 Descriptive Results

A descriptive analysis test was run to examine the respondents' gender, age and occupation as shown in Table 2. Out of 285 respondents, 52.3% of the respondents were males and 47.7% were females. Our respondents were mostly between the ages of 26 and 45 (71.2%), followed by those between the ages of 46 years and above (23.2%). According to their occupation, homeowners were 54.4% of respondents followed by others with 28.1% of respondents.

Table 2: Descriptive Results

Attributes	Distribution	Frequency	%
Gender	Male	149	52.3
	Female	136	47.7
	Between 18-25	16	5.6
	Between 26-45	203	71.2
	46 and above	66	23.2
Occupation	Construction professional	50	17.5
	Homeowner	155	54.4
	Others	80	28.1

4.2 Influence of product quality on customer loyalty within the iron roofing industry in Dar es Salaam (Temeke region).

4.2.1 Consumers perception towards Product quality of the iron roofing products.

Table 3 shows that most customers are satisfied with the durability of the iron sheets, with 51.9% agreeing and 20.0% strongly agreeing, totaling 71.9% who have a positive view. Only 7.4% disagree or strongly disagree, indicating a generally favorable perception.

Regarding weather resistance, 43.5% of respondents agree and 10.5% strongly agree, resulting in a combined 54% positive response. However, 32.6% are neutral, and 13.4% disagree or strongly disagree, suggesting mixed opinions. For thickness and gauge, 48.4% agree and 17.2% strongly agree, giving a 65.6% satisfaction rate. Yet, 23.5% are neutral and 10.9% dissatisfied, indicating some room for improvement.

On coating quality, 38.9% agree and 14.0% strongly agree, totaling 52.9% satisfaction. Despite this, 30.5% are neutral and 16.5% dissatisfied, pointing to potential areas for enhancement.

Finally, 36.8% agree and 15.1% strongly agree that the iron sheets comply with manufacturing standards, totaling 51.9%. However, 30.2% are neutral and 17.9% disagree or strongly disagree, reflecting mixed perceptions about compliance.

Table 3: Consumer perception on Product Quality of iron roofing products

	(Brackets) represents Percentage, Without (Brackets) represents Frequency) N=285				
Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
The material durability of the iron sheets I have used is satisfactory	8(2.8)	13(4.6)	59(20.7)	148(47.8)	65(51.9)
The iron sheets I have used are resistant to weather conditions	9(3.2)	29(10.2)	93(32.6)	124(43.5)	30(10.5)
The thickness and gauge of the iron sheets are adequate	13(4.6)	18(6.3)	67(23.5)	138(48.4)	49(17.2)
The coating quality of the iron sheets is satisfactory	13(4.6)	34(11.9)	87(30.5)	111(38.9)	40(14.0)

The iron sheets comply with manufacturing standards.	17(6.0)	34(11.9)	86(30.2)	105(36.8)	43(15.1)
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4.2.2 Coefficient Regression Results on Significant Relationship that exists between elements of Product Quality with customer Loyalty

The regression analysis highlights key factors influencing customer loyalty in Tanzania's iron sheet roofing industry. All aspects—material durability, weather resistance, thickness and gauge, coating quality, and compliance with manufacturing standards—show significant positive impacts on customer loyalty ($p < 0.001$). Compliance with manufacturing standards is the strongest predictor, followed by coating quality. Material durability, weather resistance, and thickness/gauge also significantly affect customer loyalty. To boost customer satisfaction and strengthen brand reputation, manufacturers should focus on enhancing these areas.

Table 4: Coefficient Regression Results

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta				Lower Bound	Upper Bound
1(Constant)	.015	.005			2.976	.000	.025	.005
Material durability	.204	.002	.235		3.220	.000	.201	.207
Weather resistance	.202	.002	.239		2.031	.000	.199	.205
Thickness and gauge	.197	.002	.248		4.453	.000	.194	.200
Coating quality	.201	.001	.263		4.743	.000	.198	.204
Compliance with manufacturing standards	.200	.001	.274		4.856	.000	.197	.203

a. Dependent Variable: Customer Loyalty

4.3 Influence of product quality on customer loyalty within the iron roofing industry in Dar es Salaam (Temeke region).

4.3.1 Consumers perception towards customer services of the iron roofing companies

Responsiveness to Customer Inquiries: Customers rate the company's responsiveness moderately (Mean = 3.35). The low standard deviation indicates consistent perceptions, though the slight negative skewness (-0.359) suggests a tendency towards viewing the company as less responsive. This highlights a need for improved communication and responsiveness.

Accuracy of Order Processing: The accuracy of order processing is perceived positively (Mean = 3.56), with consistent ratings and low variability. The negative skewness (-0.626) indicates that while generally satisfactory, there is room for improvement in accuracy.

Timeliness of Deliveries: Customers rate delivery timeliness as moderately high (Mean = 3.46). Consistent perceptions are noted, but the negative skewness (-0.529) suggests that more customers view deliveries as less timely. Enhancing delivery efficiency could boost satisfaction.

Complaint Resolution Process: Satisfaction with complaint resolution is moderate (Mean = 3.48), with consistent but slightly negative skewed perceptions (-0.392). Improvements in this area could enhance customer satisfaction and loyalty.

Support During Installation: Support during installation is rated satisfactorily (Mean = 3.43), with minimal variability. The slight negative skewness (-0.282) indicates a need for improvement to elevate support levels.

After-Sales Support: After-sales support is highly rated (Mean = 3.73), with consistent perceptions and a negative skewness (-0.783) suggesting that while generally excellent, there is potential to further exceed customer expectations.

Overall: The company performs well in several customer service areas but has opportunities for improvement, particularly in responsiveness, order accuracy, delivery timeliness, and complaint resolution. Addressing these issues could enhance customer satisfaction and loyalty in Tanzania's iron roofing industry.

Table 5: Descriptive analysis on customer services of the iron roofing companies

Construct	Mean	Std.Deviation	Skewness	Kurtosis
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Addressing customer inquiries	3.35	1.042	-.359	.441
Accuracy of order processing	3.56	1.035	-.626	.043
Timely delivery	3.46	1.033	-.529	.095
Complaint resolution	3.48	0.977	-.392	.082
Installation support	3.43	0.965	-.282	.155
After sales support	3.73	1.025	-.783	.341

4.3.2 Coefficient Regression Results on Significant Relationship that exists between elements of Customer Service with customer Loyalty

The regression analysis provides insights into factors affecting customer loyalty in Tanzania's iron sheet roofing industry. The constant term, representing baseline customer loyalty, is 1.670 ($p < 0.001$). Responsiveness to customer inquiries has a coefficient of -0.010 ($p = 0.827$), which is not statistically significant, indicating it does not notably impact loyalty. Accuracy of order processing has a significant positive coefficient of 0.180 ($p < 0.001$), showing that higher accuracy boosts loyalty. Timeliness of deliveries, with a coefficient of -0.107 ($p = 0.036$), negatively impacts loyalty when deliveries are delayed. Satisfaction with the complaint resolution process has a coefficient of 0.117 ($p = 0.063$), suggesting a potential positive effect, though not statistically significant. Support during installation, with a coefficient of 0.188 ($p < 0.001$), significantly enhances loyalty, and after-sales support, with the highest coefficient of 0.243 ($p < 0.001$), strongly correlates with increased customer loyalty. Thus, improving order processing accuracy, delivery timeliness, installation support, and after-sales support can effectively enhance customer loyalty.

Table 6: Coefficient Regression Results

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B
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	B	Std. Error	Beta			Lower Bound	Upper Bound
1(Constant)	1.670	.165		10.146	.000	1.346	1.994
Addressing customer inquiries	-.010	.047	-.014	-.219	.827	-.102	.081
Accuracy of order processing	.180	.047	.240	3.828	.000	.088	.273
Timely delivery	-.107	.051	-.142	-2.106	.036	-.208	-.007
Complaint resolution	.117	.062	.146	1.867	.063	-.006	.239
Installation support	.188	.053	.232	3.533	.000	.083	.292
After sales support	.243	.043	.320	5.603	.000	.157	.328

a. Dependent Variable: Customer Loyalty

4.4 The influence of brand image on customer loyalty within the iron roofing industry

4.4.1 Consumers perception towards brand image of the iron roofing products.

The findings in Table 6 reveal robust indicators of customer loyalty linked to brand recognition, visibility, and reputation within the iron sheet roofing industry. A significant 68.1% of customers recognize the brand, suggesting strong brand awareness. Market visibility is also high, with 74.1% of respondents perceiving the brand as highly visible, which likely boosts brand recall. Positive brand associations are prevalent, with 76.5% of customers holding favorable views, enhancing emotional connections and loyalty. The brand's reputation is viewed positively by 71.9% of customers, reinforcing trust and satisfaction. Customer satisfaction with the complaint resolution process stands at 71.2%, indicating effective issue handling. Lastly, the brand's strong market positioning, noted by 72.7% of respondents, reflects its leadership status and reinforces its value proposition. Collectively, these factors underscore the brand's solid standing and its impact on customer loyalty.

Table 6: Consumer perception on Brand Image of iron roofing products

	(Brackets) represents Percentage, Without (Brackets) represents Frequency) N=285				
Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
I recognize the brand of the iron sheets I have used	9(3.2)	24(8.4)	58(20.4)	130(45.6)	64(22.5)
The brand of the iron sheets is highly visible in the market	11(3.9)	16(5.6)	47(16.5)	133(46.7)	78(27.4)
The reputation of the brand is positive.	8(2.8)	16(5.6)	56(19.6)	134(47.0)	71(24.9)
The associations I make with the brand are positive	9(3.2)	14(4.9)	44(15.4)	141(49.5)	77(27.0)
I am satisfied with the company's complaint resolution process.	7(2.5)	19(6.7)	59(19.6)	128(44.9)	75(28.3)
The market positioning of the brand is strong	5(1.8)	17(6.0)	56(19.6)	131(46.0)	76(26.7)

4.4.2 Coefficient Regression Results on Significant Relationship that exists between elements of brand image with customer Loyalty

The regression analysis in Table 7 reveals that brand recognition, positive brand reputation, effective complaint resolution, and strong market positioning are crucial determinants of customer loyalty within the iron sheet roofing industry in Tanzania. Specifically, brand recognition (coefficient of 0.181, $p < 0.001$) and a positive brand reputation (coefficient of 0.111, $p = 0.027$) significantly enhance customer loyalty, indicating that familiarity with and trust in the brand are essential. Effective complaint resolution also plays a vital role (coefficient of 0.177, $p < 0.001$), as addressing customer issues promptly fosters loyalty. Notably, strong market positioning has the most substantial impact (coefficient of 0.365, $p < 0.001$), highlighting that being perceived as a market leader is a key driver of loyalty. In

contrast, brand visibility and positive brand associations do not have a significant direct effect on loyalty, suggesting that while important for brand health, they are less critical in this context. Companies should focus on enhancing brand recognition, reputation, and market positioning, along with improving complaint resolution processes to effectively build and sustain customer loyalty.

Table 7: Coefficient Regression Results

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error				Lower Bound	Upper Bound
1(Constant)	.789	.155		5.086	.000	.484	1.094
Brand recognition	.181	.044	.232	4.141	.874	.095	.267
Brand visibility	.007	.046	.009	.159	.027	-.084	.098
Brand reputation	.111	.050	.136	2.229	.456	.013	.210
Brand associations	-.044	.059	-.054	-.746	.000	-.160	.072
Complaint resolution	.177	.048	.220	3.703	.000	.083	.271
Market positioning	.365	.040	.432	9.196	.000	.287	.443

a. Dependent Variable: Customer Loyalty

4.5 Coefficient Regression Results

The aim of this study was to assess the effect of brand reputation on customer loyalty in iron sheet roofing industry in Tanzania. The study assessed the relationship between each of the independent variable with customer loyalty and the results are findings are presented below.

Table 8: Coefficient Regression Results

Model	Unstandardized Coefficients	Standardized Coefficients		t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	.794	.176		4.515	.000	0.448	.141
Product quality	.252	.076	.229	3.334	.001	.104	.402
Customer Service	.173	.069	.177	2.515	.012	.038	.308
Brand image	.617	.054	.603	11.365	.000	0.510	0.724

a. Dependent Variable: Customer Loyalty

Results in table 8 reveals that; The coefficient for product quality is 0.252, with a standard error of 0.076, and it is statistically significant ($p = 0.001$). This positive coefficient indicates that higher perceived product quality is associated with increased customer loyalty. Customers are more likely to remain loyal to the brand when they perceive the product quality to be higher.

Regarding Customer Service: The coefficient for customer service is 0.173, with a standard error of 0.069, and it is statistically significant ($p = 0.012$). This positive coefficient suggests that better customer service is associated with increased customer loyalty. Effective customer service practices, such as responsiveness and complaint resolution, contribute to stronger customer loyalty.

Regarding Brand Image: The coefficient for brand image is 0.617, with a standard error of 0.054, and it is statistically significant ($p < 0.001$). This indicates that a positive brand image has a substantial impact on customer loyalty. A strong brand image, characterized by factors such as brand recognition, reputation, and associations, significantly enhances customer loyalty.

Overall, the regression analysis highlights the significant predictors of customer loyalty within the iron roofing industry in Tanzania. Perceived product quality, customer service, and brand image all have significant positive effects on customer loyalty. Specifically, higher product quality, better customer service, and a positive brand image contribute to increased customer loyalty. These findings underscore the

importance of maintaining product quality standards, providing excellent customer service, and cultivating a strong brand image to foster and sustain customer loyalty in the competitive market. Companies should prioritize investments and strategies aimed at enhancing these key factors to strengthen customer loyalty and maintain a competitive edge in the industry. Empirical insights all from various studies also supports these findings, Studies show the interplay between brand Product Quality, customer service and Brand Image and customer loyalty. Walsh and Wiedmann (2004) along with Walsh et al. (2009) substantiate that a favorable product quality, brand reputation and customer service substantially mitigates perceived risks and catalyzes intensified intentions for customer loyalty

5.0 Conclusion and Recommendation

5.1 Conclusion

The primary purpose of this study was to assess the influence of brand reputation on customer loyalty within the steel roofing industry in Tanzania, particularly focusing on how product quality, customer service, and brand image contribute to customer loyalty in the Dar es Salaam region, under the framework of Relationship Marketing Theory. The study's findings highlight significant relationships between these factors and customer loyalty. Regression analysis revealed that higher perceived product quality (coefficient of 0.252, $p = 0.001$) is strongly linked to increased customer loyalty, indicating that customers tend to remain loyal to brands offering superior quality products. Effective customer service (coefficient of 0.173, $p = 0.012$), particularly in responsiveness and complaint resolution, also positively impacts loyalty. Most notably, a positive brand image (coefficient of 0.617, $p < 0.001$) emerged as the most substantial driver of customer loyalty, underscoring the importance of brand recognition, reputation, and positive associations. The study confirms that businesses in the iron sheet roofing industry in Tanzania should prioritize maintaining high product quality, delivering exceptional customer service, and building a strong brand image to foster customer loyalty. These findings contribute to the existing literature by emphasizing the critical role of brand image in this industry and context. However, the study's focus on Dar es Salaam and the iron sheet roofing industry may limit the generalizability of the findings, suggesting the need for future research in different regions and industries to validate and expand upon these insights.

5.2 Recommendation

To enhance customer loyalty in Tanzania's iron roofing industry, the study offers recommendations for various stakeholders. Tanzanian policymakers should establish and enforce quality standards for iron roofing products, strengthen consumer protection laws, support local manufacturers, and launch public awareness campaigns.

Manufacturers must focus on enhancing product quality, improving customer service, strengthening brand presence, and creating effective feedback mechanisms. The public should prioritize purchasing quality products, report issues, stay informed about reputable brands, and support local manufacturers who adhere to quality standards. These collective efforts will significantly improve the quality and standards of iron roofing products in Tanzania.

5.3 Areas for Future Research

Areas for further studies could include exploring the impact of digital marketing strategies on customer loyalty in the iron roofing industry, particularly through social media and e-commerce platforms in Tanzania. Additionally, future research could investigate the role of corporate social responsibility (CSR) initiatives in enhancing brand reputation and customer loyalty within the industry. Comparative studies between the iron roofing industry and other construction material sectors could provide insights into industry-specific factors influencing customer loyalty. Lastly, examining the influence of economic and environmental factors, such as inflation or climate change, on customer preferences and loyalty in the roofing industry could offer valuable perspectives for manufacturers and policymakers.

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Effect of On-the-Job Training on the Performance of Law Enforcement Officers: A Case Study of the Dodoma Field Force Unit, Tanzania

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Abstract

Globally, the police force enforces laws, protects civilians and property, responds to emergencies, and apprehends criminals. This requires police officers to have practical training to equip them with the necessary skills to perform their duties. This paper investigates the effect of on-the-job training programs, precisely the drill method and induction method, on the job performance of law enforcement officers in the Field Force Unit (FFU) of the Dodoma Regional Police in Tanzania. A mixed-methods approach is employed for a sample of 208 field force officers. The study employed a combination of probability and non-probability sampling techniques to ensure a comprehensive analysis. Multiple linear regression model analysis was used to determine the relationship between job performance and drill induction variables. The model's R-squared value of 0.521 indicates that over half of the variability in job performance can be attributed to the drill and induction methods. It revealed that the drill and induction methods positively affect job performance, with p-values of 0.032 and 0.042, respectively. The study concludes that the drill method, emphasizing practical, hands-on experience, notably enhances officers' problem-solving skills, adaptability, and overall job performance. It recommends that the drill and induction methods be continuously refined to meet the evolving needs of law enforcement personnel.

Keywords: *On-the-job training; Drill method; Induction Method; Job performance; Law enforcement officers.*

1.0 Introduction

Globally, the police force is responsible for enforcing laws, protecting civilian life and property, responding to emergency calls, and apprehending criminals. Law enforcement officers often face complex and high-risk situations requiring a high level of professional behavior (Kleygrewe et al., 2022). Effective on-the-job training is

crucial for equipping these officers with the necessary knowledge and skills. Police academies and law enforcement agencies play a key role in providing this training, ensuring that officers are prepared to meet the demands of their duties (Den & Brooks, 2022). Historically, policing focused on physical skills such as self-defence, arresting, shooting, and driving, reflecting an era when law enforcement primarily involved responding to immediate threats and maintaining order through force (Kleygrewe et al., 2022). However, modern policing has evolved to include community engagement, conflict resolution, and problem-solving (Yimam, 2022). This transformation requires a broader skill set, including effective communication, critical thinking, and ethical decision-making.

Worldwide, police departments prioritise on-the-job training to ensure officers can meet modern challenges. This training improves officers' self-confidence, skills, and public trust (Maina & Waithaka, 2018). In the police force, two prevalent on-the-job training methods are utilised: the drill and induction methods (Bello & Mela, 2022). The drill method provides employees with job-specific knowledge and skills through repetition, observation, and hands-on practice (Maina & Waithaka, 2018). The induction method involves familiarising new officers with organisational culture, policies, procedures, and job-specific tasks through structured orientation programs, mentoring, job shadowing, and workshops. This method helps recruits integrate smoothly into their roles and understand the expectations and standards of the police force (Vermeer et al., 2020).

In Sub-Saharan Africa, the police force has faced criticism for underperformance, corruption, and excessive use of force (Kunkel, 2019). In Tanzania, crime rates increased in the mid-1990s and early 2000s, decreasing public confidence in the police (Mount, 2014). A reform initiative from 2006 to 2009 aimed to enhance public perception, update policing mandates, and modernise facilities and equipment. Despite these efforts, challenges like inadequate monitoring and funding hindered the reform's success (Mount, 2014).

Generally, the Tanzania Police Force (TPF) continues to invest in on-the-job training, both locally and internationally, to improve the performance of Police Officers. In 2022-2023, TPF provided on-the-job training to 10,500 officers, focusing on skills development and promotional training (TPF, 2023). Moreover, the Tanzanian Government, through the Tanzania Police Force (TPF) under the Ministry of Home Affairs, allocates annual budgets for various training programs for in-service police officers, including on-the-job training (TPF, 2023).

Despite these efforts, there is a notable gap in understanding the actual effect of on-the-job training initiatives based on the drill and induction methods on officers' performance in real-world challenges. Many trainers within the police force lack

advanced instructional techniques, practical expertise, and proficiency in using technology effectively (Mazuki et al., 2021). Additionally, there are persistent concerns about police underperformance and the community's negative perceptions of trained officers (Modise, 2017; Blumberg et al., 2019; Hu, 2016). Thus, this study aims to address this gap by examining the actual effect of on-the-job training programs on the performance of law enforcement in Tanzania based on the aspect of drill and Induction methods. By focusing specifically on on-the-job training, the research seeks to provide insights into how these training interventions can enhance the effectiveness and efficiency of police operations in the Dodoma Region.

1.2 Study Objectives

The general aim of this study was to examine the effect of on-the-job training on the job performance of law enforcement officers in Dodoma Regional Police. Specifically, it examined the effect of the drill method on the job performance of law enforcement officers in the Dodoma Field Force Unit and evaluated the influence of the induction method on the job performance of law enforcement officers in the Dodoma Field Force Unit.

1.3 The Study Rationale

This study provides a guide to policy decisions and refine training strategies to improve the effectiveness and efficiency of police officers in performing their duties. The study offers actionable insights by assessing the drill method, which involves repetition, observation, and hands-on practice, and the induction method, which includes structured orientation programs, job instruction, and job rotation. These insights are intended to enhance the integration and performance of officers, particularly within the Field Force Unit (FFU) of the Dodoma Regional Police. Furthermore, it can contribute to the broader discourse on training methodologies and their effectiveness, providing a foundation for further research and theoretical development in this field.

2.0 Literature Review

Theoretical Literature Review

The theory adopted for this study is Human Capital Theory, introduced by Gary Becker in the 1960s. This theory views training as an investment that enhances productivity and organizational performance (Luo, 2000). According to Armstrong and Taylor (2020), investing in employees' skills and knowledge yields significant returns, making them valuable assets. In on-the-job training (OJT) for law enforcement officers, Human Capital Theory suggests that training programs enhance job performance by developing officers' skills, knowledge, and abilities (Kleygrewe et al., 2022). This study explicitly examines two OJT methods: the drill and induction methods.

The drill method, which involves repetition, observation, and hands-on practice, aligns with Human Capital Theory by focusing on practical, job-specific skills development through continuous, experiential learning. Conversely, the induction method includes structured orientation programs, job instruction, and job rotation, which support Human Capital Theory by facilitating comprehensive integration into the job role, thus enhancing immediate performance and long-term career growth.

By applying Human Capital Theory, this study evaluates how the drill and induction methods impact officers' job performance within the Dodoma Field Force Unit (FFU). The theory supports the notion that strategic investments in these training methods can lead to significant improvements in individual performance and overall unit effectiveness. This study aims to demonstrate how these OJT methods, as forms of human capital development, enhance immediate job performance and contribute to long-term career growth and organizational success.

Empirical Literature Review

Empirical research has focused on the role of on-the-job training (OJT) in enhancing job performance. This section reviews the literature examining how OJT influences job performance across various sectors. Kleygrewe et al. (2022) describe OJT as a structured or informal training method conducted in the workplace, which allows employees to gain hands-on experience relevant to their job roles. Armstrong and Taylor (2020) further detail common OJT methods such as drills, induction processes, case studies, and mentoring, highlighting their importance in practical training.

The drill method involves repetition, observation, and hands-on practice and is a critical component of OJT. Empirical studies have consistently shown that the drill method positively impacts employee performance. Nguyen et al. (2021) found that the drill method improves working conditions in Vietnam, although its effect on wages was not statistically significant. Na (2021) revealed that OJT methods, including drills and educational levels, positively influence innovation in Eastern Europe and Central Asia, suggesting that practical training fosters performance improvement and innovative capacity. Yimam (2022) investigated a technology-focused academic institution and concluded that well-designed drill programs significantly enhance employee performance. Somasundaram (2017) echoed these findings, noting that drills improve both performance and employees' knowledge, skills, and future roles.

The Induction method involves structured orientation programs, job instruction, and job rotation to help new employees integrate smoothly into their roles. This method familiarises new officers with organisational culture, policies, procedures, and job-specific tasks. Bafaneli and Setibi (2015) reported that while induction programs are generally perceived positively at Riley's Hotel in Botswana, challenges such as time

constraints and workload can limit their effectiveness. Jagero et al. (2012) found a strong positive correlation between induction programs and employee performance in Dar es Salaam's courier firms, emphasizing the importance of practical skills. Similarly, Tukunimulongo (2016) observed improved employee capabilities and productivity at Mumias Sugar Company due to effective induction programs.

In practical contexts, studies have highlighted OJT's benefits and challenges. Bafaneli and Setibi (2015) reported that while OJT is generally perceived positively at Riley's Hotel in Botswana, challenges such as time constraints and workload can limit its effectiveness. Jagero et al. (2012) found a strong positive correlation between OJT and employee performance in Dar es Salaam's courier firms, emphasizing the importance of practical skills. Similarly, Tukunimulongo (2016) observed improved employee capabilities and productivity at Mumias Sugar Company due to OJT. Conversely, Maina and Waithaka (2018) found that OJT had a positive but statistically insignificant effect on police officers' performance in Kenya, indicating that while OJT is beneficial, additional strategies may be required for more substantial improvements in job performance.

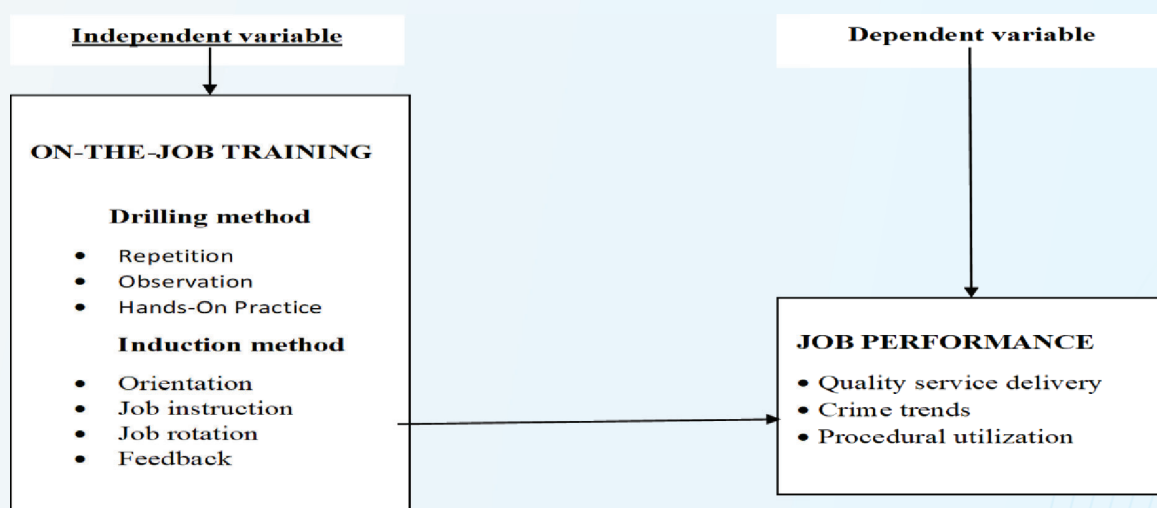
Generally, the empirical literature reveals a research gap in understanding the relationship between on-the-job training (OJT) and job performance, particularly in the Tanzanian context. While existing research extensively covers various OJT methods such as the drill method, involving repetition, observation, and hands-on practice, and the induction method, encompassing structured orientation programs, job instruction, and job rotation (Nguyen et al., 2021; Na, 2021; Yimam, 2022; Bafaneli & Setibi, 2015; Jagero et al., 2012; Tukunimulongo, 2016), studies explicitly focusing on these methods within the Tanzania Police Force (TPF) remain limited. Existing studies have not fully explored how these specific OJT methods impact job performance in the TPF, highlighting a notable gap in the literature. This study aims to address this gap by investigating the effects of both the drill and induction methods on job performance among law enforcement officers in the Dodoma Field Force Unit, Tanzania. By examining these methods, the study seeks to provide valuable insights for improving local training programs and enhancing the effectiveness of law enforcement training strategies

The Conceptual Framework

A conceptual framework demonstrates the variables of assessment and their interactions. Figure 1 shows the independent variables and their effect on the dependent variable. The independent variables in this study are the drilling method and the induction method. The dependent variable is job performance. Under the drilling method, repetition, observation, and hands-on practice are examined for their influence on job performance. The induction method includes orientation, job

instruction, job rotation, and feedback. Quality service delivery, crime trends, and procedural utilization measure job performance.

Figure 1: Conceptual framework



Source: Researcher's own construct (2024)

3.0 Methods and Material.

The Study Area

Dodoma Field Force Unit has been selected as a study area due to the increasing criminal offenses, cyber security threats, and human trafficking in the region. From December 2021 to November 2023, these crimes have risen by an average of 5.6% compared to other police regions in Tanzania (TPF, 2023). This alarming trend underscores the need for effective training programs to enhance the job performance of law enforcement officers in tackling these challenges. Additionally, the FFU Dodoma is the unit within the Police Force responsible for conducting on-the-job training. This makes it an ideal candidate for evaluating the impact of these training programs. *Sampling*

3.1 Research Approach

This study employed a mixed-methods research design, integrating both qualitative and quantitative approaches to comprehensively investigate the impact of on-the-job training on job performance within the Dodoma Field Force Unit (FFU). According to Creswell (2014), this approach harnesses the strengths of both methodologies to provide a richer analysis. Quantitative methods included structured surveys designed to quantify the extent and patterns of on-the-job training and its correlation with job performance metrics. Qualitative methods involved in-depth interviews and focus groups with selected police officers and key informants. These methods offered detailed insights into individual experiences and contextual factors influencing jobs.

3.2 Sample Size and Sampling Technique

This study employed a combination of probability and non-probability sampling techniques to ensure a comprehensive analysis. Random sampling was used to select non-managerial staff from the Dodoma Field Force Unit (FFU), ensuring that every member had an equal chance of selection. Purposive sampling was applied to select key informants, including senior police officers such as the Regional Police Commander and the Officer Commanding the Field Force Unit. This approach provided valuable insights into job performance and allowed a deeper understanding of the training's impact.

Yamane's (1973) formula was employed to determine the sample size. Given a total population of 436 and a margin of error of 0.05, the calculated sample size was approximately 208. However, the actual number of collected responses was 192, resulting in a shortfall of about 7.69%. This discrepancy was due to time constraints and incomplete questionnaires, which may affect the generalizability of the study's findings. Future research should consider selecting a larger initial sample and implementing measures to enhance response rates to address potential non-responses and improve the robustness of the results.

3.3 Data Collection Methods and Tools

Structured surveys were used for quantitative data collection. The tool employed was a questionnaire with both closed- and open-ended questions. This tool was designed to capture standardised responses from a large sample of non-managerial police officers, enabling a systematic analysis of training and performance-related variables (Blumberg et al., 2014). Semi-structured interviews were conducted for qualitative data collection. This involved interviewing key informants, including senior Dodoma Field Force Unit (FFU) officers. The tool used was an interview guide with open-ended questions, which allowed for an in-depth exploration of participants' perspectives and experiences related to on-the-job training (Kothari, 2014).

3.4 Data Analysis

Data analysis for this study utilized qualitative and quantitative approaches to comprehensively understand the research findings. Quantitative data analysis employed Statistical Packages for Social Science (SPSS Version 25) to examine trends, correlations, and statistical significance through frequencies and percentages. This method ensured the reliability and generalizability of the findings. Conversely, qualitative data were analyzed using content analysis, which provided deeper insights into participants' experiences, perceptions, and attitudes. This qualitative analysis complemented the quantitative results by explaining the context behind the numerical data and offering a richer understanding of the research questions.

To model the relationship between the dependent variable (job performance) and the independent variables (drill, induction, and case study), the following regression equation was used:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

Where:

- Y: Dependent variable (job performance)
- X1: Drill
- X2: Induction
- β_0 : Intercept
- β_1, β_2 : Regression coefficients
- ε : Error term at 95% Confidence level.

By integrating both quantitative and qualitative analyses, this study ensured a robust examination of the impact of training programs on job performance, addressed both the breadth and depth of the research questions and facilitated triangulation through multiple data sources and perspectives.

4.0 Results

Data Reliability and Validity testing

Data Reliability testing

This study assessed data reliability using Cronbach's alpha to demonstrate the internal consistency of the scale's reliability.

Table 42: Reliability Statistics

Cronbach's Alpha	Number of Items
0.941	47

Source: Field data (2024)

Table 1 presents the reliability statistics, specifically Cronbach's Alpha coefficient, which measures internal consistency reliability. The Cronbach's Alpha value of 0.941 indicates a high level of reliability for the set of items included in the measurement instrument. Cronbach's Alpha is interpreted based on its value range, which extends from 0 to 1. Higher values suggest greater internal consistency among the items in the scale. Typically, values above 0.70 are considered acceptable for research purposes, while values above 0.80 are considered excellent.

In this context, Cronbach's Alpha value of 0.941 indicates that the items included in the scale exhibit high internal consistency. This suggests that the items in the scale consistently and reliably measure the same underlying construct. Therefore, the measurement instrument used in this study demonstrates strong reliability, providing confidence in the accuracy and consistency of the data collected. Due to this high internal consistency, researchers and practitioners can use this reliable measurement instrument to make informed decisions based on the collected data.

4.1 Data Validity testing

The questionnaire was carefully constructed to ensure content validity. Data validity in this investigation was assessed using a 95% confidence interval, meaning that 5% represents the errors in both the sample estimate and the correlation analysis.

4.2 Regression Analysis

A multiple linear regression analysis was conducted to understand the impact of different training methods on job performance within the Dodoma Regional Police. This method determines the relative contribution of each training method to overall job performance. Previous studies (Brown, 2021; Taylor & Bowers, 2022) have highlighted the importance of comprehensive training programs in enhancing law enforcement performance, and this study builds on that foundation.

The model's R-squared value of 0.521 indicates that over half of the variability in job performance can be attributed to the drill method and induction method. This supports existing literature emphasizing the effectiveness of diverse training methods (Carter & Radelet, 2020). Though slightly lower, the adjusted R-squared value of 0.513 still demonstrates the model's robustness. This suggests that the training methods within the Dodoma Regional Police significantly impact job performance, aligning with findings by Carter and Radelet (2020) on the importance of both practical and theoretical training in police performance.

The F-statistic ($F = 68.073$, $p < 0.001$) confirms the statistical significance of the overall model, indicating that the predictors (drill method and induction method) are collectively significant in explaining variations in job performance. This is consistent

with White and Escobar's (2021) findings on the effectiveness of integrated training programs.

Model Summary

Table 2: Model summary

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					Square Change	F Change	df1	df2	Sig. F Change
1	.722 ^a	0.521	0.513	0.376	0.521	68.073	3	188	0.000

a. Predictors: (Constant), Drill Method, Induction Method)

b. Dependent Variable: Job performance

Source: Field data (2024)

Results in Table 21 indicate that the coefficient of determination (R-squared) for the model is 0.521, meaning that approximately 52.1% of the variance in job performance can be explained by the combined effects of the three training methods included in the model. This suggests that the model provides a moderately good fit to the data, explaining a significant portion of the variability in job performance scores. Moreover, the adjusted R-squared value, which considers the number of predictors in the model, is 0.513. This slightly lower adjusted value suggests that the inclusion of the predictors has a marginal effect on the overall explanatory power of the model.

4.3 Statistical Significance of Result

Table 3 presents the ANOVA results for the regression model analysing the impact of different training methods on job performance within the Dodoma Regional Police.

Table 3: ANOVA

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.815	3	9.605	68.073	.000 ^b
	Residual	26.526	188	0.141		
	Total	55.341	191			

a. Dependent Variable: Job performance

b. Predictors: (Constant), Drill method, Induction Method)

Source: Field data (2024)

The significant F-statistic ($F = 68.073$, $p < 0.001$) indicates that the regression model significantly explains the variation in job performance. The sum of squares for the

regression (28.815) represents the variation explained by the Drill, Induction, and Case study methods. In contrast, the residual sum of squares (26.526) represents the unexplained variation. These findings suggest that the training methods collectively significantly impact job performance. This underscores the importance of investing in and continually evaluating these training methods to ensure they meet the evolving needs and challenges law enforcement personnel face.

5.0 Discussion of the Findings

This section provides a detailed analysis of the impact of the drill and induction methods on job performance, exploring their effectiveness, comparing their influences, and integrating both statistical results and qualitative insights.

5.1 The Influence of the Drill Method on Job Performance

The drill method significantly impacted job performance ($\beta = 0.389$, $p < 0.001$). This indicates that practical, hands-on training exercises are crucial for enhancing job performance. These findings align with the Training Effectiveness Theory, which emphasises the benefits of experiential learning (Kirkpatrick & Kirkpatrick, 2006). Interviews with employees revealed that the drill method effectively bridges the gap between theoretical knowledge and practical application. One participant noted, "Drill training allows us to practice our skills in a real environment, improving our job performance." This practical approach helps employees adapt to job-related challenges and enhances problem-solving skills and job efficiency, consistent with Adams and Johnson (2021). Incorporating visual aids, such as performance improvement charts, could further illustrate the effectiveness of the drill method.

5.2 The Influence of the Induction Method on Job Performance

The induction method also significantly impacted job performance ($\beta = 0.421$, $p < 0.001$). This suggests that structured, on-the-job experiences are essential for improving job performance. It supports the Training Effectiveness Theory and highlights the role of practical experience in accelerating employee integration (Kirkpatrick & Kirkpatrick, 2006). Participants emphasized that the induction method helps employees quickly adapt to their roles, leading to better performance outcomes. One participant stated, "Induction training provides us with the necessary skills and knowledge to excel in our positions." This method facilitates a smooth transition and improves job efficiency. These findings align with Brown and Green (2022), who observed that on-the-job training is critical for developing role-specific skills. Future research could explore how the induction method performs across different industries or job roles to provide a more comprehensive understanding of its effectiveness.

5.3 Comparative Analysis and Future Research

Comparing the drill and induction methods, both significantly impact job performance, though each offers unique benefits. The drill method excels in providing hands-on problem-solving experiences, while the induction method supports rapid integration and role-specific skill development. Future research should investigate the long-term effects of these methods and their applicability across various job contexts. Additionally, incorporating contrasting studies could provide a more balanced view of each method's effectiveness. Future studies should also explore how these methods can be optimised to address specific industry needs and job roles.

6.0 Conclusion and Recommendation

Conclusion

This study concludes that the drill method, emphasizing practical, hands-on experience, notably enhances officers' problem-solving skills, adaptability, and overall job performance. This method effectively translates theoretical knowledge into practical skills for complex real-world situations. Conversely, the induction method facilitates a smooth integration of recruits by aligning their skills with job requirements through structured orientation and mentoring, thus improving job performance.

Recommendations:

Based on the findings, the study recommends expanding and enhancing the drill method by integrating more practical scenarios and simulations to better prepare officers for real-world situations. Additionally, the induction method should be continuously updated to align with current job requirements and include ongoing support to integrate new skills effectively. Regular evaluation and refinement of these training methods are essential to ensure they remain relevant and impactful. Further research at a national level is also recommended to explore the broader applicability and effectiveness of these training approaches across different regions and context

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Enhancing Labour Market Opportunities for Higher Learning Graduates: An Examination of Responsive Curriculum Strategies in Dodoma City

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Abstract

The transition from higher education to the labor market remains challenging for graduates, especially in rapidly evolving economies. This study investigates the effectiveness of responsive curriculum strategies aimed at aligning educational outputs with labor market demands in selected institutions in Dodoma City, Tanzania. Drawing on Human Capital Theory, which links education and skills acquisition to productivity and earnings, the research adopts a convergent parallel mixed-methods design to integrate quantitative and qualitative data from 160 participants, including students, graduates, lecturers, employers, and representatives from regulatory bodies such as the Ministry of Education, NACTVET, and TCU. Quantitative data analysis, using descriptive and inferential statistics, evaluated the impact of assessments and curriculum resources on labor market readiness, while qualitative content analysis explored themes related to assessment effectiveness and industry collaboration. The findings reveal a significant gap between academic preparation and market requirements, indicating the need for curriculum reforms that emphasize practical skills, modern technologies, and stronger partnerships between educational institutions and industry stakeholders. Key recommendations include regular curriculum updates, real-world challenges in assessments, and enhanced partnerships to support graduate employability and regional economic development. This research provides insights for Tanzanian policymakers and educators, underscoring the importance of adaptable curricula to meet labor market demands. The study also highlights potential implementation challenges. These include limited institutional funding, resistance to curriculum change, and insufficient resources for modern teaching technologies. Addressing these challenges will require concerted efforts from policymakers, academic institutions, and industry leaders. Future studies should explore the long-term impact of responsive curricula on career progression and the role of digital transformation in curriculum design.

Keywords: *Responsive Curriculum, Higher Learning Graduates, Labour Market Opportunities*

1.0 Introduction

1.1 Background of the Study

The labor market is continuously evolving, requiring higher learning institutions to adapt their responsive curricula to ensure graduates are well-prepared for employment opportunities (Ajjawi et al., 2018; Oraison et al., 2019). It is imperative to ensure that graduates have the skills and knowledge required to thrive in the labor market as digitalization and technological advancements change sectors and employment needs (Vreuls et al., 2022). In recent years, there have been substantial changes in the global labour market where The World Economic Forum (WEF) highlights the necessity of adaptable responsive curriculum strategies by highlighting the significance of matching education and training systems with the changing demands of the labour market (WEF, 2023).

The concept of a responsive curriculum emphasizes the alignment between educational programs and the changing demands of the labor market. It ensures that graduates possess the necessary skills, knowledge, and competencies to meet the evolving needs of employers (Gul & Khilji, 2021)). It entails creating and making modifications to learning practices, resources, and assessments to make sure they are inclusive and appropriate for every student (Biyela, 2019). By using a responsive curriculum strategy, trainers seek to provide a learning environment that respects and awards the many positions, cultures, and identities of their students.

In Africa, the challenges of unemployment and underemployment among higher-learning graduates are quite increasing despite increasing enrolment rates in higher-learning education, many graduates face difficulties in finding suitable employment (Ajjawi et al., 2018). In order to alleviate the unemployment issue, the African Development Bank (AfDB) emphasizes the significance of matching education and training programs with business demands (AFDB, 2023). Therefore, adopting responsive curricular techniques is essential to improving graduates' employment prospects in Africa.

Tanzania suffers substantial labour market difficulties, just like many other African nations despite initiatives taken by the government to broaden access to higher education. While the importance of responsive curricula has been recognized, there is a lack of specific research on how Dodoma City institutions can effectively implement these strategies to enhance labour market opportunities for higher-learning graduates. Existing studies, such as those conducted by Mbise (2017) and Munishi (2016), have explored employability and the factors contributing to the lack of skills among graduates in Tanzania. despite the recognized importance of responsive curricula in improving graduate employability, Tanzania's higher education sector, especially in

Dodoma, faces specific challenges that hinder the successful implementation of these strategies. While access to higher education has expanded, the lack of curriculum adaptation to current labor market needs remains a significant issue. Existing studies (Mbise, 2017; Munishi, 2016) have explored the challenges of graduate employability in Tanzania but have not sufficiently addressed the responsive curriculum strategies that could bridge the gap between education and the workforce in Dodoma.

The labor market in Dodoma faces unique challenges that require targeted solutions. Local industries often express dissatisfaction with the preparedness of graduates, pointing to a mismatch between academic learning and the practical skills needed in the workplace. The region also faces limited collaboration between educational institutions, industries, and government bodies, further exacerbating the issue of insufficient internship and apprenticeship opportunities. In addition, outdated teaching materials and lack of access to modern technologies prevent students from developing the necessary competencies to succeed in an increasingly digital world.

This study seeks to address these issues by investigating the responsiveness of curriculum strategies in Dodoma City's higher learning institutions. Specifically, it examines three key aspects: assessments, curriculum resources, and industry collaboration. First, assessments are essential in evaluating whether graduates possess the skills and competencies that align with industry demands. By improving assessments to incorporate real-world challenges, students can be better prepared for the labour market. Secondly, curriculum resources, including up-to-date teaching materials and access to modern technologies, are necessary to ensure that graduates are equipped with the practical knowledge and skills that employers value. Finally, fostering stronger partnerships between educational institutions and industry stakeholders is crucial for providing students with internships, apprenticeships, and experiential learning opportunities.

This research will provide valuable insights into how Dodoma's higher learning institutions can enhance their curricula to better prepare graduates for the labor market. By identifying practical strategies for updating curricula, strengthening collaborations, and improving assessments, the study aims to offer actionable recommendations for policymakers, educators, and industry leaders to improve the employability of graduates in Dodoma City. Ultimately, this study contributes to regional economic development by ensuring that graduates are well-prepared to meet the demands of the labor market, fostering a stronger link between education and employment in Tanzania's evolving economy.

The study also acknowledges the challenges in implementing these strategies, including limited resources, resistance to change, and the need for coordinated efforts among educational institutions, industry players, and government bodies. These barriers must be addressed to successfully enhance labor market opportunities for graduates and reduce the unemployment rate in Dodoma. Furthermore, ongoing research is necessary to assess the long-term impacts of these curriculum strategies on graduate employability and career progression, ensuring that Tanzania's education system remains responsive to labour market needs.

1.2 Statement of the Problem

Higher education institutions must continuously adjust their responsive curricula to ensure graduates are equipped with the necessary skills for employment, given the ever-evolving nature of the labour market (Cheng et al., 2022). A responsive curriculum serves as a connection between education and real-world work conditions, facilitating dynamic and ongoing learning encounters. It also encourages students to embrace learning and equips them to be active and meet their needs. In the efforts to enhance the implementation of responsive curriculum in higher learning institutions, the government of Tanzania provides finance to enhance availability and improvement of resources such as facilities, learning materials and allocating of instructors to different institutions. Moreover, Education policy developed is responsible for guiding the standards to be given to higher learning students so as to meet labour market needs.

Despite the efforts made by the government to improve labour market opportunities, Tanzania is still faced with a problem of unemployment by most of the graduates caused by most of graduates not meeting what the labour market needs (Mgaiwa, 2021). While the importance of responsive curricula is recognized, there is a lack of specific research on effective implementation strategies in Dodoma City. The failure to create labour market opportunities for Higher Education Institutions is likely to result in hindering progress and innovation in various industries, placing increased burdens on faculty members and compromising the quality of education. Existing studies have explored employability and skill gaps among graduates in Tanzania but have not directly addressed responsive curriculum strategies (Mbise, 2014; Munishi, 2016). To address this gap, this study examines responsive curriculum strategies in selected Dodoma City institutions and their effect on enhancing labour market opportunities. The unique context and challenges faced by graduates in this location are considered. The research explores assessments, curriculum resources, and collaboration as dimensions of responsive curriculum strategies. Assessments evaluate graduates' knowledge and skills in alignment with industry requirements. Curriculum resources, including up-to-date materials and relevant technologies, ensure graduates have the necessary tools for employment. Collaboration between institutions, industry

stakeholders, and organizations fosters partnerships, internships, and experiential learning opportunities. By examining these strategies, the study provides insights and recommendations to improve graduates' preparedness for the labour market. The goal is to enhance labour market opportunities, promote employability, and contribute to the region's economic development.

1.3 Research Objectives

1.3.1 General Objective

The primary objective of this study is to investigate the implementation of responsive curriculum strategies in enhancing labour market opportunities in Dodoma City, Tanzania.

1.3.2 Specific Objectives

1. To determine the role of current assessments adopted by higher education institutions to impart knowledge, skills and attitude in aligning graduates with industry requirements in Dodoma City.
2. To evaluate the influence of curriculum resources in enhancing graduates' preparedness for employment from Selected Higher Learning Institutions in Dodoma City.
3. To examine the influence of collaboration between higher Learning Institutions, industry stakeholders and government in enhancing employability opportunities for graduates in Dodoma City.

1.3.3 Research Questions/ Hypothesis

- i. What is the role of current assessments adopted by higher education institutions in imparting knowledge, skills and attitude to aligning graduates with industry requirements in Dodoma City?
- ii. What is the influence of curriculum resources in enhancing graduates' preparedness for employment from Selected Higher Learning Institutions in Dodoma City?
- iii. What is the influence of collaboration between higher Learning Institutions, industry stakeholders and government in enhancing employability opportunities of graduates in Dodoma City?

4 Significance of the study

The findings of this study offer targeted, practical benefits for multiple stakeholders, including policymakers, Higher Learning Institutions (HLIs), the public, and academicians, with a focus on addressing specific labor market conditions and educational frameworks in Tanzania, particularly within Dodoma. For policymakers, especially the Ministry of Education, Science, and Technology, the study provides actionable insights to guide the development of policies and initiatives aimed at enhancing academic infrastructure and resources, ensuring that

the education system meets the specific skill demands of the Tanzanian labor market. These insights can support regulatory changes that integrate job-ready skills into the national curriculum, promoting alignment with industry needs and addressing skill gaps that contribute to unemployment. For HLIs, the findings highlight best practices in adapting curricula to better prepare students for the job market, helping institutions develop targeted programs and partnerships with industry to improve graduates' readiness for employment. For the public, the study emphasizes the creation of graduates who are well-prepared to apply theoretical knowledge in practical contexts, thus contributing to economic growth and reducing unemployment by aligning educational outcomes with the workforce's needs. Finally, for academicians, the study opens avenues for further research on how curriculum design and educational policy can continuously evolve to support a dynamic labour market, offering an evidence-based foundation for ongoing improvements in education and workforce development across Tanzania.

2.0 Literature Review

2.1 Theoretical Framework

The study will be guided by Human Capital Theory as propounded by Becker (1962) and Rosen (1976). This is a widely recognized framework in labour economics and education. It suggests that individuals can increase their productivity and earnings potential through investments in education, training, and skills acquisition. In the context of the research, the theory can be applied to analyse how responsive curriculum strategies in Dodoma City institutions contribute to the development of graduates' human capital and, consequently, their labour market opportunities.

The study delves into key concepts derived from the Human Capital Theory, which hold great relevance in understanding the educational landscape in Dodoma City. One crucial aspect is education and training, examining how institutions of higher learning in the city invest in comprehensive educational programs and training initiatives. These endeavours aim to enhance the human capital of graduates, equipping them with the necessary skills and knowledge to thrive in their chosen fields. Another important consideration is the responsiveness of curriculum strategies to industry demands. By aligning educational offerings with the needs of the labour market, graduates are equipped with specific skills and knowledge that hold significant value in the job market. The study also explores the impact of these responsive curriculum strategies on labour market outcomes. As graduates' human capital improves through tailored education, their employability, earning potential, and opportunities for career advancement are positively affected. Finally, the research examines the Return on Investment for graduates. It investigates how their investment in education and the resources provided by Dodoma City institutions contribute to their future success in the labour market. By comprehensively analysing these key concepts, the study aims

to shed light on the intricate relationship between human capital development and educational institutions in Dodoma City.

By utilizing the Human Capital Theory as a theoretical framework, the research can explore the relationship between responsive curriculum strategies, graduates' human capital development, and their labour market opportunities, providing insights into the effectiveness of these strategies in enhancing graduates' employability and economic prospects in Dodoma City.

2.2 Empirical Review

2.2.1 Role of current assessments adopted by higher education institutions to impart knowledge, skills and attitudes in aligning graduates with industry requirements

Miller & Konstantinou (2022) conducted a study on how employability skills can be embedded through authentic assessments of business management undergraduate students in Central London. The study employed thematic and documentary analysis to obtain data from the selected sample. The study findings reveal the great importance of authentic assessment to provide opportunities for students to work on skills and projects which are relevant to them and recommends the establishment of modules and programs that can adopt a problem-based approach and not only solve a problem. Moreover, students should be able to engage with and reflect on the transferable skills developed through the assessments. However, the study conducted have only assessed on how authentic assessments can be used to embed employability and ignored the other assessment means such as performance assessment and formative assessments. Also, the study could have employed a large sample and not the small sample obtained from business management students only.

Also, (Mainga et al., 2022) conducted a study on graduate employability of business students through exploratory descriptive research study. The study considered communication skills, learning skills, positive attitudes and behavior and problem-solving skills as attributes towards employment. The findings indicate the importance of capturing students' views about their employability at graduation. Similarly, this study determines only the factors towards employability and does not point out on how those factors can be used towards meeting the needs of the market which will be covered by this study.

2.2.2 Influence of curriculum resources in enhancing graduates' Preparedness for Employment from Selected Higher Learning Institutions in Dodoma City.

A lack of technical and educational resources was identified as one of the reasons preventing technical graduates in Tanzania from reaching the demands of the labour market in a study done by (Munishi, 2016) in Tanzania. A study recommends an

adequate supply of teaching and learning resources from the government such as classrooms, well-equipped libraries, computer and ICT facilities. Moreover, the study suggests the review and improvement of curricula so as to meet the needs of the market. The study pointed out the factors and recommendations but did not assess on how the given factors can be used to enhance labour market opportunities which will be covered by this study at hand.

Another study done in Kenya on Resource Utilization and Curriculum Implementation in Community Colleges in Kenya (Kigwilu & Akala, 2017), found that these community colleges' insufficient physical facilities, teaching and learning resources, underutilization, and other core facility and resource deficiencies impede effective teaching and learning. The study employed a sample of 172 students 18 teachers and four directors of community colleges. Community colleges should therefore not only provide enough physical facilities and resources but also maximize their use in order to implement curricula effectively. Tanzania differs from other nations where research have been done in terms of institutional structure, demographics, economics, politics, and sociocultural practices. As a result, there is a need to conduct a study in Tanzania because the research findings are unrelated to the Tanzanian context.

2.2.3 Influence of collaboration between higher Learning Institutions, industry stakeholders and government on employability opportunities of graduates.

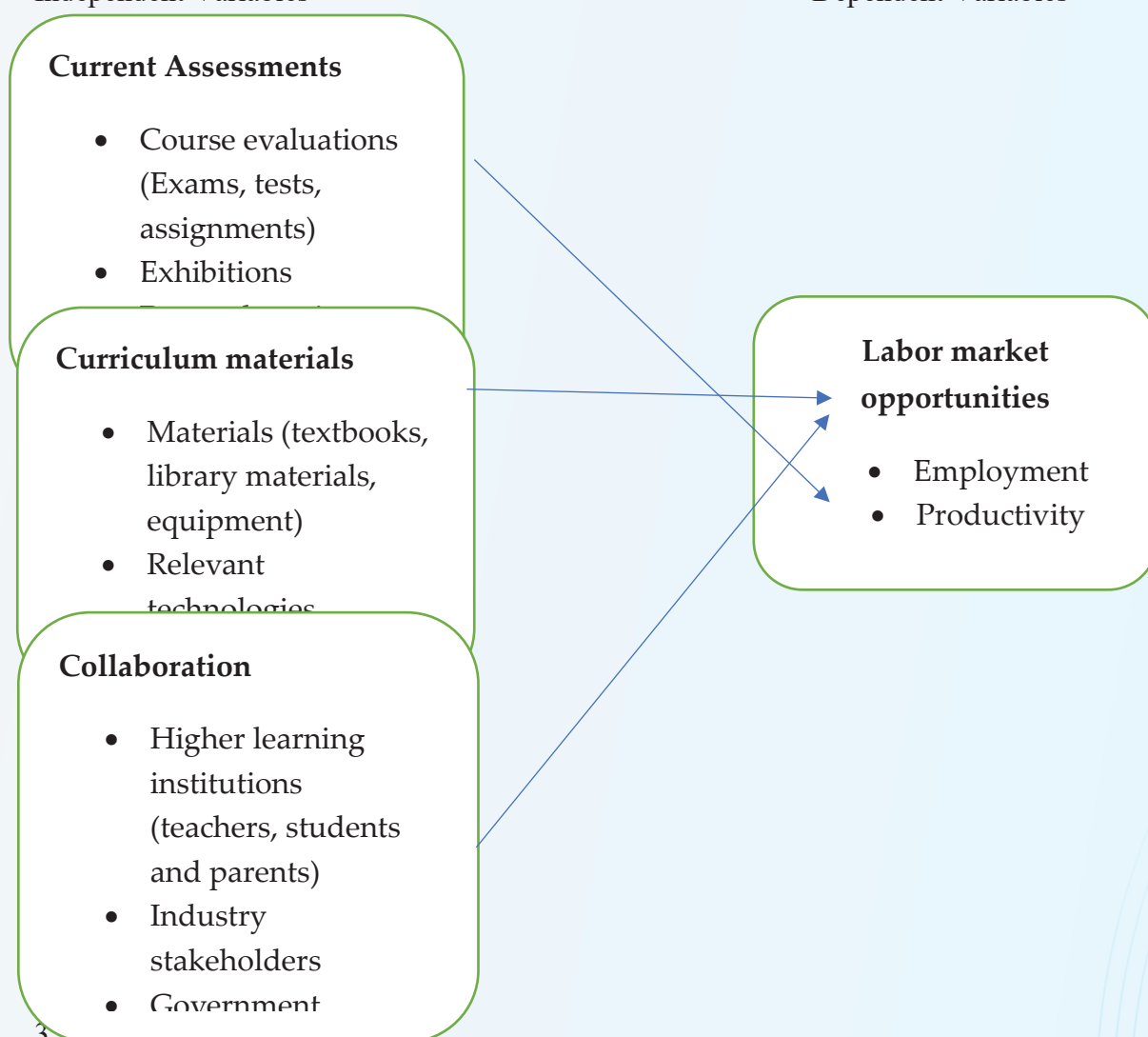
A study conducted in Australia by Oraison et al. (2019) on if universities prepare students for employment by examining university's graduate attributes with market needs. the study employed a thematic analysis and findings revealed differences between graduate attributes and the employability criteria in nursing, psychology and education courses at an Australian University. The study suggests on the development of future graduate attributes that better reflect preparedness for the workforce and collaboration with workplaces about the increasing need for entry-level positions. The study focused on attributes needed towards employment and did not examine how the said attributes can be used towards meeting the needs of the labour market which will be filled by this study. Also, the study employed qualitative data whereas the study at hand will employ both qualitative and quantitative data.

2.3 Conceptual framework

The study employs a conceptual framework that draws upon a comprehensive review of both theoretical and empirical literature. This framework establishes the anticipated relationship between the variables under investigation, providing a solid foundation for the research.

Figure 1: Conceptual framework
Independent Variables

Dependent Variables



The proposed study employed a mixed-methods approach to gather comprehensive and in-depth data on the responsive curriculum strategies implemented in selected higher learning institutions in Dodoma City and their impact on enhancing labour market opportunities for graduates. This approach enabled a thorough exploration of the research questions and provided a more holistic understanding of the topic (Creswell 2014). The quantitative approach involved questionnaires administered to graduates and students to gather quantitative data on the effectiveness and perceptions of the responsive curriculum strategies (Smith et al., 2022; Johnson, 2019). The qualitative approach involved interviews with key stakeholders, including lecturers, employers/ government, and graduates, to gain in-depth insights into their experiences, perspectives, and challenges related to responsive curriculum implementation (Jones,

2018; Davis & Wilson, 2021). The data obtained from the interviews were analyzed through content analysis to identify key themes and patterns (Miller, 2017).

3.1.1 Integration of Quantitative and Qualitative Data

The quantitative and qualitative data collected through the questionnaires and interviews/focus group discussions were integrated to provide a comprehensive understanding of the responsive curriculum strategies and their impact on enhancing labour market opportunities for graduates. This integration involved comparing and contrasting the findings from both data sources to gain a more holistic perspective on the research questions (Thomas & Johnson, 2023)

3.2 Research Design

The study adopted a convergent parallel mixed-methods design to give room for both quantitative and qualitative datasets to interact and to provide a deeper understanding of the phenomenon using both strands. The decision to use a convergent parallel mixed-methods design is built on Creswell (2014) that a convergent mixed-methods design should be considered when the focus is on gaining a deeper understanding of the phenomenon through both quantitative and qualitative strands, especially when data are collected using the same or parallel variables, constructs, or concepts. The present study used this design since similar variables were used on both qualitative and quantitative sides to yield comparable and easy-to-measure findings. In this regard, the same concepts measured through quantitative tools were also focused on during the qualitative data collection phase.

3.3 Participants and Study Area

The study was done in Dodoma region since it is the headquarters of most government stakeholders responsible for education and has both private and public higher learning institutions. The population of the study were students, graduates, and lecturers from the Institute of Rural and Development Planning and College of Business Education and regulatory authorities such as the NACTVET, and TCU. These institutions and stakeholders were purposefully chosen due to their roles in curriculum development, implementation, and advising on educational policies, making them directly relevant to the study's objectives. Moreover, the selection of Higher Education Institutions included both private and public universities together with a college which are very aware of the importance of a responsive curriculum in enhancing labour market opportunities.

3.4 Sampling Technique

The study used a purposive sampling technique to select higher learning institutions in Dodoma City that have implemented responsive curriculum strategies. The sample

size was 160 and includes students, graduates and lecturers participating in the study from Dodoma City. All respondents were purposively sampled to ensure representation from various disciplines and sectors (Brown & Wilson, 2019).

3.5 Data Collection Tools

An in-depth interview and questionnaires were employed to collect qualitative and quantitative data from students, graduates, HLIs lecturers, employers, and regulatory authorities such as the Ministry of Education, NACTVET, and TCU. The reason behind choosing the aforementioned entities is that they are either users, developers, or advisors on curriculum development. Interview guide questions were constructed and used to collect data because they explored detailed information and a deep understanding of a phenomenon under study that has not been explored or is difficult to be practically explain by existing theories (Creswell, 2014; Yin, 2014).

3.6 Data Analysis

The data analysis for the research objectives involved both quantitative and qualitative approaches.

For objective 1, the quantitative data collected through questionnaires were analysed using descriptive and inferential statistics to explore the role of assessments in aligning graduates' knowledge and skills with industry requirements (Smith et al., 2022). Descriptive statistics were used to analyse the demographic information including the sex of respondents, age, occupation and experience which were provided in the questionnaires. The qualitative data obtained through interviews were analysed through content analysis to gain deeper insights into the effectiveness of assessments. The raw data collected was transformed into themes in relation to the research objectives and conceptual framework of the study (Braun & Clarke, 2020). The descriptive and inferential outputs were presented in tables, figures and charts to elaborate the independent and dependent variables of the study.

For objective 2, the quantitative data collected through questionnaires were analysed descriptively and inferentially to evaluate the availability and utilization of curriculum resources in enhancing graduates' preparedness for employment (Brown & Lee, 2020).

Finally, for objective 3, the quantitative data collected through questionnaires were analysed descriptively and inferentially to investigate the extent of collaboration between higher education institutions, industry stakeholders, and organizations and its contribution to improving labour market opportunities for graduates (Johnson, 2019). The qualitative data obtained through interviews were analysed through content analysis to explore the processes and challenges of collaboration and its impact on graduates' labour market outcomes (Braun & Clarke, 2020).

4. Results And Discussion

4.1 Social demographic characteristics of respondents

The study looked at several variables on demographic characteristics, such as gender, education qualification, college, age, working experience and occupation as shown in Table 1. This section provides an overview of the respondents' demographic profile and provides insights into the distribution of important demographic variables within the study population. In terms of gender representation, the data reveal a notable gender balance, with the majority of respondents being female (55.2%), while males accounted for a slightly smaller proportion (44.8%). Examining the education qualification of respondents, the data revealed that most respondents (67.2%) have a diploma level followed by those with other qualifications accounting for 26.4%. Bachelor's and Master's degrees accounted for 2.4% and 4.0% of the total respondents respectively. It was also seen that the majority of respondents are unemployed (77.6%) while only 18.4% and 4.0% are self-employed and employed respectively. The average age of respondents was 23.49 with minimum age of 18 and maximum age of 30 years. Regarding working experience, the average is 0.62 years while the maximum was 10 and the minimum was 0 years. Since the study was conducted at two colleges, 50% of respondents were from Mipango while the remaining 50% were College of Business Education (CBE).

Table 1: Social demographic characteristics of respondents

Variable		Frequency (N)	Percent (%)
College	Mipango	125	50.0%
	CBE	125	50.0%
Sex of respondents	Male	112	44.8%
	Female	138	55.2%
Education level	Primary	0	0.0%
	Secondary	0	0.0%
	Diploma	168	67.2%
	Bachelor Degree	6	2.4%
	Master's Degree	10	4.0%
	PhD	0	0.0%
	Others	66	26.4%
Please indicate your occupation	Employed	10	4.0%
	Self-employed	46	18.4%
	Unemployed	194	77.6%
	Retired	0	0.0%

Age	Mean	23.49
	Std. Deviation	2.633
	Range	12
	Minimum	18
	Maximum	30
Experience	Mean	.62
	Std. Deviation	1.576
	Range	10
	Minimum	0
	Maximum	10

4.2 Assumption of regression

Generally, these steps were essential to validate the assumptions of regression analysis, ensuring that the data met the necessary conditions for reliable and interpretable results. By addressing each assumption, the researcher confirmed that the regression model was appropriate for examining the relationship between SME's growth and branding, providing a solid foundation for the subsequent analysis.

4.2.1 Normality of residuals

One of the most important assumptions in regression is the normality of residuals. To check this assumption, a histogram of residuals was used. A normal curve was added to check whether residuals are normally distributed (have bell-shaped curve). Figure 1 shows a histogram of residuals where the distribution of residuals has a rough bell shape as shown by a red line indicating that residuals are normally distributed.

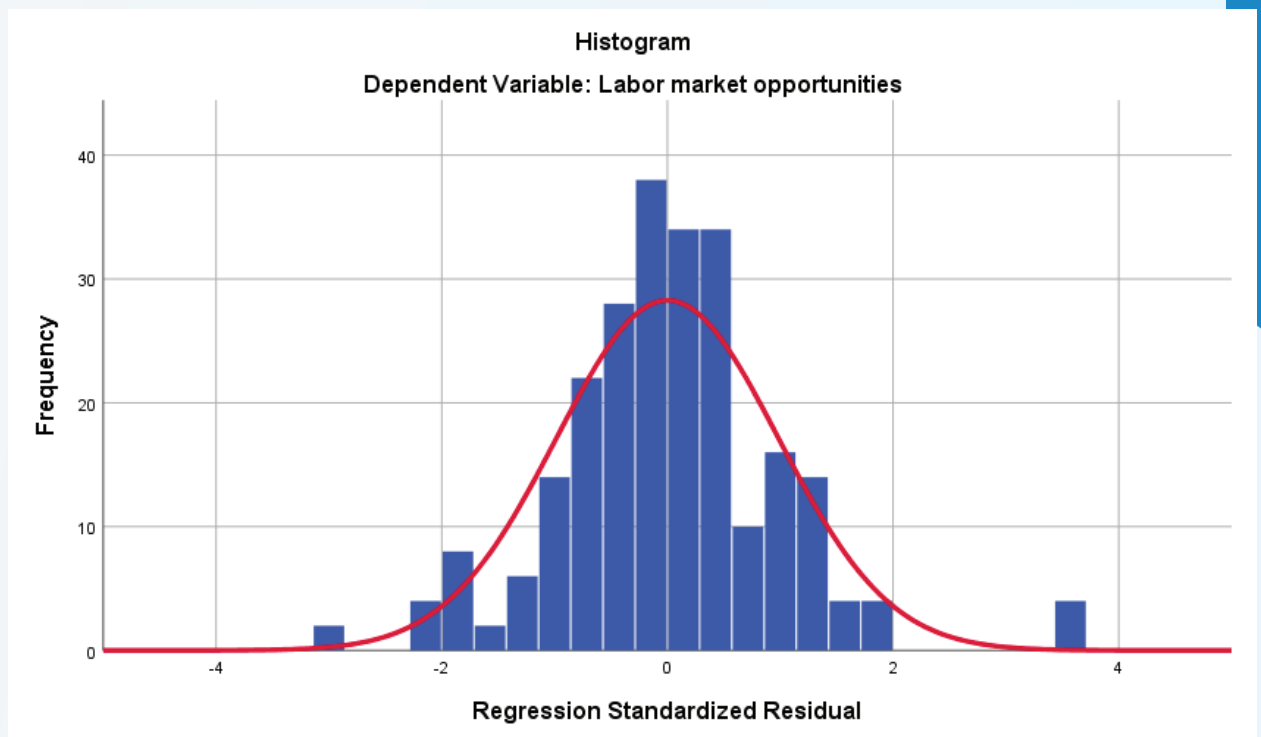


Figure 1: Normality of residuals

4.2.2 Linear Relationship Between Explanatory Variables and Response Variable.

Regression analysis also assumes that there exists a linear relationship between each explanatory variable and response variable. P-P plots were plotted to check this assumption. To show a linear relationship, the value of residuals should fall around 45° lines. Figure 2 shows P-P plots where values of residuals fall around 45° indicating that there was a linear relationship between independent variables and response variables.

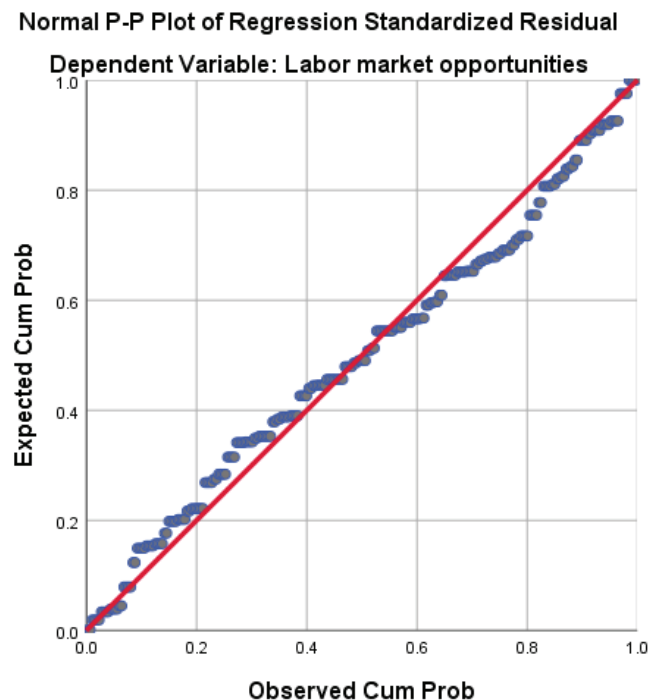


Figure 2: P-P plot for a linear relationship between variables

4.2.3 Multi-collinearity among explanatory variables

Multicollinearity occurs when two or more explanatory variables are highly correlated to each other, such that they do not provide unique or independent information in the regression model. If the degree of correlation is high enough between variables, it can cause problems when fitting and interpreting the model. To check that there is no severe multicollinearity among the explanatory variables, Variance Inflation Factor (VIF) was used. VIF values are obtained by taking the reciprocal of tolerance values. VIF values below 10 indicates that there is no multicollinearity between independent variables. The best option is to drop variables with VIF values of 10 and above since their contribution to the model are already represented by other variables. Table 2 shows that VIF values are below 10 indicating that there was no multicollinearity among independent variables in models.

Table 2: Variance Inflation Factor for multicollinearity assumptions

Variable	Collinearity Statistics	
	Tolerance	VIF
CA1	.497	2.010
CA2	.469	2.130
CA3	.501	1.994
CA4	.514	1.944

CA5	.494	2.023
CA6	.540	1.851
CA7	.498	2.009
CA8	.494	2.023
CM1	.495	2.022
CM2	.396	2.527
CM3	.690	1.450
CM4	.464	2.153
CM5	.531	1.882
CM6	.519	1.928
CM7	.620	1.613
CM8	.505	1.982
CH1	.795	1.258
CH2	.839	1.192
CH3	.641	1.561
CH4	.480	2.085
CH5	.593	1.686
CH6	.561	1.784
CH7	.660	1.514
CH8	.822	1.217

4.2.4 Autocorrelation

The autocorrelation assumption was checked using Durbin-Watson (DW) statistics. The DW statistic ranges from zero to four, with a value around 2.0 indicating zero autocorrelation. Values below 2.0 mean there is positive autocorrelation and above 2.0 indicates negative autocorrelation. The tolerable range of autocorrelation is valued between 1.5 and 2.5. Results in Table 3,4 and Table 5 show that the DW statistics of 1.854, 2.042 and 1.736 respectively (all of them being around 2.0) indicate that there was no autocorrelation.

4.3 Determining the role of current assessments adopted by higher education institutions to impart knowledge, skills and attitudes in aligning graduates with industry requirements in Dodoma City.

The full names of variables in Table 3 are CA1: The current assessments adequately prepare you to adapt to the rapidly changing market demands. CA2: The skills and knowledge gained through current assessments make you competitive in the job market. CA3: The skills assessed through tests align with what will be required in the industry market. CA4: Assignments are beneficial in deepening knowledge and skills.

CA5: Exhibitions and practical demonstrations are useful in applying theoretical concepts to real-world scenarios. CA6: Research projects are effective in sharpening analytical and problem-solving skills. CA7: Case study analyses are important in improving decision-making abilities in professional settings. CA8: The current assessment methods adequately prepare you for the practical aspects of your future career.

The summary of the regression model is presented in Table 3. The coefficient of determination (R-squared) measures the extent to which total variation in the dependent variable is explained by the model. As it can be observed from Table 3, an R-squared value of 0.353 was obtained. This means that 35.3% of the variation in labor market opportunities is explained by the model. Generally, the model was significant (F value=16.030, p value= 0.003) as shown in Table 3.

The coefficient values in regression Table 3 quantify the change in labour market opportunities as a result of a unit change in one independent variable provided other variables are kept constant. Only four variables: CA4, CA5, CA6 and CA8 were found to be significant predictors (p-value less than 0.05) of labor market opportunities. CA4 was found to be statistically significant at $p=0.000$ as shown in Table 3. The coefficient for CA4 is 2.550 meaning that a unit increase in CA4 results in a 2.550 increase in labour market opportunities provided other factors are held constant. Explanation for CA5, CA6 and CA8 is the same as those of CA4.

Table 3: Role of current assessments adopted by higher education institutions

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
Constant	8.185	.819			9.998	.000
CA1	.125	.170	.055		.735	.463
CA2	.333	.184	.139		1.809	.072
CA3	.221	.182	.090		1.215	.226
CA4	2.550	.224	.180		2.461	.015
CA5	1.068	.195	.408		5.463	.000
CA6	1.774	.187	.296		4.141	.000
CA7	.277	.193	.107		1.441	.151
CA8	2.386	.192	.150		2.010	.046
R squared = 0.353			Durbin-Watson=1.854			
F value = 16.030			Sig=0.000			

These findings are consistent with Kessy's (2020) study, which highlighted that curricula often lack the practical components essential for success in the labour market.

Kessy's research identified the curriculum as a significant factor contributing to the challenges graduates face when entering the workforce. The absence of hands-on, industry-relevant training in educational programs leaves students ill-equipped to meet employers' expectations, underscoring the need for curriculum reform that integrates practical skills aligned with labour market demands.

4.4 Evaluating the influence of curriculum resources in enhancing graduates' preparedness for employment from Selected Higher Learning Institutions in Dodoma City.

The full names of variables in Table 4 are CM1: The course materials (textbooks, handouts, online resources) are sufficient for understanding the subject matter. CM2: The equipment and facilities provided by the institution are adequate for practical learning experiences. CM3: The lectures delivered are engaging and promote active participation from students. CM4: Integrating computer software and other relevant technologies in your curriculum prepares you for the demands of the workforce. CM5: Adequate training and support on how to effectively utilize computer software and other relevant technologies required in your field is provided. CM6: The technology used in the classroom (computers, projectors, interactive tools) enhances my learning experience. CM7: The support provided to students outside of scheduled class hours is sufficient for addressing their academic needs. CM8: Access to updated and comprehensive library materials has contributed to your preparedness for employment.

The summary of the regression model is presented in Table 4. The coefficient of determination (R-Squared) measures the extent to which total variation in dependent variable is explained by the model. As it can be observed from Table 4, R-Squared value of 0.482 was obtained. This means that 48.2% of the variation in labour market opportunities is explained by the model. Generally, the model was significant (F value=27.780, p value= 0.000) as shown in Table 4.

The coefficient values in regression Table 4 quantify the change in labour market opportunities as a result of a unit change in one independent variable provided other variables are kept constant. Only five variables: CM2, CM3, CM4, CM5 and CA8 were found to be significant predictors (p-value less than or equal to 0.05) of labour market opportunities. CM2 was found to be statistically significant at $p=0.008$ as shown in Table 4. The coefficient for CM2 is 2.492 meaning that a unit increase in CM2 results in a 2.492 increase in labour market opportunities provided other factors are held constants. Explanation for CM3, CM4, CM5 and CA8 is the same as those of CM2.

Table 4: Influence of curriculum resources in enhancing graduates' preparedness for employment

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
Constant	7.369	.753			9.787	.000
CM1	.043	.164	.018		.265	.791
CM2	2.492	.183	.199		2.690	.008
CM3	3.628	.145	.243		4.332	.000
CM4	1.599	.158	.259		3.791	.000
CM5	1.384	.195	.126		1.970	.050
CM6	.118	.165	-.046		-.715	.475
CM7	.085	.152	-.033		-.557	.578
CM8	2.437	.200	.143		2.185	.030
R squared = 0.482			Durbin-Watson=2.042			
F value = 27.780			Sig=0.000			

The findings correspond with (Mgaya, 2023) study on the challenges facing learners in acquiring employability competencies under the Competency-Based Education and Training (CBET) approach in Tanzania's Vocational Education and Training Centres. Mgaya's research identified the lack of adequate learning resources as a key obstacle to effectively preparing students for the labour market. This shortage hampers the ability of vocational training institutions to provide students with the practical skills and hands-on experience necessary to meet the demands of employers in today's competitive job environment.

4.5 Examine the influence of collaboration between higher Learning Institutions, industry stakeholders and government in enhancing employability opportunities for graduates in Dodoma City.

The full names of variables in Table 5 are CH1: I am familiar with the collaborations between my institution and industry stakeholders. CH2: I have participated in internship or work placement programs facilitated by my institution. CH3: Practical experiences, such as internships or industry projects, are important for my future career. CH4: I have received guidance or support from my institution regarding career planning and job search strategies. CH5: I would be interested in more opportunities to interact with industry professionals during my academic studies. CH6: I believe that collaboration between my institution and industry enhances the quality of my education. CH7: Networking opportunities provided by my institution for connecting with potential employers are valuable. CH8: Opportunities for internships, apprenticeships, or industry projects during my academic tenure are valuable.

The summary of the regression model is presented in Table 5. The coefficient of determination (R-Squared) measures the extent to which total variation in dependent variable is explained by the model. As it can be observed from Table 5, R-Squared value of 0.419 was obtained. This means that 41.9% of the variation in labor market opportunities is explained by the model. Generally, the model was significant (F value=21.143, p value= 0.003) as shown in Table 5.

The coefficient values in regression Table 5 quantify the change in labour market opportunities as a result of a unit change in one independent variable provided other variables are kept constant. Only three variables: CH2, CH5 and CH8 were found to be significant predictors (p value less than 0.05) of labor market opportunities. CH2 was found to be statistically significant at $p=0.038$ as shown in Table 5. The coefficient for CH2 is 3.100 meaning that a unit increase in CH2 results to 3.100 increase in labor market opportunities provided other factors are held constants. Explanation for CH5 and CH8 is the same as those of CH2.

Table 5: the influence of collaboration between higher Learning Institutions, industry stakeholders and government

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
Constant	9.825	.891			11.026	.000
CH1	.247	.190	.072		1.297	.196
CH2	3.100	.048	.113		2.083	.038
CH3	.222	.158	.087		1.402	.162
CH4	.250	.176	.102		1.419	.157
CH5	2.868	.158	.356		5.509	.000
CH6	1.176	.165	.071		1.069	.286
CH7	.068	.155	.027		.437	.662
CH8	1.374	.153	.492		8.961	.000
R squared = 0.419			Durbin-Watson=1.736			
F value = 21.143			Sig=0.000			

The findings align with Kamuhabwa (2019) study on the challenges of graduates' employability in Tanzania, which emphasized the importance of collaboration between various stakeholders to improve employability prospects for graduates. Kamuhabwa's research highlights the critical need for partnerships between educational institutions, government bodies, and industries to create more relevant and practical learning opportunities that equip graduates with the skills needed in the modern workforce. Such collaboration can bridge the gap between education and

employment, ensuring that graduates are well-prepared to meet the demands of the job market.

The interview responses reinforce these findings, with customers emphasizing the importance of practical demonstrations through exhibitions and research projects. One interviewee in Dodoma City expressed that these initiatives are highly effective in aligning graduates with the needs of the industry as:

"Exhibitions and hands-on research projects are essential because they help graduates gain the practical skills that our industry requires. These activities not only showcase graduates' abilities but also provide businesses with an opportunity to see how they can apply academic knowledge to solve real industry problems."

Another respondent said

"When graduates take part in practical demonstrations and research, it gives us a clear view of their abilities and how they can contribute to solving industry challenges. This kind of hands-on experience is exactly what employers are looking for, as it prepares graduates for the demands of the workplace and helps close the gap between what they learn and what we need."

The observation from another respondent was consistent to the above statement. During the interview respondent says:

"These activities are vital for graduates because they provide the hands-on experience that theory alone can't offer. When we see graduates involved in these projects, we know they're better prepared to tackle real-world problems. It's not just about knowledge; it's about applying that knowledge effectively in the industry, which is exactly what employers like us are looking for."

5.0 Conclusion and Recommendation

Conclusion

The study contributes to the body of knowledge by providing insights into how responsive curriculum strategies can enhance labour market opportunities for higher learning graduates in Dodoma City, Tanzania. The findings reveal that while assessments, curriculum resources, and collaboration between institutions and industry stakeholders have a positive impact, there is still a significant gap between academic outputs and market needs. By focusing on practical skills, up-to-date resources, and stronger industry collaborations, higher learning institutions can better prepare graduates for employment. This study emphasizes the importance of continuously updating curricula to reflect the dynamic labour market and highlights the need for stronger partnerships between educational institutions and industries. Furthermore, this research offers valuable recommendations for both academic institutions and policymakers in Tanzania, paving the way for further investigations into the long-term

effects of these curriculum strategies on graduate employability and career progression.

Recommendation and Areas for Further Studies

To enhance labour market opportunities for graduates, higher learning institutions should establish a systematic process for regularly updating curricula to align with specific, evolving industry requirements, ensuring that current technologies and practical skills are integrated. Moreover, forming more targeted and structured partnerships between institutions, industries, and government bodies is crucial for expanding quality internship and apprenticeship opportunities, thus providing graduates with essential hands-on experience. Additionally, assessment methods should incorporate real-world challenges, enabling students to develop competencies and problem-solving skills directly aligned with market demands. Furthermore, institutions must prioritize investments in state-of-the-art teaching resources, technologies, and practical facilities, ensuring that graduates are better equipped for employment. Finally, policymakers should introduce specific government incentives to support and incentivize collaboration efforts that promote graduate employability. Future studies could explore the long-term impact of responsive curricula on graduate career progression and the role of digital transformation in shaping curriculum strategies, emphasizing monitoring and evaluating these effects over time.

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The Effect of Job Analysis on the Employee's Performance at Higher Learning Institutions: A Case of St. John's University of Tanzania

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Abstract

This study focused on the effect of job analysis on the employees' performance at the SJUT. Specifically, the study aimed at examining the effect of job analysis (adaptability and innovation) on the employee's performance at St. John's University of Tanzania. The study adopted the mixed research approach and the case study research design. The study was conducted at the SJUT where the academic staff was involved and it was guided by the Resource-Based View (RBV) and Equity theory. The purposive sampling and the Yamane (1976) formula in sampling and sample size determination respectively. The survey methods, interview, and documentary review were used to gather data through tools like questionnaires, interview guides, and documentary checklists respectively. The data were analyzed by descriptive statistics, content analysis, and multiple regression with the aid of Statistical Package for Social Sciences (SPSS). The study revealed job analysis (adaptability and innovation) had a positive and significant effect on the employee's performance expressed in the form of task timely completion, meeting targets, and quality service delivered. The researcher recommended that the government should use the findings to improve educational policies. Meanwhile, the researchers recommend that SJUT management should use the findings to enhance the human resources policy and recruitment policies to secure better employees.

Keywords: *Recruitment Practices, St. Job University, Employees' Performance*

1.0 Introduction

1.1 Introduction to the Problem

Recruitment has been a significant focus of scholarly research in recent years. Recruitment practices play a pivotal role in the success of organizations. They are essential for attracting and selecting the right talent to meet organizational objectives. According to Johnson & Lee (2023) effective recruitment practices offer benefits such as improvement of organizational performance through hiring employees who possess the necessary skills and competencies, organizations can enhance productivity, innovation, and overall performance.

Likewise, effective recruitment practices enhance employee satisfaction by ensuring that individuals are placed in roles that align with their skills and interests. Additionally, Abbas et al. (2022) noted that effective recruitment shape and maintain a positive organizational culture by attracting candidates who share the company's values and mission and lower lower turnover rates, reducing the costs associated with hiring and training new staff.

The relationship between recruitment practices and employee performance is a complex and multifaceted issue that has been the subject of extensive research (Abbas *et al.*, 2022). Understanding this relationship is crucial for several reasons. Organizations that can effectively recruit and retain top talent are more likely to achieve their strategic goals and outperform their competitors (Arif *et al.*, 2021).

Moreover, effective recruitment practices can contribute to employee satisfaction, engagement, and overall well-being and play a positive role in promoting social equity and equality. The research on recruitment practices therefore, can inform the development of policies and regulations that support effective talent management. By understanding the role and rationale of recruitment practices and employee performance, organizations can develop effective strategies to attract and retain top talent, thereby driving organizational success.

Studies have shown that effective recruitment practices can significantly impact employee performance, including productivity, job satisfaction, and retention. According to Armstrong (2017) human resources are among the most important assets in organisations. Human resource management (HRM) practices, such as recruitment and selection, training and development, and compensation, play a crucial role in improving employee performance. Alkhalilah and Mjlae (2023) found this to be true in Ukrainian universities.

Recruitment is a process of identifying and attracting suitable candidates to fill vacant positions. It involves assessing organizational needs and finding the best individuals to meet those needs. Universities, as institutions of higher education, play a vital role in society. They educate future leaders, conduct research, and contribute to technological advancements. The success of universities depends largely on the performance of their staff.

Employee performance is a critical issue for organizations worldwide. It affects economic development, national income, and living standards. Organizations strive to improve employee performance at all levels to achieve their goals. Recruitment practices can significantly impact employee performance. However, this relationship has not been extensively studied in the Tanzanian context. This study aims to

investigate the effects of recruitment practices on educational quality at St. John's University of Tanzania.

1.2 Statement of the Problem

Studies have shown that the human resource is the most valuable asset in any organization (Armstrong, 2017). In this manner the topic is too important in describing the the connectedness of workforce and organisation goal achievement as effective and efficiency of the workforce is a driver of organisational performance. However, recruitment is overwhelmed with myriad of unethical practices (Chigozie *et al.*, 2018) such as selection bias, selection discrimination, and favouritism due to existence of lack of reliability and objectivity which attracts competent applicants. To address this problem, the government established the TCU and NACTE to oversee the HLIs and ensure quality education in HLIs of 2019. Additionally, SJUIT had HRM manual and policy of 2007 for fixing conditions towards quality education provision without significant achievement. As retaining trainees with higher GPA is one among recruitment practices. However, it does not assure the university to get competent workforce there are many other required attributes than written examination class-mark passes. Thus, even other, practices, like competencies, job analysis and diversity are applicable, yet without supporting researches.

Unless, proper recruitment practices are adhered to, attracted personnel will foster poor employees' performance. As such universities will undeniably fail to play its novel role in the country of producing graduates with capability of solving social problems. But to solve the recruitment problem among private universities requires researched facts which currently are lacking due to limitedness of literatures in Tanzanian context. Therefore, there is a need to conduct a national and comprehensive study to assess the effect of recruitment practices on private universities employee performance. This study was designed to assess the effect of recruitment practices on the private universities' employee performance in Tanzania.

1.3. Literature Review

1.3.1. Equity Theory

Equity Theory, proposed by John Stacey Adams, emphasizes the principle of fairness in the workplace. It posits that employees expect a fair return for their contributions, which is known as the equity norm. This theory suggests that individuals assess their job satisfaction based on a comparison of their inputs (effort, skills, time) and outcomes (salary, recognition) with those of their peers. This comparison process is termed "social comparison," where employees evaluate whether they are being treated equitably relative to others in similar roles. When employees perceive inequity, they may respond by altering their inputs or outcomes mentally, adjusting their work effort,

or even leaving the organization altogether. The theory highlights that perceived unfairness can lead to decreased motivation and engagement among employees. Critics argue that Equity Theory is overly simplistic, as it does not account for the complexities of workplace dynamics, such as procedural fairness and the broader context of social interactions.

Despite these weaknesses the theory is supported by Kim & Beehr (2022) who found that employees who experience fairness in resource distribution and recognition report lower levels of stress and burnout. This study highlights how Equity Theory contributes to understanding mental health and motivation in workplace settings, showing that equity positively affects employee well-being. Similarly, Cho & Lewis (2021) found that perceptions of equity in compensation and workload were directly linked to job satisfaction and organizational commitment. Equally, Lambert et al. (2023) found that employees' perceptions of equity regarding workload distribution and recognition correlated with lower turnover intentions. Likewise, Wang & Tsui (2021) found that employees who feel fairly treated are more likely to collaborate and engage in teamwork. This study supports the theory's assertion that perceived fairness increases motivation and commitment. Organizations therefore, are encouraged to adopt equal opportunity policies to foster a sense of fairness among employees. The theory also underscores the importance of transparent communication regarding rewards and recognition to mitigate feelings of inequity.

1.3.2. Resource-Based View (RBV) Theory

RBV Theory posits that a firm's competitive advantage stems from its unique resources and capabilities. This perspective emphasizes that organizations should continuously evaluate their workforce to ensure they possess individuals with the right skills and competencies necessary for sustained success. The RBV suggests that the quality of human capital significantly influences an organization's performance. A core tenet of RBV is the idea of "barriers to imitation," which refers to the need for firms to protect their valuable resources from being easily replicated by competitors. This includes fostering strong working relationships and cultivating a skilled workforce. However, critics point out that RBV does not adequately explain how organizations maintain competitive advantages in rapidly changing environments. Despite these criticisms, RBV provides valuable insights into organizational behavior and human resource practices.

1.4. Empirical review

Job analysis plays a crucial role in understanding how adaptability and innovation contribute to employee performance. Several empirical studies have investigated the relationship between job analysis dimensions and performance outcomes across

different sectors, highlighting the significance of adaptability and innovation in driving employee success. Adaptability refers to the ability of employees to adjust to changing conditions, tasks, and environments. Studies indicate that adaptability is a key determinant of employee performance. For instance, Ahmad *et al.* (2021) examined the impact of adaptability on performance in the banking sector and found that employees who demonstrated high adaptability were more efficient in handling dynamic work environments. Similarly, Singh and Verma (2022) in a study on manufacturing firms, revealed that adaptable employees could better handle organizational changes, leading to improved productivity and overall job performance.

In education, Nguyen *et al.* (2022) found that adaptability among academic staff in universities contributed to better engagement with technological advancements in teaching methods, leading to improved educational outcomes. The research demonstrated that adaptability fosters resilience and flexibility, enabling employees to overcome work challenges and deliver better results. Likewise, innovation is defined as the ability to develop and implement new ideas, processes, or products, is another critical factor influencing employee performance. Zhou and Li (2020) explored the link between innovation and performance in tech firms, concluding that innovative employees contributed significantly to organizational growth and competitiveness by offering fresh perspectives and improving processes. Employees who engage in innovative practices are often more proactive, leading to enhanced problem-solving abilities and higher performance levels.

In the higher learning sector like university such as SJUT, Garcia *et al.* (2023) showed that innovative employees improved service delivery and patient care through the development of new methods and technologies. The study highlighted that fostering innovation among employees not only boosts their performance but also benefits the organization by promoting continuous improvement. Research has also focused on the combined impact of adaptability and innovation on employee performance. Hussein and Hassan (2021) found that employees who exhibit both high adaptability and a propensity for innovation are better equipped to deal with complex and evolving tasks. Their study on IT companies revealed that such employees outperformed their peers, as they were able to adjust to new technologies while simultaneously contributing to the development of novel solutions. However, these studies did not confine to the St. John's university of Tanzania.

Empirical evidence suggests that both adaptability and innovation, as dimensions of job analysis, have a positive and significant impact on employee performance. Adaptability enables employees to respond effectively to changing environments, while innovation drives the development of new ideas and practices that enhance

organizational performance. Encouraging these qualities through job analysis can lead to greater employee productivity and overall success within an organization.

1.5. General Research Objective

The general objective was to assess the effect of recruitment practices on the employee's performance in HLIs a case of St. John's University of Tanzania.

2. Materials and Methods

2.1 Research Approach

This study employed a mixed-methods research (MMR) approach, incorporating both quantitative and qualitative data collection, analysis, and interpretation. MMR allows for the integration of different philosophical paradigms—post-positivism and interpretivism—leading to a more comprehensive understanding of the research problem (Creswell, 2018).

2.2 Research Design

The study adopted a case research design, particularly focusing on a private university in Dodoma, Tanzania—St. John's University of Tanzania (SJUT). A case design was selected for its ability to provide detailed, context-specific insights from a smaller, well-defined sample (Creswell & Poth, 2018).

2.3 Study Area and Population

The research was conducted at SJUT due to its unique status as the only private, religious-owned university in Dodoma, making it an ideal representative of higher learning institutions (HLIs) in Tanzania. The target population included staff from 31 private universities.

2.4 Sampling Procedure and Sample Size

Purposive sampling was employed to select knowledgeable respondents, ensuring vital information was captured (Kothari, 2014). A sample of 93 academic staff members was calculated using Yamane's (1967) formula, ensuring statistical significance while accounting for potential errors.

$$n = N / (1 + N e^2)$$

N = finite Population 123 staff; n = sample size; e = sampling error (10%)

$$n = 123 / (1 + 123 \times (0.1)^2) = 93 \text{ respondents (academic staff).}$$

2.5 Data Collection

Both primary and secondary data were utilized. Primary data were collected through structured questionnaires and interviews, chosen for their ability to gather a wide range of insights efficiently (Creswell, 2014; Saunders et al., 2019).

2.6 Data Analysis

Descriptive statistics was employed to summarize respondent characteristics, presented through tables and graphs for clarity (Kumar, 2019). qualitative data were subjected to content analysis to derive thematic insights. Quantitative data were analyzed using multiple regression model as shown: $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$

Where:

- Y = Employee's Performance; β_0, β_1 , and β_2 are coefficients or constants; X_1 = innovation, X_2 = adaptability, and ϵ = error level.

3.0. Results

3.1. Codification of Respondents

The respondents were codified and presented in Table 1 to cope with the ethical standards of the research. The researcher used P1.P2, P3,Pn to represent various participants for interview.

3.2. Multiple Regression

The adjusted R square was 69.4% while the Durbin-Watson was 2.081

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.353	0.092		3.83	0.000
	Applicant's Innovations	0.529	0.065	0.519	8.17	0.000
	Applicant's Adaptability	0.351	0.062	0.358	5.63	0.000
Adj. R ² = 0.694						

Source: Researcher (2024)

Table 1: The Beta Coefficients on the Job Analysis and the Employee's Performance at SJUT

3.3. Discussion of the Findings

Table show that Adjusted R square was 69.4% which implies that independent variable which is job analysis (applicants' innovation and adaptability) influenced the employees' performance by 69.4%. the remaining portion was constituted by the exogenous variables which are beyond this study.

Likewise, Table 3 results the respective beta coefficients and probabilities at the significant level of 0.05 for applicants' innovation ($\beta = 0.529$ and P value = 0.000) and adaptability ($\beta = 0.351$ and P value = 0.000).

With regard to the applicant innovation, results show that a unit change in the applicant innovation results into increase in the employees' performance by 52.9%. this calls for the government to consider the applicant innovation to attain the goals in performance among employees. These results are in harmony with Hanif et al. (2021) studied innovation and employee performance: the mediating role of psychological well-being. The study aimed to establish the relationship between organizational innovation and employee performance. The findings revealed that innovation had a positive effect on the employees; performance.

Correspondingly, these results of this study complement the narration of participant P6 who opined that:

".....The applicant's innovation and adaptability attributes are crucial in imparting skills and competencies crucial to an employee to eagerly work and trigger performance.....these attributes are of great importance to the employee as they foster the completion of tasks within the prescribed time.....It is from this context that, during recruitment processes, organizations should consider both the applicant's innovation and adaptability attributes before officiating the employment to the applicants. These qualities (applicant's innovation and adaptability attributes) govern the employees' ability to meet the target in the working environment based on this importance they should be given great values....." (Interview/P6/ 2024).

On the other hand, study results are consistent with the postulations of Resource Based View (RBV) theory which holds that the competitive advantage of a firm is brought by the uniqueness of the firm's resources. Based on the RBV, firms have to continually evaluate their workforce to ensure that the right people with the right skills in the right places are always present in the institutions to bring about a stable competitive advantage against their competitive rivalry competitors (Lyons & Brennan, 2019).

Comparable study findings affirm that a major part of any firm's strength or weakness is determined by the caliber of the people employed and the quality of their working relationships (Gonzalez, 2020). It is recommended that these people should be identified due to their valuable contribution and protected from being picked by other employers or imitating their competencies. The theory, therefore, stresses that employers should aim at recruiting applicants with desirable innovative and adaptive skills to perform well in the organizations.

Implicitly, this means that the institution is required to recruit applicants with extensive levels of adaptability, innovation, and creativity to become the solution to problem providers rather than being problem creators. This will not only help performance but also bring in the competitive advantage of the organization during stiff competition posed by their competitors in a similar industry. The SJUT is required to recruit candidates with the capacity to adapt and innovate in research, constancy, and teaching meanwhile such applicants are required to have the ability to discover new ways of doing things in the academicians arena. By so doing this the STUT will be able to become competitive in terms of the academic arena compared to other high learning institutions in Tanzania.

Equally, P9 had similar sentiment to the P5 by opining that:

“.....Applicant’s innovation and adaptability attributes are very significant to the interviewees as they guarantee the employers to access their expertise demand. Thus, despite, the adequacy of job seekers, yet, recruitment processes have to be based on the applicant’s innovation and adaptability attributes. Thus, hands-on innovation and adaptability relate to the extensive innovation and creativity an employee had from previous work in other institutions. The presence of such experience is crucial for lowering the cost of the institution to train the new applicant as employers get already equipped employees. These two applicant’s innovation and adaptability attributes are highly demanded pre-point the expected quality of services offered by employees so they should be taken care.....” (Interview/P9/ 2024).

From this narration of the participant, it is noticeable that the applicant’s innovation and adaptability attributes are very crucial to the employees’ performance as the world currently demands higher technologies of innovation like Artificial intelligence (AI) as equitably higher technologies increase the productivities at a given level of inputs (costs).

Besides, P5 supplemented to the P9 where it was stated that:

“.....Naturally, their organizations need both applicants’ innovation and adaptability competencies. This is because both attributes reveal the competencies shown in the applicant’s working life. It is from this context that I strongly commend for possession of both the applicant’s innovation and adaptability competencies to ensure the timely completion of task in the university. This becomes even more imperative when considering innovation and design, especially in natural sciences where innovative skills cannot be avoided to ensure resources are prudently utilized.

Thus, applicant’s innovation and adaptability competencies are of paramount importance in the performance of the employees.....” (Interview/P5/ 2024).

In this regard, P5 confesses that both the applicant's innovation and adaptability competencies have a great effect on the employees' performance in organizations. Therefore, it indicates that to applicant's innovation and adaptability competencies produce significant and positive effects on the employees' performance in the higher learning institutions in Tanzania.

Based on the applicant adaptability, results show that a unit change in the applicant adaptability results into increase in the employees' performance by 35.1%. This calls for the government to consider the applicant adaptability to attain the goals in performance among employees. These observations of this study concur with Mulyani and Nurhadian (2023) in Indonesia studied employee performance: effects of competence and compensation. The purpose of this research was to determine effect of the employee competency and employee compensation on employee performance. The research used descriptive where the study found that both employee competency and compensation influenced employee performance by 7.2% and 70% respectively.

Harmoniously, these study findings thoroughly tally with the assumptions of the Equity Theory with assumptions based on equating the employee's performance with an expected fair return for what contributes to their jobs, a concept referred to as the equity norm; their inputs and outcomes with those of their co-workers and employees' perception on the inequality treatment. The comparison of the return in terms of financial rewards is equated to the adaptability and innovation of the applicants. Thus, upon assessment, the results are reflected in the level of motivation in performance in the work environment.

4. Conclusion and Recommendations

Conclusion

The study findings on the effect of recruitment practice showed that independent variables (applicant's innovation and adaptability) produced positive and significant effects on the employee performance at St. John's University of Tanzania. These findings indicate that applicants' innovations are highly demanded nowadays as the prerequisite for consideration of the applicant for employment during recruitment processes. These findings hold as an employee is an asset it is of great importance to consider his/her ability to innovate and be creative. The rationale for these findings is that innovativeness adds value to organizations as various firms need to gain a competitive advantage from human resources. Similarly, Applicant's adaptability is imperative to the employing firm as dynamics affecting business firms dictate that employees should be able to adapt ever-changing business environment. These changes are sometimes caused by geopolitical interest or macroeconomics where the firm exists.

In the context of these findings, there is a growing need to consider the inclusion of both applicants' innovativeness and adaptability aspects during recruitment processes to recruit valuable human resources with the capacity to produce desired results in the institutions.

It is from findings setting that recruitment based on a job analysis (applicants' innovativeness and adaptability) is imperative to be considered as such applicants possess required the skills, competencies, and attitudes that will be revealed during the performance of the employees.

Recommendations

The researcher recommends that the government through TCU to execute education policies with emphasis on the adaptability and innovations. Adherence to such policy will produce applicants or graduates with experience and testimonial (track record) which are important for employability and performance. Similarly, the researcher recommends that students should strengthen the job analysis (innovation and adaptability) aspect in their studies. Acquisition of such traits enables out competition in the vibrant labour market.

Suggestions for Further Research

Since the current study relied on the case study research design. First, this provides an avenue for future studies to consider other research designs. In so doing, the future study should determine whether study research designs would produce analogous study findings. Secondly, the current study was based on the only one university which was Saint John's University of Tanzania out of many universities. It is suggested that future studies should incorporate other universities in the country to get the full picture concerning the topic at stake. Thirdly, the fact the St. John's University of Tanzania is a religious and privately-owned institution; thus, it is evident that this study has not covered the public university. It is in the future recommended that public universities study similar topics to produce comparable study findings. Fourthly, the fact that this study adopted the mixed research approach. This implies that the researcher disregarded other research approaches such as quantitative and qualitative independently. This suggests that future studies should consider either a qualitative or quantitative approach to ascertain whether current study findings will change or remain unchanged.

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Exploring the Stakeholders' Engagement in The Fishery Supply Chain in Dar Es Salaam, Tanzania

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Abstract

Stakeholder participation in the fisheries supply chain in Dar es Salaam, Tanzania, is still very low despite the crucial role that stakeholders play, the efforts and initiatives taken by the government to improve fisheries business. This might have a significant detrimental impact on the fishing industry's supply chain, leading to tampered products and late product deliveries. The purpose of this study is to investigate how stakeholders are involved in the fisheries supply chain in Dar es Salaam, Tanzania, and to offer suggestions for how to increase their involvement. The study's main objectives are to determine the contributions of stakeholder participation, to look at the obstacles to stakeholder engagement, and to identify opportunities for stakeholder engagement in the Dar es Salaam fisheries supply chain. Based on the purposive and snowball sample size of 41 respondents, a qualitative case study design will be used with in-depth interviews, non-participant observation, open-ended questionnaires, and document reviews. The results reveal that a number of stakeholders are involved in the supply chain of fish. Among them include farmers, fishermen, collectors among others. Moreover, the study further reports that the entire fish supply chain is constrained by various constraints that when the government actively works with stakeholders will solve these challenges. The study recommends the institution of alternating fishing, cleaning the debris, and supporting fishermen and fish farmers financially.

Keywords: *Stakeholders, Engagement, Fisheries, Supply Chain*

1.1 Introduction

Globally, the participation of fishing industry stakeholders has a substantial impact on livelihood and, in particular, the availability of seafood (Issa et al., 2022). For instance, stakeholders, particularly fish dealers, fishermen, and collectors, participate in fishing activities in nations like Australia and Argentina by planning long-term for processing fisheries, sharing knowledge, and resolving conflicts between members who have

sustainable seafood certification (Kohne & Kohne, 2019). In a similar vein, since stakeholders in a nation like Norway are able to plan fish production and processing, sorting, facilitate transportation and storage, palletize, label, and sell a variety of fish, they become essential to those who are fully or partially engaged in the fishing industry (UNDP, 2022; SINTEF, 2022). However, a variety of obstacles have made it difficult for them to carry out a particular role in the fishing supply chain, including but not limited to a lack of coordination and interaction between agencies, a lack of reciprocity and trust between organizations, and power imbalances between stakeholders (Doria et al., 2021). Other challenges for managing fishery supply chains include overfishing, pollution, and habitat destruction (Wang & Wang, 2021); supplier innovation (Bergesen & Tveteras, 2019); pressure for industrial transformation; outdated technology; risks of extending the industrial chain; and a lack of discursive power (Yu & Yin, 2019).

Stakeholders in Africa are also active in the fish product supply chain by emphasizing the vital role that processing fish plays in transferring capital to end consumers, ensuring food security, supporting livelihoods, and advancing the continent's development goals (Chan et al., 2019). Fish supply and commerce, for example, are carried out in countries such as Kenya and Ghana to address national food security, employment possibilities, and poverty alleviation (Hasselberg et al., 2020). In accordance with this reality, fish play critical roles in countries like Burundi, Ethiopia, Rwanda, and Uganda in maintaining rising fish demand, enhancing earnings, enhancing food security, and enhancing nutrition for smallholder farmers, fishers, and consumers in rural and urban regions. In addition, fish farmers are assisted by supply chain processes in running their businesses smoothly and efficiently so that they can deliver fish products to individuals who depend on them, whether for a living or for consumption (Obiero et al., 2019).

In a similar situation, a nation like Nigeria also adopts a supply chain for fishing, but its contributions are constrained by significant issues like inadequate infrastructure, health and food safety measures, biosecurity measures on fish farms, inadequate access to refrigeration and clean water, poor hygiene among those handling the fish, inadequate fish inspection, failure to wear protective clothing, and limited medical monitoring of those handling the fish (Grema et al., 2020). In addition, the Ethiopian government suggests working with other stakeholders and offering seminars and training to increase capacity and understanding of financial management, resource exploitation, and environmental preservation (Mangesha, 2020), but stakeholder involvement in the fishery supply chain is still low.

Stakeholder participation is still in its infancy in Tanzania because the majority of fish farmers, fishermen, collectors, and processors cannot participate directly or indirectly

in the fishery supply chain (Charisiadou et al., 2022). However, they can be partially involved in certain supply chain functions of fish products in both urban and peri-urban areas. For instance, Food Agriculture Organization (2019) reports that Tanzania's fishing industry contributes more than 2% of the country's Growth Domestic Products through assisting in the survival of the traders. The fishing supply chain acts as a conduit between fish producers and customers to promote the flow of fish products and services (Obiero et al., 2019).

On the basis of the aforementioned activities, the Tanzanian government and other interested parties have launched a variety of projects and initiatives with the goal of promoting the fish industry, and in particular, fish supply chain management (Mbelle, 2020). Such initiatives include the national fisheries policy of 2020, the Bunda district fisheries investment plan, the national fisheries legislation of 2003 (no. 22 of 2003), the multi-stakeholder consultation for the Tanzanian anti-dynamite fishing campaign, and the national fisheries policy of 2003 (Issa et al., 2021).

In addition, the government removed 114 fees from the agriculture, livestock, and fishing sectors in 2017–18 to manage the flow of resources, particularly fish production (Ministry of Finance, 2020–21). Along with these, strengthening the management and control of fisheries resources to increase fish catch, launching a revamp of the Tanzania Fisheries Corporation (TAFICO), promoting aquaculture investment, and increasing the number of fish farmers in Tanzania are among the crucial steps for managing actively fish activities, whereby fish supply chain is crucial for all stakeholders (MOF, 2020/21).

Similar to this, the government's regulations in sections 24 (1) and (30) required stakeholders to follow fishing regulations and work with other pertinent government agencies like fisheries ministries, Tanzania Fisheries Research Institute, universities, and other stakeholders to produce or share information to ensure sustainable aquaculture practices in which fishing business and supply are within the bounds of the law (URT, 2009; 2018). Unfortunately, it appears that there are no official rules, distinct policies, or monitoring mechanisms to support aquaculture at the national level, which discourages stakeholders from participating in fish supply and demand (Charisiadou et al., 2022). Above all, the Tanzanian government is capable of setting quotas for initiatives like creating marine protected areas, passing legislation to end illegal, unreported, and unregulated (IUU) fishing, and working with stakeholders to ensure that the fishing industry is resilient and sustainable (FAO, 2019). However, the overall situation demonstrates that stakeholder engagement, such as that of fish wholesalers, retailers, collectors, and traders, is still low in this sector of the economy.

Unfortunately, despite the important contributions made by different stakeholders in relation to the policies, initiatives, and government support intended to boost the fish business, stakeholder engagement in the fishery supply chain falls short when it comes to carrying out fishing supply chain functions (Kamaylo et al., 2021a). Due to marketing restrictions, a lack of modern knowledge, inadequate harvesting and storage facilities, illegal fishing, and weak governance, it is difficult to manage the fish business and supply effectively (Eyayu et al., 2023; Orofino et al., 2023; Aceves-Bueno et al., 2021; Shalehin et al., 2022). While current literature from Tanzanian setting shows that government initiatives, policies, and procedures are quite rigid for most players to comply to and, as a result, take on the role of fishing supply chain (Kamaylo et al., 2021a). As a result, it is in the researcher's interest to investigate stakeholder engagement in the fishery supply chain in the Tanzania context in order to determine why stakeholders fail to be sufficiently engaged in the fishery supply chain in the context of Dar es Salaam and, finally, to suggest measures to alleviate the aforementioned situation.

Unfortunately, despite various perspectives and government initiatives such as fisheries legislation from 2003, national fisheries policy 2020, and government regulation in sections 24 (1) and (30) of fisheries, the level of engagement of various stakeholders in the fishery supply chain remains in its infancy, and to the best of the researchers' knowledge, their engagement has not been well captured, exhausted, and deemed sufficiently deep realized in the available literature. As a result, the goal of this study is to determine what the specific contributions of stakeholder participation in the Dar es Salaam fishing supply chain are. What exactly are the obstacles preventing them from participating in the Dar es Salaam fisheries supply chain? What opportunities for participation in the Dar es Salaam fisheries supply chain will be expanded? Finally, proposals to strengthen stakeholder engagement in the fisheries supply chain will be given.

1.2 Objectives of the study

The main objective of this study is to explore the stakeholders' engagement in the fisheries supply chain in Dar es Salaam with the view to establish why they fail to be engaged in this sector of economy. Specifically, the study intends: -

- a. To examine the structure of the fishery supply chain so as to identify key stakeholders and their functions
- b. To examine the constraints facing stakeholder's engagement in the fisheries supply chain in Dar es Salaam

2. Literature Review

2.1 Stakeholder theory

The stakeholder's theory was developed by Freeman in 1984. This is the most contentious management theories to be developed (Goyal, 2022). It suggests that the corporation is not only owned by its shareholders but is also a stakeholder in society and that management must consider the interests of all stakeholders in making decisions. Further, it has four types of academic field namely sociology, economic, politics and ethics (Wagner Mainardes et al., 2011). On the other hands, Freeman (1984, p. 46) defined the stakeholder as any group or individual who can affect or being affected by the achievement of the organization's objectives since it includes actors which is normally comes from outside the boundaries (Harrison et al., 2019; Kivits & Sawang, 2021) while Clarkson (1995) further argues that stakeholders are divided into two groups, namely primary stakeholders and secondary stakeholders (Mhlanga & Moloi, 2020).

Previous literature has analyzed stakeholders in business and firms to generate value for the company's stockholders if they are engaged in certain business function. This demonstrates the importance of stakeholders to a business operations and influence, and how managers must comprehend and account for each one (Beck & Storopoli, 2021). The theory was propounded by several studies since it makes a noticeable influence on strategy research for most of its existence on how stakeholders are influencers of organizational benefits (Bridoux & Stoelhorst, 2022). In addition, Mhlanga and Moloi (2020) state that both Donaldson and Preston (1995) and Friedman and Miles (2006) argue that the stakeholder theory should not be considered a singular theory, but rather a collection of theories that can be used to effectively manage stakeholders which is composed of three distinct approaches: normative, instrumental, and descriptive approaches for effectively managing business operations (Valentinov & Hajdu, 2021)

Accordingly, this study will adopt stakeholder theory to pinpoint objective one which talk to the contributions of stakeholders in the business operations specifically fish supply chain which require investigation so as to know how fish business is truly adopt and engaged by stakeholders (Freeman et al., 2017). Also, it is relevant to this study because stakeholders engagement usually follows the information strategy, response strategy, and involvement strategy where by this study involvement strategy is a critical point (Stocker et al., 2020)

2.2 Theory of constraints

The theory of constraints (TOC), created in 1984 by Eliyahu M. Goldratt, will also serve as a guide for this study, while naturally, it was originated in the mid of 1980s and published 1984 in the book of 'The Goal: Excellence in Manufacturing' (Urban & Rogowska, 2019). In order to deal with restrictions and constraints in particular, the

TOC is a management strategy that has been embraced. It has been created to put a strong emphasis on ongoing improvement in order to improve organizational performance (Mabin & Balderstone, 2020). It is a management philosophy that aims to continuously improve processes that it was developed as a way to implement a theory of ongoing enhancement (Urban & Rogowska, 2019). Also, it focuses on the weakest situation in the chain in order to improve system performance (Şimşit et al., 2014).

On the other hands, it has been derived be used to manage industrial planning, production control, project management, supply chain management, accounting, and performance measurement, as well as non-profit facilities such as hospitals and military depots (Blackstone, 2010). Further, it asserts the limits a system from achieving higher performance versus its goal"(Şimşit et al., 2014). Moreover, the main objective of TOC is to improve overall performance by identifying and addressing bottlenecks or constraints in a system (Blackstone, 2010)

According, the theory is in the line with objective two in viewing of constrains which hampering the stakeholder's engagement in fishing supply chain. In connection with TOC, the study involves various stakeholders such as Government officials, fishermen, collectors, processors, distributors, and consumers therefore any constraint or bottleneck in this system can result in complications that can affect stakeholder engagement.

2.3 The structure and the stakeholders' Functions in the Fisheries Supply Chain

The goal of this section is to determine the structure and the role of various stakeholders in the engagement of the fisheries supply chain. According to the available literature, various stakeholders can be directly and indirectly involved in fisheries trade and supply. Typical fishery supply chain is made up by number of stakeholders which include but are not limited to fishermen, dealers, collectors, agents, and consumers to obtain enough fish (Issa et al., 2022; Hjellnes et al., 2020). The structure is made up by groups of connected people that collaborate to deliver a fish-product to the consumer while simultaneously generating employment and advancing the economy (Jermsittiparsert et al., 2019).

In the similar way, stakeholders such as collectors, wholesalers, government, retailers and similar to this are undertake critical role in the fishery supply chain such as providing knowledge about farming and harvesting (Tamburini et al., 2020), packaging and handling facilities (Acharjee et al., 2021), facilitating distribution (Pascual-Fernández et al., 2019), and information storage and preservation (Hakimah et al., 2019). These engagements are examined below to assess the extent to which stakeholders carry them out as well as their ability to contribute as expected and

required.

Literature shows that fish collectors contribute relevant knowledge and awareness on fish farming and harvesting (McCluney et al., 2019; FAO, 2019). They also provide education and training on fish farming and harvesting techniques (Acharjee et al., 2021; FAO, 2019). Furthermore, fish traders were able to offer information regarding the adoption of innovative techniques for fish farming (Rajan et al., 2013; Wanja et al., 2020). Similarly, stakeholders such as private enterprises were able to conserve waters and nutrients for fish growth, as well as improve local climatic conditions (Francová et al., 2019) to contribute as expected and required.

Literature shows that fish collectors and processors are easing packing and handling of fish (Bedane et al., 2022). They carry out this job by selecting proper packaging facilities to keep fish fresh and safe during transportation (Almeida et al., 2022). This is also accomplished by choosing and determining handling devices such as buckets (Issa et al., 2022b; Tsironi & Taoukis, 2018; Jueseah et al., 2020). Furthermore, providing relevant knowledge regarding fish hygiene before and after packing is a critical obligation in this category (Edirisinghe et al., 2022).

2.4 Constraints to stakeholders Engagement in the Fisheries Supply Chain

The available literatures points to out a number of constraints of stakeholders when engaged in the fisheries supply chain. These constraints include climate change and marine debris (Ruiz-Salmón et al., 2020), unlawful fishing undermines the efforts of stakeholders such as fish exporters and traders to hold matured fish (Nahuelhual et al., 2018). Moreover, the rapid collapse of fish populations (Laso et al., 2018), water pollution (Sampantamit et al., 2020; Ali & Khan, 2018), Illegal fishing (Eyayu et al., 2023; Orofino et al., 2023; AcevesBueno et al., 2021; Shalehin et al., 2022) are also cited as constraints. A study by Kimani et al. (2020) notes that shortage of harvesting equipment and insufficient harvesting skills are a big challenge. In the same manner, inadequate fish handling facilities (Noman et al., 2022), weak government supervision and inspection of the handling system limits this feature (Kaleem & Bio Singou Sabi, 2021), inexperienced and untrained fishers to manage packaging and handling (Kumaran et al., 2021; Noman et al., 2022; Vanderroost et al., 2014).

Furthermore, poor management, illicit, unreported, and uncontrolled fishing are the problems, according to Orofino et al. (2023). Furthermore, due to a lack of contemporary equipment for fish preservation and storage, fishermen resort to traditional methods such as drying and smoking (Mangesha, 2020; Kamaylo et al., 2021).

3. Methodology

3.1 Study Area

The research was carried out at the Kivukoni and Kunduchi fish markets in Dar es Salaam, Tanzania, where the exploration of stakeholders' engagement in fisheries supply chain took place. Researcher chose these areas because there are more fishing stakeholders involved in the fishery supply chain in these areas than in other parts of Dar es Salaam. On the one hand, it was easier for researchers to gather accurate, dependable, and correct information from stakeholders involved in the fisheries supply chain.

3.2 The study approach

To fulfill the two objectives of the study, the researcher employed qualitative research approach with a case study design. A qualitative research approach is one that seeks to explore, clarify, investigate, uncover, and grasp a group of people's situations, feelings, perceptions, attitudes, values, beliefs, and experiences (Spinks & Canhoto, 2015; Jackson et al., 2007). This strategy employs inductive rather than deductive logic and either directly or implicitly communicates the purpose of the qualitative study and the data analysis technique (Mohajan & Mohajan, 2018; Astalin, 2013). The methodology is adaptive and emergent in character, with non-linear and non-sequential operationalization. As a result, the researcher used this technique to document people's experiences, actions, emotions, and feelings, as well as how they behave in their environments and the challenges they face while carrying out their tasks (Wisdom & Creswell, 2013; Mohajan & Mohajan, 2018; Almalki, 2016).

Following this approach, researchers selected a sample from an unlimited population using purposive and snowball sampling strategies. Considering the point of saturation, the overall sample size was 41 responders, with twenty-five respondents drawn from Kivukoni and Kunduchi fish markets and sixteen respondents were finally be selected from private fish farms. Through this sample, In-depth interviews were conducted with fisheries stakeholders, specifically those participating in the fisheries activities of the Kivukoni and Kunduchi fish markets, as well as private fish farms. The interviews were conducted based on the interview guide prepared. All participants were asked similar questions with an exception of when more probing was needed. The interviews lasted between 30 and 45 minutes and was conducted in Swahili language and later the transcriptions translated to English later on by a qualified translator. Moreover, the study used documentary review to obtain secondary data. This was through reviewing reports and other government publications on fisheries supply chain. As a result, the Fisheries Act No. 22 of 2003, the National Fisheries Policy, and the multi-stakeholder consultation for Tanzania's anti-dynamite fishing campaign was employed in this research to investigate stakeholder engagement in the fisheries supply chain.

3.3 Data analysis

Researchers employed content analysis, a method for evaluating qualitative data. In order to evaluate and analyze events and occurrences more effectively, it enables categorization (Harwood & Garry, 2003). In addition, the researcher used qualitative analytical framework to organize, analyze, and present the data in light of the objectives. Additionally, the study will interpret and evaluate the qualitative data using techniques for qualitative analysis (MAXQDA 20). Transcripts of handwritten notes were typed, and documents will be stored as Word documents. The transcribed data were carefully categorized based on the findings.

4. Findings

4.1 The structure of the fishery supply chain so as to identify key stakeholders and their functions

This was the first objective of the study. In the study the researcher was interested in itemising the stakeholders involved in the fish supply chain. The researchers were of the view that obtaining the stakeholders involved in the supply chain of fish would help to determine their roles and the entire structure of fish supply chain in the urban settings of the country. In the subsequent section a list of stakeholders involved in the fish supply chain is given.

Table 1: Stakeholders involved in the fish supply chain

No.	Stakeholder	Role
01.	Fishermen/ fish farmers	Farm and harvest fish from the water bodies, storage and preservation.
	Food manufacturers	Manufacture of fish feeds
02.	Collectors	Collect fish from different locations, storage and preservation
03.	Fish dealers	Sharing information among stakeholders, storage and preservation, monitoring and tracking fish, monitoring and tracking fish, facilitating distribution
04.	Agents	Sharing information among stakeholders, storage and preservation, monitoring and tracking fish, facilitating distribution
05.	Auctioneers	Collecting and selling fish
06.	Wholesaler	Handled and packaging, storage and preservation, facilitating distribution
07.	Retailers/ informal mongers	Selling fish

08.	Consumers	Buying fish
09.	Government	Creating rules that govern fishing

Findings report that a different number of stakeholders are involved in the supply chain of fish. Each of the mentioned stakeholder has specific tasks. These tasks include farming and harvesting fish, collecting fish and distributing the fish. Moreover, some stakeholders handle, store and find customers. These findings are in line with several existing literatures for example (Tamburini et al., 2020; Acharjee et al., 2021; Hakimah et al., 2019; McCluney et al., 2019; FAO, 2019, Acharjee et al., 2021; FAO, 2019).

Following these findings, the researcher was interested to sketch the structure of the fisheries supply chain the involves all stakeholders as given in Figure 1.

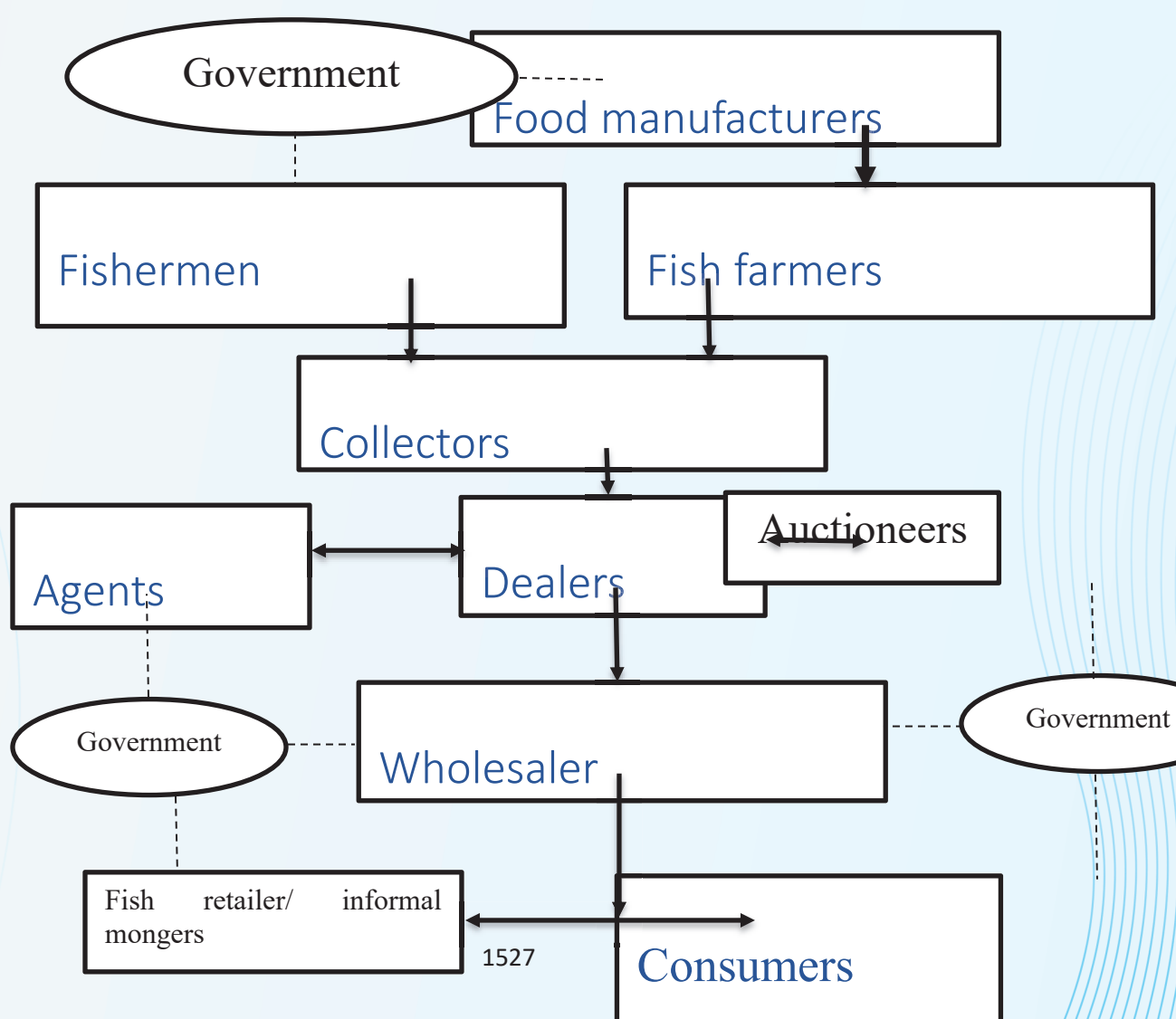


Figure 1: The structure of fish supply chain

4.2 The constraints facing stakeholder's engagement in the fisheries supply chain in Dar es Salaam

In this objective, the researchers were interested to find out what constrains stakeholders in clearly taking their responsibilities there by contributing to adequate fish supply chain in the urban settings of the country. In order to obtain the findings, the researcher asked a number of questions to the intended respondents. Questions like "What do you think constrains your operations and continuous fish supply in the urban settings of the country"? Several constraints were identified and thoroughly explained by respondents. Such constraints include climate change, decreasing marine population, market, rudimentary fishing methods and vessels, hiking prices of feeds, limited equipment techniques, poor fish handling techniques to mention but a few. A thorough clarification of these constraints is given in the subsequent sections.

Climate change

This was at the forefront during the interviews. To both fish farmers and those obtaining fish from the sea, the situation affected them. The raising sea level, scarcity of rains, overheating of the seas and ponds all were cited as resultants of climatic changes experienced in the world today. During an interview, one stakeholder said; *"...the situation is undetermined. We have increasing drought periods. During them, we have a little catch. The costs we incur and what we get are far different"*.

Another participant added, *"...the more we experience droughts the more the fish becomes scarce. As water gets hotter, they go deep the sea. We can't catch the fish till during rainy seasons"*.

As for fish farmers, the situation was also reported to be affecting them. One of them reported:

We technically dig our ponds 1.5 deep. As we experience prolonged droughts, constant heat affects the fish. They are stressed, cannot grow to the required size and sometimes die. But to some of us who depend on water from rivers, are affected because as ponds dry up, rivers dry up too and fish remains at the risk of either dying or being harvested prematurely (Fishfarmer, Kola).

Such quotations confirm the presence of the problem and how adversely climate change affects the stakeholders and the entire supply chain of fish in the urban settings.

The decreasing population of fish

It was revealed in this study that the population of fish has decreased drastically in the recent year. This is reported by fishermen along the coastal line of the country. This is also evidenced by the number of fish caught daily currently as compared to the ones caught in the previous years. The situation is attributed to unlawful fishing with the use of dynamites which not only kill all fish planktons but also damage coral reefs which are fish breeding grounds and habitats. One of the experienced auctioneer was quoted saying:

To be honest the population of fish has decreased drastically. We used to auction so much in the past years but since the beginning of illegal fishing, the number of fish has kept decreasing a year after the other. These days, it is not surprising for one to set to the sea and come back with less than 20 kg of fish was not common back then (Fisherman, Kunduchi).

During another session held at Kivukoni fish market, a fish collector said; “...I think the population of fish in the sea has decreased.... I used to collect even 50 tons of fish for just a day or two. But these days, collecting at least 5 tons is a tag of war and a greater achievement indeed”.

Simply putting it clear, another collector said; “...the untouchables (illegal fishers) kill the young and old fish, how do you expect the number to increase? It will always dwindle”

These quotations cement the idea of the presence of decrease in the population of fish in the sea. While the situation is regarded to be of that nature, the use of dynamites has been cited as the major cause of the situation and there is a feeling that those involved in the illegal fishing are known but are ‘untouchables’.

Fishing and harvesting methods

Stakeholders revealed that the entire supply chain of fish is constrained by the fish harvesting methods. It was revealed that the fishers are only using boats and canoes and only have access to shallow waters of the sea and cannot navigate in the deep-sea waters of the country. Moreover, it was revealed that respondents revealed that there are no advanced fishing methods. The use of normal nets and hooks are outdated but are still used in the Tanzanian context. This affects the amount of fish catches obtained on the daily basis and the amount of fish that enters the fish supply

chain. During the interview session, one of the fishermen was quoted saying: “...we only use normal boats, hooks and nets that only facilitate us to catch a little fish. This leads us into catching a small number of fish as compared to others who use advanced methods”.

With regard to fish farmers, they revealed that when it comes to harvesting, they also use buckets and other containers after drying all the water from the ponds that would have been used to farm other fish. One of them said; “...when it comes the harvesting season, we are forced to dry all ponds, and waste the water that would have been used for keeping other fish. As we dry the ponds, we also use buckets to harvest the fish”.

Water debris

This is yet another constraint that hinder stakeholders in the entire fish supply chain. Findings real that, with the presence of changes in the climatic changes and human activities, it has always been common for Marine debris to affect the entire fishing activities and the fish supply chain in the urban settings of the country. The presence of used plastic materials, abandoned nets and other littered materials are all hindering the process of fishing activities. In the same way, the debris affect the presence of fish, its health and the entire fishing activities. During an interview one of the fishermen reported that:

“...on a daily account, bottles and other litters are dumped in the sea. These are disastrous to fish and the fishing activities. We normally find the debris in most breeding and habitat grounds. Most of the debris contains chemicals and hazardous materials that pollute water, kill or repel the fish away”(Fisherman 7, Kunduchi).

Such realities presented by participants reveal that the presence of debris that pollute water, kill fish and at the same time minimise the amount of fish caught. Moreover, the limited number of fish caught affects the number of fish released in the entire fish supply chain.

Fish handling facilities

Findings of the study indicate that as fish is obtained from the water bodies, fishermen always use frozen ice to store the fish. This is because they do not have the required and special fishing ships which have inbuilt refrigeration facilities. Moreover, whenever the fish reaches the shore, the way it is handled shows that the procedure lacks handling facilities. It was revealed that the caught fish is transported in pick-up trucks, boxes, or even on motorcycles. One of the transporters said; “...this is my pick up that transports fish from Kunduchi to Kivukoni fish market”. Looking at the truck, it was a normal truck without any form of refrigeration facility at all. Moreover, the

way fish is handled during the actual auctioning process is yet depicting limited handling equipment. One of the auctioneers said: “...the boards and tables we do auction on are not what we should use. They attract dirtiness, and contaminate the fish itself and may endanger the consumers’ health”. In the same line, fish farmers also mentioned inadequacy of handling equipment and they mentioned that the use of boxes and buckets have been an order of the day in fish handling during harvesting and transporting to the market. With such quotations, findings reflect that reality that there is limited equipment for handling fish.

Poor packaging and storage facilities

The findings of the study indicate that while fish is consumed with in and outside the Tanzanian borders, the one sold internationally fetches low income because it is sold at cheaper prices in comparison to others from other nations. This is because they are poorly packaged and stored. For instance, fish to be transported out of Dar es salaam and to nearby countries is packaged in plastic bags or plastic containers, transported in less refrigerated trucks which, apart from considered of a poor quality, they fetch low prices. The fish sold from other countries are packaged in clean polythene bags and boxes which are labelled and transported in refrigerated trucks. While fish reaches the destination fresh, it also attracts more prices. During an interview one of the wholesalers said:

“The business is real and has greater potentials of accumulating cash but the limited equipment and facilitating environment are letting us down. If we had packaging materials and storing and refrigerated trucks, our fish would be fetching competitive prices than now” (Wholesaler 1, Kivukoni).

Moreover, fish farmers presented that, as they harvest their fish, they do not have special cooling places before they take fish to the market. The greatly stressed that they handle food through buckets, basins and sacks. This indicates that handling and storage equipment are a burning challenge.

Findings presented in this objective are in line with The available literatures which point that climate change and marine debris (Ruiz-Salmón et al., 2020), unlawful fishing (Nahuelhual et al., 2018), the rapid fall in the population of fish (Laso et al., 2018) and water pollution (Sampantamit et al., 2020; Ali & Khan, 2018) as great constraints to fish supply chain. Moreover, other studies report insufficiency of skills (Kimani et al., 2020) and inadequate fish handling facilities (Noman et al., 2022) as other constraints that not only affect the fishermen but the general fish supply chain.

5. 0 Conclusion and Recommendation

Conclusion

The supply chain of fish in the country is not a single persons' activity. It includes a collection of different individuals who at different times each plays special duties of ensuring that fish is supplied all over the country without delay. These stakeholders include fish food manufactures, fishermen, fish farmers, collectors, aents, among others. Each takes a role to ensure that fish reaches the required destination in time. Moreover, while stakeholders are trying their level best to take their responsibilities, they are hindered with a number of challenges including inadequacy of equipment, illegal fishing and marine debris. Such constraints restrict the way fishermen obtain fish and the entire supply chain of fish in the country.

Recommendations

The government through the marine police and marine section of the Tanzania Peoples' Defence Force (TPDF) are advised to keep a keen eye on the marine waters of the country. This will help in limiting illegal fishing which endangers the population of fish and the natural habitat and breeding grounds of fish. The study also recommends the government through the ministries of livestock and fisheries to implement restrictive fishing in some periods. This will allow the fish to breed and reproduce themselves and hence increase the number of fish in the sea. This can be implemented by allowing fishing to take place in certain months and restrict fishing in other months. The study recommends the government through the vice president's office to initiate continuous programmes of cleaning the sea debris. This involves the cleaning of the wasted bottles, nets and other containers that normally contaminate the sea waters. The study recommends the government to provide farmers and fishermen and fishing companies with loans that will facilitate them to buy advanced equipment for fishing activities. This will facilitate effective fishing, increase the amount of fish caught there by ensuring that there is sufficient fish supply in the market.

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The Impact of Government Revenues and Government Authority on Economic Growth: Evidence from Tanzania

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Abstract

This study aimed to evaluate the impact of fiscal policy on economic growth in Tanzania, focusing on government revenue, expenditure, inflation, and trade openness in relation to GDP. Conducted at the Bank of Tanzania (BoT) and the National Bureau of Statistics (NBS), the study used a quantitative, descriptive design based on secondary data from 1995 to 2023. Keynesian and Classical economic theories guided the research, which utilized trend analysis, correlation analysis and multiple regression. Findings revealed that government revenue and expenditure positively and significantly impacted GDP.

Keywords: *Fiscal policy, Economic growth, Government Revenue, Expenditure, Inflation, And Trade Openness.*

1.0 Introduction

Economic growth is a critical indicator of a country's development, helping to address macroeconomic issues like unemployment and income inequality. The debate around economic growth centers on its determinants, with fiscal policy and trade policy being key drivers of prosperity through investment and technology stimulation (Shah, 2022; Ubwani, 2023). In Tanzania, the relationship between fiscal policy, trade openness, and economic growth from 2020 to 2023 is especially relevant, with economic growth rising from 1.99% in 2020 to an estimated 5.2% in 2023, raising the need to examine which fiscal instruments drive this growth (Hassan, 2022; World Bank, 2010-2024). While empirical studies show fiscal policy and trade openness influence economic growth in developing countries, differences in findings arise due to varying fiscal instruments and trade openness measurements (Karingi and Biwott, 2021).

Fiscal policy, including government spending and taxation, is pivotal in shaping a nation's economy. While many studies have explored the relationship between fiscal policy and economic growth, gaps remain in understanding the mechanisms and causal

relationships (Kramer, 2021). Clarifying these aspects is vital for effective policy formulation. Additionally, challenges like prolonged budget deficits, public debt, and political dynamics hinder fiscal policy implementation and its potential for long-term growth (Holkagan, 2021; Halkalamari, 2021). Therefore, this study aims to explore under-researched control variables like inflation

The general objective of this study was to examine the impact of fiscal policy on economic growth in Tanzania. Specifically, this study intended: -

- i. To examine the impact of government revenue on gross domestic product in Tanzania.
- ii. To examine the impact of government expenditure on gross domestic product in Tanzania.

2.0. Literature Review

Keynesian economic theory posits that government intervention through fiscal policy—particularly increased public spending and tax adjustments—can stimulate aggregate demand and promote economic growth, especially during periods of economic downturns or recessions. In the context of Tanzania, this theory suggests that government expenditures, such as infrastructure development or social programs, can directly boost economic activity by increasing consumption and investment, which in turn raises GDP growth. Fiscal policies aimed at reducing unemployment and stimulating demand can be particularly relevant in developing economies like Tanzania, where demand-side constraints often hinder growth.

Classical economic theory, on the other hand, advocates for limited government intervention in the economy and emphasizes the self-regulating nature of free markets. According to this theory, long-term economic growth is driven by supply-side factors such as capital accumulation, technological innovation, and labor productivity, rather than short-term demand stimuli. In the Tanzanian context, classical theory would suggest that fiscal policies should focus on creating a stable macroeconomic environment, reducing government deficits, and promoting trade openness to encourage private sector investment and sustainable long-term growth. Tax reductions and budgetary discipline could also lead to efficient resource allocation, enhancing productivity and growth. Both theories provide contrasting but complementary views on how fiscal policy can influence economic growth in Tanzania, depending on the policy objectives and macroeconomic conditions.

Several studies have investigated the empirical relationship between fiscal policy—specifically government revenues and expenditures—and economic growth in Tanzania. For example, Kweka and Morrissey (2020) assessed the impact of

government spending on economic growth using data from 1970 to 2018. They found that while government expenditure had a positive, though slightly marginal, effect on economic growth, investments in infrastructure were particularly critical for improving economic performance. Similarly, Thorbecke (2020), in a comparative analysis of Tanzania and Zambia, highlighted that government spending in key areas like education and healthcare significantly contributed to long-term growth by improving human capital.

Ismael (2020) focused on the role of government revenues, particularly tax reforms, in fostering economic growth. The study concluded that improved tax collection mechanisms enhanced economic growth by increasing funds available for development projects, though excessive taxation could deter private investment, indicating a need for balanced fiscal measures.

Karingiri and Biwott (2021) also explored the effect of fiscal deficits on Tanzania's growth, finding that moderate deficits, if directed toward productive investments, could stimulate growth. However, large deficits risk inflation and debt accumulation, potentially hampering economic performance. Barro (2020), in a global panel study, similarly noted that while fiscal deficits could boost short-term growth, they might jeopardize long-term economic stability. These studies collectively highlight the complex role of fiscal policy, through revenues and expenditures, in influencing Tanzania's economic growth.

3.0 Methodology

This study adopts a quantitative research approach to investigate the impact of fiscal policy—specifically government revenues and expenditures—on economic growth in Tanzania. The quantitative method is appropriate for this analysis as it provides a numerical foundation for understanding relationships between variables, enabling the use of statistical tools to assess the impact of fiscal policies (Kumar, 2019). A cross-sectional research design is employed to collect data at a single point in time, which offers a snapshot of the current fiscal environment in Tanzania and highlights its immediate economic challenges (Kumar, 2019). Conducting the research in Tanzania is particularly relevant due to the country's evolving fiscal policies and their implications for economic growth, making it a critical context for this study (Mhando, 2023).

To ensure a representative sample, purposive sampling is utilized to select participants with specific expertise, including policymakers, economists, and financial analysts. This method is justified as it targets a long period data from 1995 to 2023). (Palinkas

et al., 2015; Etikan, 2023). Data is collected through documentary reviews in the government reports and economic indicators, providing a well-rounded view of the research topic (Fowler, 2014).

For data analysis, descriptive statistics and multiple regression analysis using SPSS version 23 are employed to examine the relationships between fiscal policy variables and economic growth, ensuring the findings are robust and statistically significant (Kothari, 2014). To ensure the reliability of the research instruments stable data sources were used (Tavakol & Dennick, 2011).

4.0 Findings and Discussion

The Descriptive Statistics (n=29)

Table 1: Government Revenues

Variable	Obs	Mean	Std. Dev.	Min	Max
lngovrev	29	13.01338	3.54e-07	12.01338	13.43338
lnexp	29	12.94925	6.51e-07	12.12925	12.98926
lngdp	29	15.12354	1.31e-06	15.69352	15.69353

The mean for the government revenue was 13.01338, indicating the average logged government revenue. On the other hand, Standard Deviation was 3.54e-07, suggesting minimal variability around the mean. Meanwhile the mean ranged from 12.01338 (minimum) to 13.43338 (maximum), showing a modest span in government revenue values. Concerning the expenditure, the mean was 12.94925, representing the average logged expenditure. Besides, standard deviation was 6.51e-07, indicating low variability. Moreover, the range moved from 12.12925 (minimum) to 12.98926 (maximum), reflecting slight differences in expenditure.

Furthermore, the GDP had a mean of 15.12354, reflecting the average logged GDP with a standard deviation of 1.31e-06, which is very small, indicating stable GDP values across the observations. Similarly, GDP had a range from 15.69352 (minimum) to 15.69353 (maximum), indicating limited fluctuation in GDP. Overall, these results suggest a consistent relationship among government revenue, expenditure, and GDP, with low variability indicating a relatively stable economic environment

These observations were in line with results of Abel et al. (2023), which analyze the relationship between government revenues, expenditures, and GDP, emphasize that a strong correlation between these variables supports the theory that fiscal policies influence economic stability and growth. Additionally, Kim and Seo (2022) suggest that government revenue and expenditure must align for sustainable GDP growth, further validating these results. Likewise, these results were in harmony with those of Bose & Akpan (2022) and Mishra & Singh (2023) who noted that fiscal policy and public expenditure.

Table 2. Correlation Analysis

	lngovrev	Lnexp	lngdp
lngovrev	1.0000		
lnexp	-0.1652	1.0000	
lngdp	0.6845	-0.0604	1.0000

The government revenue and GDP had a positive correlation coefficient of 0.6845 indicates a strong positive relationship, suggesting that increases in government revenue are associated with increases in GDP (Table 2). This aligns with findings by Bose & Akpan (2022), who emphasize that enhanced government revenue facilitates investment in infrastructure, driving economic growth. Likewise, government revenue and expenditure had a correlation coefficient of -0.1652 implies a weak negative relationship. This suggests that higher government revenue does not significantly correlate with higher expenditures. Mishra & Singh (2023) support this by indicating that inefficiencies in public spending can lead to a disconnect between revenue generation and expenditure levels.

Moreover, expenditure and GDP had the correlation of -0.0604 indicates a negligible negative relationship, implying that changes in expenditure have little impact on GDP growth in this dataset. This finding is consistent with Ayalew (2023), who highlights that excessive public expenditure without efficient allocation does not necessarily lead to GDP growth.

Table 3: Multiple Regression

Source	SS	df	MS	Number of obs =		29
Model	4.6281e-11	4	1.1570e-11	F (4, 24)	= 146.86	
Residual	1.8908e-12	24	7.8784e-14	Prob > F	= 0.0000	
				R-squared	= 0.6807	
				Adj R-squared	= 0.6542	
Total	4.8172e-11	28	1.7204e-12	Root MSE	= 2.8e-07	
lngdp	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
lngovrev	.5032018	.1627033	1.37	0.008	-.1126012	.5590049
lnexp	.0496129	.0839085	0.35	0.007	-.1435657	.2027914
_cons	12.40541	2.566482	4.83	0.000	7.108455	17.70237

Results from the Table 2 show that F-statistic of 146.86 with a p-value < 0.0000 indicates that the overall regression model is statistically significant, suggesting that the predictors significantly explain the variability in GDP. This finding aligns with Abel et al. (2023), who found that fiscal policies significantly impact economic growth. Likewise, the R-squared value of 0.6807 indicates that approximately 68% of the variability in GDP can be explained by government revenue and expenditure. The Adjusted R-squared of 0.6542 suggests that the model remains robust after accounting for the number of predictors. Bose & Akpan (2022) note that strong R-squared values often indicate effective modelling in fiscal studies.

The coefficient for lngovrev is 0.5032 ($p = 0.008$), implying that a 1% increase in government revenue is associated with approximately a 50.32% increase in GDP, indicating a strong positive relationship. This supports findings by Ayalew (2023), which highlighted the crucial role of revenue generation in fostering economic growth.

Equally, the coefficient for lnexp is 0.0496 ($p = 0.007$), suggesting that a 1% increase in expenditure is associated with a 4.96% increase in GDP. While positive, the impact of expenditure is less pronounced compared to revenue. This resonates with Mishra & Singh (2023), who found that effective allocation of expenditures is essential for maximizing economic growth. These results underscore the significance of government revenue and expenditure in influencing GDP, highlighting the importance of efficient fiscal policies for sustainable economic development.

5. Conclusion and Recommendation

The study highlights the significant role of government policy, particularly government revenue and expenditure, in influencing the Gross Domestic Product

(GDP) of Tanzania. The positive relationships observed indicate that increased government revenue, through effective tax collection and public spending, can substantially boost economic growth. This underscores the necessity for the Tanzanian government to adopt strategies that enhance fiscal capacity while ensuring productive allocation of resources. Overall, the findings emphasize the importance of fiscal policy as a critical tool for economic development in Tanzania.

To optimize the impact of government policy on GDP, it is recommended that the Tanzanian government implement comprehensive tax reforms aimed at broadening the tax base and enhancing collection efficiency. Furthermore, public expenditure should be prioritized towards productive sectors such as infrastructure, health, and education, which have been shown to yield significant returns on investment. Continuous monitoring and evaluation of fiscal policies will also be crucial in adjusting strategies to ensure they remain effective in promoting economic growth. Lastly, engaging with stakeholders, including the private sector and civil society, can help foster a more inclusive approach to fiscal policy formulation.

Future research could explore the long-term effects of specific fiscal policy instruments on economic growth in Tanzania, focusing on the differential impacts of government expenditure in various sectors. Additionally, comparative studies involving other East African countries could provide valuable insights into best practices and strategies that enhance fiscal policy effectiveness. Investigating the role of informal economic activities and their contributions to government revenue could also offer a broader perspective on the dynamics of fiscal policy. Lastly, qualitative research could complement quantitative findings by capturing the perceptions and experiences of stakeholders regarding the impact of government policies on economic growth.

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The Influence of Management Financial Support on The Implementation of Green Procurement Practices in Grape Processing Factories in Tanzania

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Abstract

The importance of management financial support on implementation of green procurement practices is influenced by management financial support that help to reduce environmental deterioration. Several studies have been conducted on the impact of management financial support on the implementation of green procurement practices in grape processing factories, and a link has been established between green procurement practices and management financial support. Therefore, the aim of this study is to assess the influence of management financial support on implementation of green procurement practices in five selected grape processing factories in Tanzania. This study was conducted in five selected grape processing factories in Dodoma which are Ceta Wico, Tawico, Aliko Vintage Company, Shubi Vintners Ltd., and Wendece Winery Industry Limited, hence a cross-sectional research design utilized, which involved gathering data from a large number of participants at a single point in time. The current study employed a mixed-method approach whereby both quantitative and qualitative methods were applied to explore this relationship and a focus on employee perspectives in grape processing factories in Dodoma. The target population was workers of selected grape processing factories in Dodoma which is approximately 300 that include all staffs that are employed at selected grape processing factories in Dodoma. A sample size of 171 of five selected grape processing factories in Dodoma were used in this study randomly selected from population of workers from five selected grape processing factories in Dodoma. Respondents expressed a strong understanding of green procurement practices, suggesting that management financial support is vital in addressing challenges and driving environmental conservation efforts. The questionnaire and interview methods were used in data collection and analyzed using SPSS software. The finding indicated that, budgetary allocation, financial incentives and green materials were suggested as factors that influence implementation of green procurement practices in five selected grape processing factories in Dodoma. Finally, study recommended that the factories management should pay much attention for the necessary step ahead for them to effectively

implementation of green procurement practices for the environmental freely production.

Keywords: *Financial support, green procurement, grapes processing*

1. Introduction

Green procurement is a global concern, with governments, businesses, and consumers recognizing its importance in mitigating environmental impacts and fostering sustainability. It involves incorporating ecological, social, and economic factors into purchasing choices to reduce negative consequences and promote a more sustainable future (Lee, Kim, Lee, Park, and Cho, 2019). On other hand China has demonstrated its commitment to green procurement by introducing a Green Procurement Law that mandates government agencies and state-owned enterprises to prioritize environmentally friendly products and services. This law is part of a broader strategy to encourage sustainable practices and contribute to the country's environmental goals (National Development and Reform Commission, 2018). In recent years, green procurement practices have been increasingly embraced in Africa, driven by a growing awareness of environmental responsibility and the need for sustainable development. Both governments and private sector organizations are recognizing the importance of reducing their ecological footprint and are taking steps toward more sustainable procurement practices (Adesina, 2018). Tanzania also takes some initiatives on green procurement practices to integrate environmental and procurement process. Tanzania has extended its commitment to sustainability by embracing green procurement practices, recognizing their alignment with the country's existing sustainability efforts. While the adoption of green procurement in Tanzania may be slower compared to other developing nations, it underscores the importance the country places on environmental conservation and sustainable development (Musangile, 2020). Although the Tanzania Public Procurement Act of 2023 acknowledges the importance of green procurement practices, there are still challenges in fully implementing sustainable green procurement practices across the country (PPA, 2023).

Management financial support is a critical factor in the implementation of green procurement practices in grape processing factories in Tanzania. With adequate management financial support, factories would be able to invest in sustainable technologies, train employees on environmentally friendly practices, and source materials from suppliers who adhere to environmental standards. This would enable factories to reduce their environmental footprint, improve their reputation, and contribute to the sustainable development of the industry (Qi, 2019). The grape processing factories that invested in sustainable technologies and practices experienced a significant reduction in their environmental impact, including a 25%

reduction in energy consumption and a 30% reduction in water usage. Moreover, the study found that factories that sourced green materials from suppliers who adhered to environmental standards experienced a significant improvement in their reputation, with 80% of customers indicating that they would be more likely to purchase products from factories that ordered sustainability (Wang, 2020).

In fact, some of grape processing factories in Tanzania face significant financial constraints that limit their ability to invest in green procurement practices. Studies indicated that, 70% of grape processing factories in Tanzania reported that financial constraints were a major barrier to adopting green procurement practices (Zhang,2020). Management financial support may be limited or non-existent, forcing factories to prioritize short-term cost savings over long-term sustainability (Li, 2022). This is found that factories that prioritized short-term cost savings were less likely to adopt green procurement practices, leading to increased environmental degradation and health problems (Wang,2020)

Despite the Tanzanian government's efforts to promote green procurement practices, challenges remain in implementing these sustainable policies. In 2018, the Ministry of Finance and Planning introduced the National Green Procurement Policy, aiming to integrate environmental considerations into public procurement processes (URT, 2018). This policy provides guidelines for procuring entities to reduce their environmental impact. Additionally, the Tanzania Public Procurement Act of 2023 acknowledged the importance of green procurement. However, the implementation of these practices faces obstacles, indicating a gap between policy and practice (PPA, 2023).

Various studies investigated supports on implementation of green procurement in grape processing factory. Kumar and Garg (2022) found significance of the link between financial support and the adoption of green procurement practices within the country's grape processing industry. It revealed that financial support from government and donor agencies was instrumental in encouraging sustainable procurement practices among grape processing factories. Sroufe and Mishra, (2020) reviewed that financial institutions can play a key role in promoting green procurement practices in the grape processing sector, Researchers highlight the challenge posed by limited access to financing, which acts as a significant barrier to the implementation of sustainable practices. Kolk (2018) revealed that the financial support had a positive impact on the adoption of green procurement practices in the EU wine industry. The wine producers who received financial support were more likely to adopt sustainable sourcing practices, such as sourcing grapes from certified sustainable vineyards, and to implement waste reduction and recycling programs (Lee, 2019)

The companies that received financial support were more likely to adopt green procurement practices, such as investing in renewable energy systems, implementing sustainable water management practices, and reducing waste. For example, one of the companies in the study received a government grant to install solar panels, which reduced their energy consumption and greenhouse gas emissions. O'Brien and Robertson (2020) stated that financial support enabled wine producers to invest in sustainable practices, such as solar panels, rainwater harvesting systems, and organic farming methods. Studies on financial support in developed countries focused mainly on financial support of which grape processing factories received from the government, financial institution to support green production and the way of which the wine producer can use financial support to invest in environmentally friendly technologies, waste reduction systems, and energy-efficient equipment, ultimately reducing their environmental footprint (Kumar and Garg 2022; Sroufe and Mishra 2020; Kolk 2018; Lee 2019; O'Brien and Robertson 2020). It is evident that previous scholars do not pay attention on how financial support from management can support practically workers and other staff who work professionally on implementation of green procurement practice in grape processing factories in Tanzania to produce green product. Thus, there is a need to conduct research on how management financial support can influence implementation of green procurement practices in grape processing factories in Tanzania.

2.0 Literature review

2.1 Theoretical review

The Resource-Based View (RBV) is a management and strategic management theory that emphasizes the internal resources and capabilities of a firm as the primary source of sustained competitive advantage.

The RBV analyze and interpret resources of the organizations to understand how organizations achieve sustainable competitive advantage. The RBV focuses on the concept of difficult-to-imitate attributes of the firm as sources of superior performance and competitive advantage (Barney, 1986; Hamel and Prahalad, 1996). Resources that cannot be easily transferred that require an extended learning curve or a major change in the organization climate and culture, are more likely to be unique to the organization and, therefore, more difficult to imitate by competitors.

The model suggests that a firm's sustained competitive advantage arises from its unique bundle of resources and capabilities. According to this theory, financial resources, technical expertise, and training programs are critical resources that can contribute to a firm's success. Financial support enables the acquisition and development of valuable resources, technical support helps leverage technology, expertise and training support enhances the capabilities of employees.

Resource-Based View (RBV) emphasis on locating, highlighting, and utilizing these special assets and competencies as the cornerstone of strategic management, which aims to direct businesses in gaining and maintaining a competitive advantage over time.

The emphasis placed by the Resource-Based View (RBV) on the value of intangible resources such as organizational culture, knowledge, and skills aligns with the realities of contemporary business environments, where these assets frequently have a significant impact on a firm's success.

Resource-Based View, has a number of drawbacks. One of the main criticisms is that it places too much emphasis on internal capabilities and resources as the only sources of competitive advantage. This can result in a limited strategic focus that undervalues the significance of external factors like industry structure, market dynamics, and technological advancements.

2.2 Empirical review

Kumar and Garg (2022) revealed that financial backing from government and donor agencies was instrumental in encouraging sustainable procurement practices among grape processing factories. A significant majority of respondents (80%) affirmed that management financial support influenced their decision to implement green procurement practices. Specifically, access to grants, loans, and other financial mechanisms allowed factories to invest in environmentally friendly technologies, waste reduction systems, and energy-efficient equipment, ultimately reducing their environmental footprint.

Sroufe and Mishra (2020) explained that financial institutions play a key role in promoting green procurement practices in the grape processing sector, Researchers highlight the challenge posed by limited access to financing, which acts as a significant barrier to the implementation of sustainable practices. Without adequate financing options, grape processing factories face difficulties in investing in eco-friendly technologies and processes crucial for environmental sustainability. This finding emphasizes the need for financial institutions to offer affordable and accessible financing solutions, thereby removing obstacles and incentivizing the adoption of green procurement practices within the industry.

Kolk (2018) elucidated that financial support had a positive impact on the adoption of green procurement practices in the EU wine industry. The wine producers who received financial support were more likely to adopt sustainable sourcing practices, such as sourcing grapes from certified sustainable vineyards, and to implement waste reduction and recycling programs. The study's findings suggest that financial support

can play an important role in encouraging the adoption of green procurement practices in the EU wine industry, which can help reduce the industry's environmental impact and improve its sustainability.

Lee (2019) reported that companies that received financial support were more likely to adopt green procurement practices, such as investing in renewable energy systems, implementing sustainable water management practices, and reducing waste. For example, one of the companies in the study received a government grant to install solar panels, which reduced their energy consumption and greenhouse gas emissions. Another company received a loan to implement a sustainable grape sourcing program, which improved the sustainability of their supply chain.

O'Brien, and Robertson (2020) described that financial support enabled wine producers to invest in sustainable practices, such as solar panels, rainwater harvesting systems, and organic farming methods. The study's results also showed that wine producers who adopted green procurement practices experienced improved environmental performance, including reduced energy consumption, water usage, and waste generation. By providing financial incentives, governments and industry associations can promote sustainable practices, reduce the industry's environmental impact, and contribute to a more sustainable future.

Conceptual framework figure

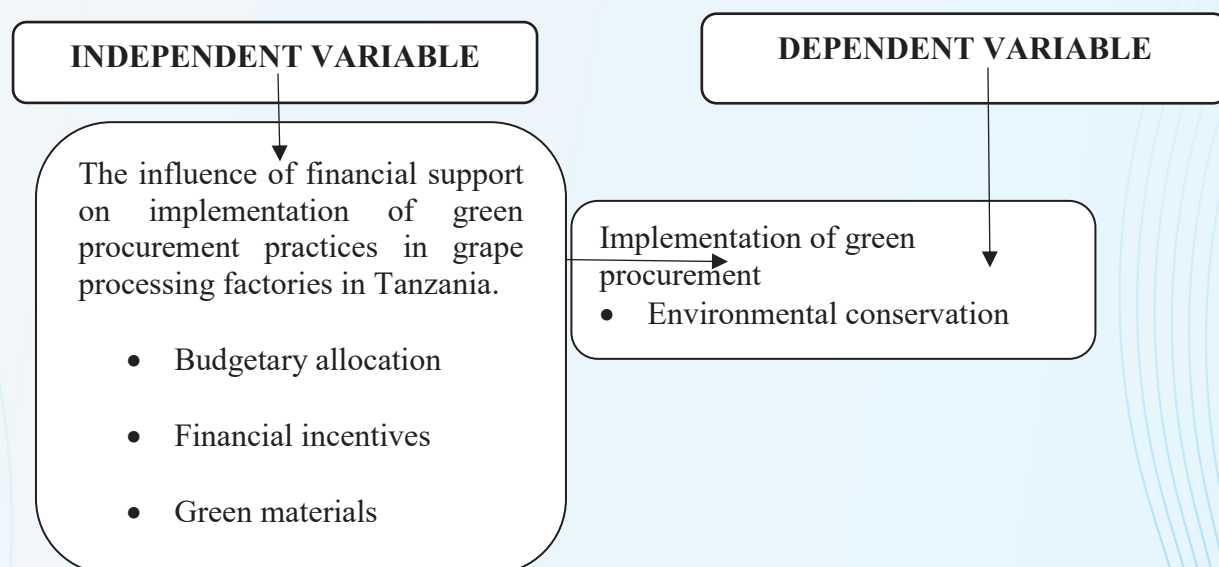


Figure 1: Conceptual framework figure

Source: Field data 2023

3.0 Methodology

3.1 Research Area

The study was conducted in Dodoma region, Tanzania at five selected grape processing factories in Dodoma, Tanzania, including Ceta Wico, Tawico, Aliko Vintage Company, Shubi Vintners Ltd., and Wendece Winery Industry Limited. By examining these factories, researchers can gain insights into minimizing environmental impacts and promoting sustainable practices within the grape processing industry, contributing to eco-friendly production methods and a reduced ecological footprint (Williams and Schneider, 2018).

3.2 Research design

The study utilized a cross-sectional research design, which involves gathering data from a large number of participants at a single point in time. This design is suitable for examining relationships between variables at a specific moment rather than over an extended period. (Cresswell, 2018). This cross-sectional study, help researcher to collect data from a sample of participants at a single point in time, which means that the data is collected at one specific minute, rather than over a period of time. This allows researchers to get a picture of the features and relationships between variables at that particular point in time (Hinkley, 2020).

3.3 Research Approach

Mixed research Approach was being applied because it involves collecting and analyzing both qualitative and quantitative data to provide a more comprehensive understanding of the research topic. (Johnson, Levine, and Smith (2018). Mixed methods research was offering a powerful tool for reducing bias in research by combining the strengths of both quantitative and qualitative methods. By leveraging the balancing nature of these methods, researchers can increase the validity and reliability of their findings and better understand complex research problems (Creswell, 2018).

3.4 Population of the Study

Population of the study were people who are working in selected grape processing factories in Dodoma that targeted as respondent in collection of accurate data that are relevant to the research question. In study population sample can be obtained because, it should be representative of the population of interest and it should reflect the features of the population in terms of relevant variables (Polit, and Beck, 2020).

3.4.1 Sample Size

The study was using all targeted population of 300 that include management and other staffs. For this study, five selected grape processing factories in Dodoma that have been in operation for at least 5 years were included in the sampling frame. The study used simple random sampling to obtain the study sample. The simplified formula put forward by Yamane's (1967) was used in calculating the study sample. The formula is $n = N / (1 + Ne^2)$,

Where N = Target population = 300, n = Sample size, e = Standard error = 0.05

$$n = 300 / (1 + (300 (0.05)^2)) = 171$$

$$n = 171$$

3.4.2 Sampling Techniques

Simple random sampling technique

Simple random sampling technique was selected because it helps to ensure that the sample is representative of the population in a way that each member of the population has an equal chance of being selected. (Kish, 2018). Simple random sampling is unique in that each member of the population has an equal chance of being selected, reducing the possibility of bias and ensuring that the sample reflects the diversity of the population (Liu and Li, 2020)

Purposive sampling technique

Purposive sampling as a technique was used in qualitative research to select participants who own specific features or experiences that align with the research question or study objectives (Polit, and Beck, 2018). Purposive sampling was enabling researchers to collect data from participants who are most likely to provide rich and nuanced insights into the research topic. By selecting participants with specific characteristics or experiences, researchers can gather data that is directly relevant to their research questions. (Patton, 2018).

3.5 Data collection methods

3.5.1 Questionnaire

A questionnaire is a data collection tool used in research to gather information from respondents through a series of question. Researcher distributed questionnaires to workers of five selected grape processing factories in Dodoma in order to obtain accurate and reliable information from them, also questionnaire is commonly used in social sciences, marketing, and other fields to collect self-reported data from a large number of participants (Martin, and O'Connor, 2022). Questionnaires can be managed comparatively quickly and easily compared to other data collection methods, such as interviews or focus groups. This is because questionnaires can also be distributed to a large number of participants simultaneously, and participants can

complete them at their own step, without the need for a researcher to be present (Cooper, and Schindler, 2018)

3.5.2 Interview

This study was collecting data in the interview by using a structured interview guide. Interviews can take various forms, including face to face, telephone, video conference, or written exchanges. They can be structured, semi structured, or unstructured, depending on the level of formality and guidance provided by the researcher (Bryman, 2018). The researcher asked questions and recorded accurate information from key informant in a note book during data collection because Interview is a powerful tool for gathering rich, contextualized data that can help researchers better understand phenomena and develop theory (Patton,2020)

3.6 Data analysis

Analytical model

Qualitative data was analyzed using thematic analysis. Thematic analysis involves identifying, coding, and organizing patterns and themes within the data. In this process is to become familiar with the data through repeated reading and listening normally codes was developed and applied to the data to identify patterns and themes (Creswell, 2018).

The linear regression model was used to analyze quantitative, The influence of Management financial support on implementation of green procurement practices in grape processing factories in TZ. The model was chosen because dependent variables was implementation of green procurement practices that was the value of assigned five selected grape processing fac tories in Dodoma. Descriptive and inferential statistics were used to summarize and describe the basic features of the data, such as measures of central tendency (mean, median, mode) and variability (range, variance, standard deviation). Before running multiple linear regression, all variables captured using Likert scale was converted into factor score with aid of principle component analysis tools in SPSS Software. (Leech and Onwuegbuzie2 018).

The liner regression was specified as:

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \epsilon \dots \dots \dots (i)$$

Whereby:

Y= To examine the contribution of management financial support

X1= Budget allocation

X2= Financial incentives

X3= Green materials

4. Finding and discussion

4.1 Reliability test

To ensure the data's credibility, the study assessed its internal consistency and meaningful contribution to existing literature. Cronbach's alpha was used to evaluate the reliability of the data, which measures how well a set of items captures a single, underlying aspect of individuals. This implies that there is an adequate fit of the data to model and that the covariates are significantly related to the outcome variables.

The table below present reliability of data in this study.

Table: Reliability statistics

Cronbach's Alpha	N of Items
.750	26

Source: Field Data (2024)

4.2 Descriptive statistics

4.2.1 Budgetary allocation

Table 1 below, show that through questionnaire administered to 130 respondents the researcher sought for opinion on proper budgetary allocation for implementation of green procurement practice in grape processing factories in Dodoma. Out of 130 respondents 31.5% strong agreed that proper budgetary allocation can influence the implementation of green procurement practice in grape processing factories in Dodoma. 35.4% agree, 21.5% strongly disagree, 6.9% Disagree while 4.6% respond neutral.

Table 1: Budgetary allocation

Opinion	Frequency	Percentage (%)
Strong Disagree	28	21.5
Disagree	9	6.9
Neutral	6	4.6
Agree	46	35.4
Strong Agree	41	31.5
Total	130	100.0

Source: Field Data (2024)

The finding from interview with interviewee y as well as support from those questionnaire as it was from their experience they consider much on proper budget allocation for the green procurement implementation with the intention of green

production. The interviewees argued that proper budget allocation enhance green production by increasing financial capacity to pay those skilled labour who's their production skills enhance green production and purchasing the quality materials which may results to quality products which can not affect environment impact at large compare with the poor which is not environment friendly.

“.....In fact, environment conservation is very important for our sustainability for this case everyone is responsible to ensure that budget allocation is sufficiency to employ skilled labour and purchase quality raw materials for production process because our intention is to conserve our environment for this generation and future generation.....” (interviewee y)

This implies that the proper budget allocation in grape processing factories in Dodoma already in progress to conserve the environment through green procurement implementation.

4.3 Financial incentives

Table 2 below show that, through questionnaire administered to 130 respondents the researcher sought for opinion on financial incentives for implementation of green procurement practice in grape processing factories in Dodoma. Out of 130 respondents 37.7% strong agreed that financial incentives are suitable for implementation of green procurement practice in grape processing factories in Dodoma. 16.2% agree, 22.3% strongly disagree, 17.7% Disagree while 6.2% respond neutral.

Table 2: Financial incentives

Opinion	Frequency	Percentage (%)
Strong Disagree	29	22.3
Disagree	23	17.7
Neutral	8	6.2
Agree	21	16.2
Strong Agree	49	37.7
Total	130	100.0

Source: Field Data (2024)

The finding from interview with interviewee m as well as support from those questionnaire as it was from their experience they normally depend on financial incentives so that to implement green procurement practices. Financial Planning contributes a lot due to employee salaries, equipment maintenance cost, purchasing

quality raw materials, purchasing new equipment if required as well as administration cost that incurred for production operation in grape processing factories in Dodoma. The interviewees argued that financial incentives enable green production for those products produced in grape processing factories due to the fact that skilled staff and efficiency machine that normally used in production process for this case may reduce environment impact at large.

“.....You know there so many environments impact may resulted from unskilled labour due to lack of skills in the production process and unfortunately most of the people in our community are not aware on such kind of skills of the workers in particular factories it is very shame. Therefore, proper Financial Planning enhance green production in grape processing factories purposely to conserve the Environmental because environmental conservation starts with you not anybody else” (interviewee m)

This implies that the production manager and management in grape processing factories in Dodoma are so much committed to ensure that our environment remain safe through green procurement implementation.

4.4 Green material

Table 3 below show that through questionnaire administered to 130 respondents the researcher sought for opinion on green material for implementation of green procurement practice in grape processing factories in Dodoma. Out of 130 respondents 31.5% strong agreed that green material can influence implementation of green procurement practice in grape processing factories in Dodoma. 25.4% agree, 26.2% strongly disagree, 10.8% Disagree while 6.2% respond neutral.

Table 3: Green material

Opinion	Frequency	Percentage (%)
Strong Disagree	34	26.2
Disagree	14	10.8
Neutral	8	6.2
Agree	33	25.4
Strong Agree	41	31.5
Total	130	100.0

Source: Field Data (2024)

The finding from interview with interviewee k on grape processing factory in Dodoma concern with the importance of green material in grape processing factory on implementation of green procurement practices. The production manager from his own

experience declared that green material can contribute to green production which increasing the efficiency production because it determines quality production in grape processing factories in Dodoma. By opting for green material, grape processing factories can also satisfy customer.

“..... Green material had contribution in green production which is environmentally friendly in grape processing factories in Dodoma. Green material provides increasing the efficiency production because it determines quality production in grape processing factories in Dodoma.....” (interviewee k)

This implies that the management in grape processing factories in Dodoma apply the green material as the way to conserve the environment through green procurement implementation and encourage the use of quality materials which are environmentally friendly in the production process which are acceptable in green production.

4.3 inferential statistics

Table 4 indicates the influence of management financial support on implementation of green procurement practices in grape processing factories. The linear regression model was used to estimate the influence of such support.

Table 4: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta	t	
1	(Constant)	3.427	.274		12.510	.000
	larger budget	.078	.038	1.161	2.019	.046
	Budget allocation	.182	.035	.390	5.141	.000
	Financial planning	.127	.036	.273	3.517	.001
	Inadequate financial	2.073	.033	1.162	2.192	.030
	Green material	2.062	.033	2.136	1.867	.064
	Eco-friendly practices	.037	.041	.072	.890	.375

a. Dependent Variable: Green Procurement Practices

The table above indicates that every unit change of a larger budget had positive effects by 0.078 on the implementation of green procurement practice with a significant value of ($P < 0.046$). Therefore, the analysis showed that the relationship was statistically significant since the p-value was 0.046 which was less than 0.05.

The table above, indicates that every unit change of budget allocation by (0.182) effects positively the implementation of green procurement practices with a significant value of ($P < 0.0001$). Therefore, the analysis showed that the relationship was statistically significant since the p-value was 0.0001 which was less than 0.05. In fact, five selected grape processing factories in Dodoma can provide a sufficient budget for green procurement implementation, the ability of the factories to prepare good financial planning that could be able to pay staff salaries, as well as technological investment by purchasing the modern machine which can produce the quality products that environmentally friendly.

The table above, indicates that every unit change of financial planning by (0.127) effects positively the implementation of green procurement practices with a significant value of ($P < 0.001$). Therefore, the analysis showed that the relationship was statistically significant since the p-value was 0.001 which was less than 0.05. Five selected grape processing factories in Dodoma can provide sufficient financial incentives to support staff and other workers for green production, This increases the ability of the factories to prepare good financial planning that could be able to pay staff salaries, transport, and house allowances this will become a motivation to all staff to work seriously and efficient on using the modern machine which can produce the quality products that environmentally friendly.

From Table above, indicated that every unit change of inadequate financial effects positively by 2.073 the implementation of green procurement practice with significant value of ($P < 0.030$). Therefore, the analysis showed that the relationship was statistically significant since p-value was 0.030 which was less than 0.05.

From Table above, indicated that every unit change of green material effects positively by 2.062 the implementation of green procurement practice with significant value of ($P < 0.064$). Therefore, the analysis showed that the relationship was not statistically significant since p-value was 0.064 which was greater than 0.05. However five selected grape processing factories in Dodoma have challenges of availability of green materials to be used in green production process so that to implement green procurement practices. Most of staff and workers were somehow satisfied with management effort on purchasing green materials which are very crucial in green production towards implementation of green procurement practices

From Table above, indicated that every unit change of eco-friendly practices by (0.037) effects positively the implementation of green procurement practice with significant value of ($P < 0.375$). Therefore, the analysis showed that the relationship was not statistically significant since p-value was 0.375 which was greater than 0.054.

5. Conclusion and Recommendation

Conclusion

Generally, five selected grape processing factories in Dodoma have the ability to provide sufficient budget allocation for green procurement implementation, the ability of the factories to prepare good financial incentives that could be able to pay staff salaries, as well as the use of green materials that facilitate green production to produce the product that is environmental free regardless shortage availability. This green production will enhance environmental conservation and ensure its sustainability as far as the National Environmental Management Council (NEMC) and Tanzania Bureau Standards (TBS) regulatory requirements are concerned. In this case, staff workers were somehow satisfied with management financial support from five selected grape processing factories towards the implementation of green procurement practices.

Recommendation

The researcher recommended that the factory management should pay much attention to the necessary step ahead for them to maintain effective eco-friendly practices on the implementation of green procurement practices in grape processing factories in Tanzania. With respect to the shortage of green materials in the grape processing factories on implementation of green procurement practices, management should address those challenges to ensure that green materials are easily available to ensure factory performance to meet its environmental goals and objectives.

Areas for Further Research

This study looked at the influence of management financial support on implementation of green procurement practices in Tanzania. The researcher suggest further studies can be carried out on the influence of management support on implementation of green procurement practices in plastic manufacturing industries in Tanzania.

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The Role of Inventory Regulatory Framework on the Performance of Public Entities: TANESCO Region Dodoma

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Abstract

This article explores the role of the inventory regulatory framework on the performance of public entities. Inventory management practices are crucial for minimizing stockout risks, reducing carrying costs, improving customer satisfaction, and enhancing market competitiveness. However, public organizations encounter various challenges that affect their inventory management performance. This study aims to assess how the regulatory framework influences the performance of public entities within TANESCO Dodoma. To gather data cross-sectional design and mixed research approach were utilized. Where researcher, employed interviews with key informants to obtain qualitative information which was later complemented by quantitative data obtained through survey questionnaires. The findings indicate that the regulatory framework, organizational strategies, government regulations, staff qualifications, modern ICT tools, and reliable networks significantly impact the performance of public entities at a 5% level of significance. To enhance inventory management performance, it is recommended that TANESCO establish a dedicated unit to evaluate compliance with relevant laws, improve specialized expertise, and increase automation.

Keywords: *Inventory regulatory framework, performance of public entities*

1.0 Introduction

Inventory Regulatory Framework is a set of formal rules, guidelines, and policies established by governing authorities to regulate the management, control, and monitoring of inventories in organizations. These frameworks ensure compliance with legal, financial, and operational standards, helping to optimize the inventory process, minimize risks, and ensure accountability in public and private sectors.

The performance of public entities is often evaluated based on regulatory compliance standard, transparency financial management, resource utilization among others. It reflects how well public entities achieve their intended outcomes and serve the public interest.

Effective inventory management is essential for the smooth operation of public entities, especially in sectors such as energy where timely access to materials and spare parts ensures continuity of services. Effective inventory management can be achieved where there is establishment and adherence to a robust regulatory framework. As regulatory framework provides guidelines, policies, and procedures for handling, storing, and purchasing inventory, ensuring compliance with national standards and operational efficiency (Chan, 2022).

In public entities, inventory management faces unique challenges due to bureaucratic processes, political interference, and reliance on governmental budgets and procurement cycles (Ragasa et al., 2019). Unlike private companies, public utilities operate under stricter oversight, requiring a structured framework to ensure accountability and minimize inefficiencies. As such, regulatory frameworks play a critical role in mitigating risks like stockouts, excess inventory, theft, and wastage. They also ensure the alignment of procurement with the specific demands of the organization and market conditions (Narayanapillai, 2022).

In Tanzania, the importance of an inventory regulatory framework is particularly evident at TANESCO (Tanzania Electric Supply Company), the national power utility, which has struggled with inventory-related issues in its operations. TANESCO's ability to provide reliable electricity has been severely hampered by poor inventory practices, including the absence of critical spare parts and maintenance supplies (Kaijage, 2020). The CAG report (2021) highlighted significant mismanagement, identifying issues such as inadequate warehousing, stock imbalances, and delays in procurement as key contributors to frequent power outages and maintenance delays in Dodoma region.

By enhancing regulatory framework will streamline inventory processes at TANESCO, performance of the organization, ensuring timely procurement, accurate record-keeping, and minimizing stockouts and surplus inventory (Ignacio et al., 2019). Such frameworks have been proven to optimize performance in various public utilities globally, enabling smoother operations by ensuring compliance with policies that dictate inventory levels, procurement methods, and storage standards (Mugabe, 2019).

This study, therefore, examines the role of the inventory regulatory framework in improving the performance of public entities, focusing specifically on TANESCO Dodoma Region. Given the critical need for reliable electricity in Dodoma city, for

government operations, businesses, and households, the implementation of effective inventory management regulatory framework is crucial (Mwakabuta, 2022). By focusing on regulatory practices, this study contributes to ongoing efforts for addressing inventory challenges at TANESCO Dodoma and provide insights for potential reforms in the energy sector.

2.0 Literature Review

The study is grounded on Contingency Theory and Bureaucracy Theory. The Contingency Theory emphasizes that organizational processes, including inventory management, must be adapted to specific contextual factors such as regulatory frameworks, environmental instability, and internal dynamics (Van de Ven & Drazin, 1985). In public entities like TANESCO, the public sector regulatory environment introduces uncertainty from factors like fluctuating government funding, political interference, and skills shortages, necessitating flexible inventory management approaches (Kpundeh, 1998). In contrast, Bureaucracy Theory highlights the impact of formal rules, centralized control, and strict procedural adherence on public entities (Weber, 1922). TANESCO's inventory practices are likely influenced by bureaucracy, resulting from centralized systems which may result into rigid control and resistance to change and affect the organization operational performance.

The literature review plays a pivotal role in shaping the study, Makongo (2020) examined the impact of inventory management practices on the financial performance of gas manufacturing companies in Africa. The study focused on both private and public gas manufacturing firms across various countries, with data spanning from 2010 to 2020. The findings revealed a significant positive relationship between inventory management practices and financial performance. However, the study noted that maintaining higher inventory levels negatively affects financial performance due to increased carrying costs. Consequently, the study recommended that companies should maintain optimal inventory levels to avoid issues related to overstocking or understocking of inventory.

Penny et al, (2021) conducted a study to assess the effectiveness of inventory policy implementation in selected State-Owned Enterprises (SOEs) within Gauteng Province. The study identified four key themes that highlight the degree of inventory policy enforcement and its impact on inventory costs at each SOE. These themes encompassed compliance with inventory policies, instances of policy violations, the extent of policy implementation, the rate of inventory growth and its effect on carrying costs, and a shortage of planning skills among inventory planners.

Meanwhile, Seman (2021) conducted a study to assess the inventory management system at Habesha Cement Share Company. The findings indicated that while the

company's inventory management system was somewhat effective in controlling inventory levels, there were areas needing improvement, such as physical inventory counting, handling overstock and understock issues, ensuring data accuracy, and preparing real-time reports. The company primarily uses a perpetual inventory system to forecast customer demand. Key challenges identified included a lack of management support, insufficient qualified personnel, and inadequate training. Based on the results, the study recommended that management should establish clear standards and policies for inventory management, review and redesign current practices, monitor inventory carrying costs, and ensure only qualified, well-trained staff manage inventory control.

The conceptual framework for this study examines the relationship between the inventory regulatory framework and the performance of public entities, specifically focusing on TANESCO Dodoma Region. The inventory management regulatory framework, which serves as the independent variable, is measured through critical elements such as policies, regulations, laws, and replenishment strategies. These regulatory mechanisms guide inventory control and management within public institutions. The dependent variables, which represent the performance of public entities, are evaluated through key performance indicators such as economy, efficiency, and effectiveness. This framework hypothesizes that a robust regulatory framework for inventory management influences the performance of public entities by optimizing resource utilization, reducing wastage, and ensuring timely and efficient service delivery. According to Garrison (2018), conceptual frameworks offer a structured approach to systematically explore relationships between empirical properties, and this framework seeks to establish the link between regulatory frameworks and organizational performance.

3.0 Research Methodology

The study employed a mixed-method approach, incorporating both qualitative and quantitative techniques. This approach was chosen because it is well-suited for exploring complex relationships, enabling the investigation of both personal experiences and perceptions as well as numerical data relating to the subject under study.

The study focused on TANESCO in Dodoma Region, which was selected as the research area due to its increase in energy demand as the city is highly growing. Also, TANESCO is the sole provider of electricity, responsible for the generation, transmission, and distribution across the country, making it a prime entity to assess challenges relating to inventory management and performance. The focus is on the inventory regulatory framework in TANESCO Dodoma, as it is not only the capital

city where government decisions are made but also the main office for the Tanzania parliament and ruling party all these increase the population and energy demand.

For the purpose of accurate data/information about the problem the study adopted a Case-Control Study design. Case studies allow an in-depth investigation of a phenomenon within its real-world context, enabling a better understanding of complex organizational processes (Yin, 2014). The exploratory approach is optimal given the limited prior research focused specifically on inventory management practices on public entities. The single case study was facilitated thorough examination of Inventory management procedures, systems (technologies) and challenges at TANESCO Dodoma Region. . As a public organization responsible for electricity provision, the findings could offer insights for other organizations facing similar external constraints and internal dynamics.

The population for this study consisted of employees involved in inventory management at TANESCO Region Dodoma, focusing on those engaged in planning, decision-making, execution, and oversight of inventory functions (Msangi, 2021). The study involved employees, including procurement managers, inventory supervisors, storekeepers, warehouse supervisors, maintenance technicians, and accounts staff. For the sample, the study employed the Yamane formula to get proper sample of participants. This sample aimed to capture a diverse range of perspectives, ensuring representation from all key roles related to inventory management processes. The study employed both simple random sampling for participant selection and purposive sampling to ensure information-rich cases were selected for in-depth analysis. This non-probability purposive sampling approach was particularly useful in targeting roles critical to inventory regulatory frameworks, such as procurement managers and inventory supervisors, for deeper investigation (Mesele, 2021; Kothari, 2014). This study used both primary and secondary data.

A comprehensive approach was employed for data collection and analysis. The data was gathered through structured questionnaires, designed to systematically collect information on attitudes, opinions, and behaviors of the target population, facilitating efficient outreach to a diverse respondent base (Floyd & Fowler, 2014). Additionally, in-depth interviews provided a platform for direct engagement with participants, enabling the researcher to delve into their perspectives and motivations, thus enriching the qualitative data obtained (Yin, 2019). Furthermore, a documentary review was conducted to analyze existing datasets and reports, allowing for historical context and validation of findings through established literature. Data analysis involved thematic analysis to identify recurring themes and insights from qualitative data, while content analysis systematically extracted pertinent details from organizational documents related to inventory management.

4.0 Findings and Discussion

This section provides an analysis and discussion of the study's findings. The study considered demographic characteristics of the respondents for the purpose of responding to, specific objectives and addressing the research questions.

The comprehensive demographic overview underscores the potential influence of respondent characteristics on the study's findings and highlights their relevance in assessing inventory management practices in public entities (Rajab et al, 2017).

To examine the role of inventory regulatory framework on the performance of public entities at TANESCO Region Dodoma

Descriptive statistics for Inventory regulatory framework

This section examines, presents, and discusses the Inventory regulatory framework, which focuses on the role of inventory management practices on the performance of public entities in TANESCO. The results are reported using descriptive statistics, including measures of central tendency and variability such as mean and standard deviation to show the visualization of respondents on Inventory regulatory framework. From the findings revealed a mean of 2.42, 2.21, 2.01 and 2.08 which show the agreement of respondents towards the existence of regulatory requirements, compliance with relevant laws, organization's replenishment strategies and policies is low performed. These results imply that there is low roles of inventor regulatory framework in TANESCO that are used for public entities Performance as shown in table 5 below:

Table 43: Descriptive Statistics on the Inventory regulatory framework

	A	B	C	D
		N	Mea n	Std. Deviation
1	Adhering to regulatory requirements is essential for effective Inventory management	109	2.42	.699
2	compliance with relevant laws greatly influences our Inventory management practices	109	2.21	.589
3	Organization's replenishment strategies contribute significantly to maintaining optimal inventory levels.	109	2.01	.031
4	Government regulations and guidelines are helpful in shaping our inventory management policies.	109	2.08	.721

5	Valid N (listwise)	109
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Furthermore, the researcher uses logistic regression to get depth information on the Role of inventory regulatory framework on public entity performance and the findings are elaborated here below; -

Role of inventory regulatory framework on public entities performance.

The logistic regression model goodness of fit was used to see the role of Inventory management regulatory framework on inventory management performance. The below shows the omnibus tests of model coefficients, model summary, Hosmer and Lemeshow Test and variables in the equation of the role of inventory management policies factors included in the model.

Table 44: Omnibus Tests of Model Coefficients

		Chi-square	Do	Sig.
Step 1	Step	11.528	4	.020
	Block	11.528	4	.020
	Model	11.528	4	.020

The omnibus test is a likelihood-ratio chi-square test that compares the current model to the null model. A significance value below 0.05 suggests that the current model is superior to the null model. In this instance, the current model has a p-value of 0.020 and a chi-square value of 11.528.

Table 45: Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square	R
1	53.162 ^a	.205	.278	

The analysis revealed that both the Cox & Snell R square and Nagelkerke R square values were positive, at 0.205 and 0.278, respectively. These findings suggest that the model accounts for 21.5% and 28.8% of the total variation, as indicated by the coefficients of determination.

Table 46: Hosmer and Lemeshow Test

Step	Chi-square	Df	Sig.
1	7.220	7	.296

The Hosmer and Lemeshow test assesses the goodness of fit and calibration of logistic regression models. In this case, the test statistic was 7.220, with a p-value of 0.296 (greater than 0.05). This indicates that the model is a good fit for the dataset.

Table 47: Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Regulatory requirement	1.173	.441	5.430	1	.018	3.472
Compliance with relevant laws	-.249	.505	.233	1	.563	.605
Organization strategies	1.460	.637	4.380	1	.033	4.661
Policy	-1.740	.785	4.224	1	.037	.149
Constant	-1.242	2.423	.183	1	.594	.251

The findings as presented in Table 9 revealed that, regulatory requirement has a positive significant influence on public entities performance ($\beta=1.173$), and is statistically significant at 5% (p-value=0.018). This means that 1 unit increasing of Regulatory requirement increases on public entities' performance of TANESCO by 1.173 times. This also has been indicated by the odd ratio of 3.472 implying that having an organization with the regulatory requirement in inventories is 3.472 times more likely to increase the on public entities performance of TANESCO than having an organization with no regulatory requirement.

Compliance with relevant laws, has a negative significant influence on public entity's performance ($\beta=-.249$), and are statistically insignificant at 5% (p-value=0.563). This means that 1 unit increasing of Compliance with relevant laws decreases the on public entities performance in TANESCO by 0.249 times. This also has been indicated by the odd ratio of 0.605 implying that having an organization with Compliance with relevant laws public entities performance is 0.249 times more likely to decrease the on public entities performance of TANESCO than having an organization with no Compliance with relevant laws.

Organisation strategies, have a positive significant influence on public entities performance ($\beta=1.460$), and are statistically significant at 5% (p-value=0.033). This means that 1 unit increase in Organisation strategies increases on public entities performance of TANESCO by 1.460 times. This also has been indicated by the odd ratio of 4.661 implying that having an organization with Organisation strategies in construction projects is 4.661 times more likely to increase the on public entities performance of TANESCO than having an organization with no Organisation strategies.

Policies, have a negative significant influence on public entities performance ($\beta=-1.740$), and are statistically significant at 5% (p-value=0.038). This means that 1 unit increasing of policies decreases the on public entities performance in TANESCO by

1.173 times. This also has been indicated by the odd ratio of 1.740 implying that having an organization with policies inventory performance is 1.740 times more likely to decrease the on public entities performance of TANESCO than having an organization with no policies.

From the above discussions, the findings reveal inventory regulatory framework is very important for the organization to perform better in inventory management and institutional performance. To support the above findings the researcher conducted an interview session with the heads of departments, who was interviewed to comment on whether regulatory requirements, Compliance with relevant laws, Organisation strategies and policies have a significant role in public entity performance. The respondent/interviewees had these to say:-

“I believe that adhering to the regulatory requirement is important and very effective in ensuring inventory performance also existence of well outlined procedures and guidelines give guidance for decision making and streamline internal process.” (Key Informant Interview).

“ I believe that adhering to the laws is important and ensuring inventory performance, compliance with government laws contribute to the performance of the inventories, regardless this is not enough without the government interventions.” (Key Informant Interview).

*“I believe that a government regulations and guidelines are helpful in shaping our inventory management **policies**, these policy is a set of guidelines that a company follows to determine when, how much, and what type of inventory should be ordered or produced to meet customer demand while minimizing costs.”* (Key Informant Interview)

The results are also similar to (Aloyce, Luvara & Monko 2023), which emphasize that the role of Inventory regulatory framework in Tanzania underscoring its influence on public entities performances. The same scenario is supported by Cao and Lumineau (2021) who on the same issue argued that, Inventory regulatory framework enables organisations to monitor inventory from acquisition to sale, thereby minimising surplus inventory and guaranteeing that there is sufficient inventory to fulfil customer orders.

The study responds to CAG reports, internal audit report and TANESCO annual report (2021/2022) which indicate that despite the fact that TANESCO have inventory regulatory framework and guidelines still there challenges sported in these reports. These challenges include inventory management practices, under implementation of Annual Procurement Plan contrary to Regulation 69(3) of public Procurement Regulation 2013 by TANESCO Dodoma region and other challenges that may affect

overall performance. The study observed that the highlighted challenges reduced TANESCO abilities to maintain reliable electricity supply, affecting service delivery and customer satisfaction.

According to the Public Procurement Act of 2011 and its accompanying regulations (Public Procurement (Goods, Works, Non-Consultant Services and Disposal of Public Assets) Regulations, 2013), public entities like TANESCO are mandated to adhere to established inventory management practices. Section 68 of the Public Procurement Act emphasizes that public entities must develop and maintain procurement management systems to ensure proper inventory management. Regulation 69(3) specifically requires that public entities prepare and implement Annual Procurement Plans to ensure compliance with inventory regulations. Despite these provisions, challenges persist, including: **Insufficient Training:** Many staff members are not adequately trained in inventory management practices, leading to poor compliance with the existing laws and regulations. **Lack of Awareness:** There is a general lack of awareness regarding the importance of these regulations among the employees, resulting in non-compliance. **Inadequate Monitoring and Evaluation:** There is a gap in monitoring the implementation of the procurement plans, leading to deviations from the regulatory framework. However, the study has noted meaningful improvements in addressing inventory regulatory framework challenge including; formulating approved performance management policy which provides for improving employees competence, professionalism and motivation, and company intercorporate strategies plan 2021/2022, Interim Corporate Strategic Plan (ICSP) 2021-2024 all focus on solving existing challenges and capitalizing available opportunities),the take-off the Enterprise Resource Planning coded project DUMA have marked an incredible steps towards digital transformation of the company.

5.0 Conclusion and Recommendation

Conclusion

The role of the inventory regulatory framework is crucial for the performance of public entities at TANESCO in the Dodoma region. The findings indicate that adherence to inventory management practices significantly enhances organizational performance, suggesting that entities compliant with regulatory requirements experience greater improvements compared to those that do not. Additionally, the implementation of staff competence within TANESCO is pivotal, as specialized knowledge and qualifications directly correlate with enhanced operational effectiveness. Furthermore, the integration of technology and modern ICT equipment is essential for efficient inventory management. This high level of automation supports better inventory practices, reinforcing the notion that organizations leveraging reliable networks and advanced technology are more likely to achieve improved performance in inventory

management. Overall, these elements underscore the importance of a robust inventory regulatory framework in enhancing public entity performance at TANESCO.

Recommendations

The study recommends the government to reinforce the implementation of existing policies, as adherence to these regulations as they are likely to yield a positive and significant impact on the performance of public organizations. Also, TANESCO should consider establishing a strong and dedicated unit tasked with assessing the challenges related to inventory management practices and proposing effective solutions. Further, the unit should be staffed by professionals with relevant experience to ensure the ongoing improvement and management of inventory practices.

In additional, examining the interplay between organizational culture and leadership styles in implementing inventory management practices could yield valuable findings. Comparative analyses across different industries or regions may also enhance the understanding of best practices and challenges in inventory management, ultimately contributing to operational excellence.

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The Effect of Supplier's Commitment on Implementations of the Procurement Framework Agreement Contract for Common Used Items in LGAS.

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Abstract

The paper's main goal was to examine the effect of supplier's commitment on implementations of the procurement framework agreement contract for common used items in local government authorities. The study employed Cross section design and a population of 350 staffs, and the sample size was 187 staff selected through simple random sampling. A questionnaire was used as a tool for data collection while data was analysed by using descriptive analysis and liner regression by using Statistical Package for Social Sciences version 23. The study showed that, there was a positive and statistically significant relationship between following through with timely delivery, (0.000), product quality (0.000) and product quantity (0.000). This was determined through analysis, as the p-value for all variables was less than 0.05. The results suggest that there is a positive and substantial correlation between supplier's commitments on implementations of the procurement framework agreement contract. The study concluded that supplier's commitment affects implementations of the procurement framework agreement contract for common used items in local government authorities. The study recommended that the to develop strong policies regarding framework agreement contracts for common used items to improve the effective applicability to government authorities. Management should ensure that employees and stakeholders such suppliers are well provided with adequate training related to the adoption and application of framework contracts.

Keywords: *Supplier's commitment, implementations, procurement framework agreement contract, common used items, LGAs.*

1.0 Introduction

Framework agreements involve the agreement between one or more contracting authorities and one or more economic operators, the purpose of which is to establish the terms governing contracts to be awarded during a given period, in particular with regard to price and, where appropriate, the quantity envisaged, intended to reduce procurement costs and enable procuring entities to access relevant information (Altho, 2019). According to World Bank (2019),Frame work Agreements is an agreement with

one or more firms that establishes the terms and conditions that will govern any contract awarded during the term of the Framework Agreement. As Per Reg. 131 of PPR 2019 its states clearly the conditions on which the PEs engaged to the frame work Agreements shall supposed to follows in order to procure the CUIs.

Olivares et al, (2023) claimed that when government and organization design rules for framework agreement it is important to consider the level of price competition to optimize required target. Bednárová (2021) explained that FWAs were awarded €85 billion in 2010 in the European Union only, accounting for 17% of the total value of all contracts awarded, and their use has increased in the European Union (EU) at an average rate of 18% since 2006.

In Africa, the adoption of FWAs is credited to the potentials of the approach in addressing the key failings of short-term and fragmentation of the production team and processes of traditional contracting practices in response to the challenges of complexities and uncertainties in construction (Ayegba, 2020). It was explained that framework contracts allow organization to establish the terms for supply of series of repeated procurement for specific period of time without the need for tendering (Eyo, 2020).

Okoth and Kongere (2018) argued that framework agreements is a procurement strategy that adopted in recent years and tend to bring benefits on significant cost saving, procurement time and other resources. In addition, the study established that capacity of procuring entity, pricing, nature of procurement, legislative provision and urgency of procurement needs affect the adoption of framework agreements contract. Berhie (2022) discussed that the application of framework agreement requires skill and experience to look at the broad view of the received benefits at all level of procurement rather than looking on price reduction alone. Ahmed et al, (2022) argued that organization face lot of problems when conducting public procurement using framework agreement where the major challenges identified were on time delivery of product, poor standard of product and effective budget.

Tanzania as one of Sub-Saharan countries also adopted a framework agreement for the common use items and services which are procured by procuring entities through Government Procurement Services Agent (GPSA). The Agency is mandated to monitor the framework agreements in Tanzania Mainland (GPSA, 2021). Framework Agreement Information exchange mechanism system introduced by GPSA which is known as GPSA PMIS (GPSA, 2022) where by public organization access the name of the suppliers or service providers who are registered under framework agreements at their region.

According to Adam, (2020) the determinants influencing the Execution of Procurement Framework Agreements in Local Government Authorities: particularly in Moshi Co-operative University includes supplier performance, information exchange methods, employee proficiency, and adherence to public procurement regulatory standards. Ahmed et al (2022) postulated that, Factors Affecting Framework Agreement includes, (economic, commercial, technological, political, social, and legal) and internal factors (organisational knowledge, experience, project characteristics, cost, and time constraints) that influence the adoption of framework agreements at the national level.

Mboma (2022) identified several challenges on framework agreement procurement such as limited financial capacity and inadequate human resources to effectively procurement functions management. Altho (2019) discussed that sometimes variations happens because of inadequate contract management and failure to evaluate supplier's performance effectively. Therefore the study assessed the factors affecting implementation of the framework agreement contract for common used items in public procurement in Local Government Authorities in Dodoma, Tanzania.

1.1 Statement of the Problem

Procurements framework agreements reduce tendering procedures, ensure the efficiency, and effectiveness of the entire procurement process and reduce costs associated with buying and selling goods and services (PPA 2022) as Amended. Despite the Tanzanian government's efforts to improve public procurement accountability and effectiveness through procurement framework agreements for CUIS, some challenges remain in Local Government Authorities (LGAs) (Lawson, Hedvall, Thue-Hansen and Contreras, 2019).

LGAs procured goods and services from unauthorized suppliers and procured goods from suppliers that did not have framework agreements with the GPSA (NAOT, 2020). CAG reports of 2019/2020 in the audit of local government authority revealed that LGAs procured goods and services from suppliers without having framework agreements from GPSA worth TZS 5,130,195,752, also CAG report of 2021/2022 found out those 27 LGAs made procurement of goods and services worth TZS 5.68billion from suppliers not shortlisted by GPSA. The study related to factors affecting implementation of the framework agreement contract in public procurement in Local Government Authorities was conducted but the problem are still available as reported by CAG(NAOT, 2020).

Previous studies showed mixed views, such as Mboma (2022) who found that factors such as delivery of goods and services on time; delivery of goods and services as per local purchase order; delivery of right quality as per specification; delivery of right

quantity; provision of corrective actions for defective items; offering of technical support for goods sold to the implementation of framework agreements in local government's authorities. A study by Omari (2020) found that employee competency (staff awareness, knowledge, skills, training and support respectively) has significant influence on implementation of framework agreements. Another study showed that, the supplier selected by GPSA does not meet contract terms and conditions of framework agreement when they offer a higher price than market price (Altho, 2019). However, these studies did not conduct study on factors affecting implementation of framework agreement contract for common used items in public procurement. Therefore, this researcher filled the gap by assessing on the selected Dodoma local government's authorities.

2.0 Literature Review

Berhie (2022) explain that suppliers who involved in framework contract agreements are called framework contract suppliers and are obligated to deliver the requirements. The main justification for this agreement is to gain efficiency although delivery of poor quality goods is the problem to the efficiency of framework agreement in public procurement. Also the delivery of goods in right quantity has been challenge on framework agreement procurement where stock-out identified as one of main reasons why procuring entity forced to order unnecessary quantity to avoid under delivery.

Ahmed et al, (2022) conducted study on the factor influencing framework agreement in public procurement. On the study it was explained that the firm reduce the number of suppliers as it can use its purchasing power with few selected suppliers to negotiate best lowest price in exchange for acquiring large quantity of product. However it was argued that organization face lot of problems when conducting public procurement using framework agreement where the major challenges identified were on time delivery of product, poor standard of product and effective budget.

Mboma (2022) conducted a study and revealed that suppliers sometimes were not aware of the demand when it was tendered which likely to find difficult to secure business to cover requirements by the framework agreement. It was discussed that is better idea for suppliers to investigate what framework agreement comprises, what is already exist and when they might be up for tender. Suppliers included in framework agreement should not take business for granted to fulfill the requirements for procuring entities.

Eyo (2020) explained that framework contracts allow organization to establish the terms for supply of series of repeated procurement for specific period of time without the need for tendering. The study identified significant challenges in framework agreement procurement such as delays of product as entities fail to set framework of

time to use. Also there were supplier's related problems such as some suppliers accepted on the framework agreement failed to sufficiently honor purchase orders from procuring entities. Bawole & Adjei-Bamfo (2019) also identified challenges faced framework agreement such as delays in the delivery, stock out of goods and delivery of goods and services under standard or below to the specification.

3.0 Research Methods

This study employed a Cross-sectional research design. The researcher obtained a study sample through stratified random sampling. The sampling process resulted in the collection of respondents from various sectors such as procurement, accounting, administration, internal audit, and tender board. This study was conducted in the Dodoma city council and Chamwino District council in Dodoma region, because these three LGAs are more involved in procurement of common used items under FWAs than other entities and also are among public entities that were found with more irregularities of buying from unapproved suppliers (CAG, 2022). Data collection processes were done using questionnaires; the primary data collection entailed getting information straight from the participants. Conversely, Questionnaires served as the primary data gathering tool, providing quantitative insights into the effect of supplier's commitment on implementations of the procurement framework agreement contract for common used items in LGAs. While closed-ended questions provide background information, open-ended questions permit further in-depth research. Questionnaires have the advantage of being economical, impartial, and giving respondents enough time to respond. The questionnaire utilized a five-score Likert scale, identifying the extremes of strongly disagree and strongly agree.

3.1 Data Analysis

This method was important for the researcher because it allowed for the acquisition of multiple data points. A structured questionnaire assisted a researcher in gathering data and formulates a detailed conclusion. Data analysis involved, looking over, classifying, adding up, or reorganizing the information gathered for a study to answer the original research question. In this work, the researcher analysed data gathered from a statistical population on effect of supplier's commitment on implementations of the procurement framework agreement contract for common used items in LGAs. Preparing, organising, and reporting are the components of data analysis, as stated in Eloet al. (2014). To ascertain response frequencies and perform percentage-based comparisons, the gathered data were subjected to analysis utilising SPSS Version 23 and descriptive statistics. Measures like percentage and frequency were used in descriptive statistical analysis on the information gathered from the surveys while the inferential statistics was employed to examine the influence of the independent variable over the dependent variable. See Table 1

Table 1: Data Analysis Matrix

Objectives	Indicators	Measurement	Analysis
To examine the effect of supplier's commitment on implementations of the procurement framework agreement	<ul style="list-style-type: none"> • On time delivery • Quality of products • Right quantity 	Five point likert scale	Frequency Distribution and Regression analysis
Dependent variable			
Framework agreement implementation	<ul style="list-style-type: none"> • Cost Effectiveness • Timely delivery 	Five point likert scale	Frequency Distribution and Regression analysis

Source: Field Data (2024)

To determine the relationship between the dependent and independent variables, the method used was linear regression.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon \quad (1)$$

Where:

The Dependent Variable Y = Framework agreement implementation is measured by

- i. Cost Effectiveness ii. Timely delivery

β_0 = Constant coefficient

The independent variable (X) = Supplier's commitment which is measured by

X_1 = On time delivery

X_2 = Quality of products

X_3 = Right quantity

3.2 Findings and Discussion

The collected data indicated the following results

Supplier Commitment on FAC Implementation for Common Used Items

The objective was to examine the effect of supplier's commitment on implementations of the procurement framework agreement contract for common used items in three selected LGAs, Dodoma. The objective was measured through timely delivery of products, quality of products and ability to supply required quantity by the suppliers.

Inadequate Timely Delivery of the Product

The purpose of the statement was to examine the opinions from respondents on if the inadequate timely delivery of products from suppliers hinder effective implementation of FAC on common used items in LGAs. The responses have been revealed on the table below;

Table 23: Inadequate Timely Delivery of the Product;

Responses	Frequency	Percent
Strongly Disagree	13	7.0
Disagree	27	14.4
Neutral	12	6.4
Agree	82	43.9
Strongly agree	53	28.3
Total	187	100.0

Source: Survey Data (2024)

Results on Table 2 shows the descriptive analysis on opinions of respondents if inadequate timely delivery of products from suppliers hinders effective implementation of FAC on common used items in LGAs. Study revealed that 7% (n=13) of the respondents were strongly disagreed, 14.4% (n=27) of respondents have disagreed, 6.4% (n=12) were neutral, 43.9% (n=82) of the respondents were agreed, and 28.3% (n=53) of the respondents were strong agreed to the question. The results of findings revealed that majority which evidenced by 43.9% of the respondents agreed on statement that inadequate timely delivery of products from suppliers hinder effective implementation of FAC on common used items. Therefore the results implied

inadequate timely delivery of products from suppliers is factor affecting the implementation of FAC for common used items in LGAs.

Inadequate Quality of Products Delivery from Suppliers;

The purpose of the statement was to examine the opinions from respondents on if the inadequate quality of delivered products from suppliers hinder effective implementation of FAC on common used items in LGAs. The responses have been revealed on the table below;

Table 34: Inadequate Quality;

Responses	Frequency	Percent
Strongly Disagree	22	11.8
Disagree	40	21.4
Neutral	20	10.7
Agree	68	36.3
Strongly agree	37	19.8
Total	187	100.0

Source: Survey Data (2024)

Results on Table 3 shows the descriptive analysis on opinions of respondents if inadequate quality of delivered products from suppliers hinders effective implementation of FAC on common used items in LGAs. Study revealed that 11.8% (n=22) of the respondents were strong disagreed, 21.4% (n=40) of the respondents have disagreed, 10.7% (n=20) were neutral, 36.3% (n=68) of the respondents were agreed, and 19.8% (n=37) of the respondents were strong agreed to the question.

The results of findings revealed that majority which evidenced by 36.3% of the respondents agreed on statement that inadequate quality of delivered products from suppliers hinder effective implementation of FAC on common used items. Therefore the results implied inadequate quality of delivered products from suppliers is factor affecting the implementation of FAC for common used items in LGAs.

The findings supported Ahmed et al, (2022) identified poor standard of product delivered from the suppliers as one of the major challenges facing organization when conducting procurement by using the framework agreement contracts. Berhie (2022) explain framework contract suppliers are obligated to deliver the requirements with

justification to gain efficiency although delivery of poor quality goods turned to be the problem to the efficiency of framework agreement in public procurement.

Inadequate Quantity of Products Delivery from Suppliers;

The purpose of the statement was to examine the opinions from respondents on if the inadequate quantity of delivered products from suppliers hinders effective implementation of FAC on common used items in LGAs. The responses have been revealed on the table below;

Table 45: Inadequate Quantity;

Responses	Frequency	Percent
Strongly Disagree	25	13.4
Disagree	38	20.3
Neutral	24	12.8
Agree	60	32.1
Strongly agree	40	21.4
Total	187	100.0

Source: Survey Data (2024);

Results on Table 4 shows the descriptive analysis on opinions of respondents if inadequate quantity of delivered products from suppliers hinders effective implementation of FAC on common used items in LGAs. Study revealed that 13.4% (n=25) of the respondents were strong disagreed, 20.3% (n=38) of the respondents have disagreed, 12.8% (n=24) were neutral, 32.1% (n=60) of the respondents were agreed, and 21.4% (n=40) of the respondents were strong agreed to the question.

The results of findings revealed that majority which evidenced by 32.1% of the respondents agreed on statement that inadequate quantity of delivered products from suppliers hinder effective implementation of FAC on common used items. Therefore the results implied inadequate quantity of delivered products from suppliers is factor affecting the implementation of FAC for common used items in LGAs.

Regression Analysis of Supplier Commitment and FCA Implementation

Table 5: Model Analysis

	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.789 ^a	.623	.617	.50417

a. Predictors: (Constant), Timely Delivery of Products, Product Quality and Product Quantity.

Results in Table 5 above shows above shows the amount of variation on the dependent variable explained by the independent variables. The independent variable supplier commitment is reported with R value of 0.789 and $R^2 = 0.623$ which means that 62.3% of corresponding variations in effective framework agreement contract implementation. Thus inadequate timely delivery, quality and quantity of products by suppliers cause variations on effective FAC implementation by 62.3%. The remaining percentage of variations that is 37.7% can be explained by other factors that were not included in the study.

Table 6: ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	76.869	3	25.623	100.803	.000 ^b
	Residual	49.516	183	.254		
	Total	123.385	186			

a. Dependent Variable: FAC Implementation

b. Predictors: (Constant), Timely Delivery of Products, Product Quality and Product Quantity.

The ANOVA results indicated a level of significance of 0.00 and F test gave a value of $F = 100.803$ for supplier commitment which is relatively large enough to support the goodness of fit model. That is to say if obtained sig value is within researcher predetermined significant value 0.05, then the model has capability of predicting. This implied that the model is significant in demonstrating that supplier commitment is a useful predictor of the implementation of framework agreement contracts.

Table 7: Coefficient

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1	(Constant)	2.783	.180	15.420	.000
	Timely Delivery	.275	.036	.412	7.726 .000
	Product Quality	.373	.031	.607	12.010 .000
	Product Quantity	.265	.029	.442	9.149 .000

a. Dependent Variable: FAC Implementation

The results obtained in Table 7 show that the magnitude of the coefficient for inadequate timely delivery of products by supplier is significant with significant level of 0.000, and by having beta value of 0.412 which implies that for any unit of delay in delivery of products by supplier it would contribute to ineffectiveness approximately by 41.2% on FAC implementation. Also, analysis showed coefficient for inadequate quality of products from supplier is significant with significant level of 0.000, and by having beta value of 0.607 implies that for any unit of poor products quality from supplier it would contribute to ineffectiveness approximately by 60.7% on FAC implementation. For the third predictor variable, study indicates magnitude of the coefficient for inadequate quantity of products delivered from supplier is significant with significant level of 0.000, and by having beta value of 0.442 implies that for any unit shortage in quantity delivered from supplier it would contribute to ineffectiveness approximately by 44.2% on FAC implementation. The study results above indicates that time delivery, quality and quantity attribute have strong statistical significance to the implementation of FA. It also implies that, the commitment of the suppliers plays a tremendous role in the implementation of FAC.

4.0 Discussion of the findings

The findings supports the study of Ahmed et al, (2022) who argued that organization face lot of problems when conducting public procurement using framework agreement where one of the major challenges identified were on time delivery of product from suppliers. Also Eyo (2020) identified significant challenges in framework agreement procurement such as delays of product as entities fail to set framework of time to allow terms for supplies for specific period of time without the need for tendering. Adjei-Bamfo (2019) furthermore revealed several challenges faced framework agreement

such as delays in the delivery, stock out of goods and delivery of goods and services under standard or below to the specification.

The findings supported by Berhie (2022) where it was claimed that the delivery of goods in right quantity has been challenge on framework agreement procurement where stock-out identified as one of main reasons why procuring entity forced to order unnecessary quantity to avoid under delivery. Mboma (2022) also discussed that suppliers sometimes were not aware of the demand when it was tendered which likely to find difficult to secure business to cover requirements by the framework agreement. Therefore the study suggested that is better idea for suppliers to investigate what framework agreement comprises, what is already exist and when they might be up for tender.

The study is linked to the study of Berhie (2022) who explained that suppliers who involved in framework contract agreements are called framework contract suppliers and are obligated to deliver the requirements. The main justification for this agreement is to gain efficiency although delivery of poor quality goods is the problem to the efficiency of framework agreement in public procurement. Also the delivery of goods in right quantity has been challenge on framework agreement procurement where stock-out identified as one of main reasons why procuring entity forced to order unnecessary quantity to avoid under delivery.

5.0 Conclusion, Implications, Area for Further Research and Limitations of the study

5.1 Conclusion

The study concluded that the effective implementation of framework agreement contracts for common used items has been affected by the availability of inadequate supplier commitment, inadequate employee's competence and price variation. The capacity of suppliers to deliver items punctually, in the appropriate quality and quantity, while offering essential technical support and corrective measures, profoundly influences the effective execution of framework agreements. Efficient communication and information transfer between procurement organisations and suppliers, including the utilisation of technological platforms such as TANePS (Tanzania National e-Procurement System), are essential. The integration of novel technology and information exchange channels improves the efficiency and transparency of the procurement process. The expertise, competencies, and training of procurement personnel are crucial. Ongoing training and assistance for personnel guarantee their proficiency in managing and executing framework agreements efficiently. The successful implementation of framework agreement contracts in public procurement depends on a combination of supplier performance, efficient

information exchange, skilled personnel, and compliance with legal frameworks, supportive organisational factors, and anti-corruption measures. By concentrating on these domains, public procurement institutions can improve the efficiency, transparency, and efficacy of their procurement procedures. Also, the researcher made a conclusion based on every specific objective as explained below.

5.2 Implications

5.2.1 Practical Implication

The research study conducted at Ministry of Home Affairs Headquarter. Findings revealed that regulatory compliance, affect procurement audit performance. Therefore, the study made recommendation thus commitment of suppliers is critical to the successful implementation of procurement framework agreements for frequently used commodities in Local Government Authorities. Suppliers who are committed are more likely to provide items on time and with consistency. This eliminates the possibility of stockouts and ensures that LGAs have the appropriate supplies when required. Committed vendors are more likely to meet quality criteria. This guarantees that the purchased items fit the required requirements and avoids the possibility of receiving substandard goods. Committed suppliers assist reduce procurement risks such as delays, noncompliance, and quality difficulties. This enables smoother operations and decreases the administrative burden for LGAs. Suppliers who are committed are more likely to follow the terms and conditions of the framework agreement. This involves conforming to delivery schedules, maintaining quality standards, and complying with procurement requirements. Commitment improves communication and collaboration between suppliers and LGAs. This can result in more effective problem-solving and faster resolution of any difficulties that may emerge during the contract duration. A strong commitment from suppliers might result in improved pricing and cost efficiency. Suppliers who prioritise long-term relationships may offer more competitive rates and better terms, which help the LGAs financially.

5.2.2 Managerial Implication

Based on the findings, the study made recommendations to policy makers to develop strong policies regarding framework agreement contracts for common used items to improve the effective applicability to government authorities. Adequate policies can help to provide right direction on how government authorities and suppliers can minimize the problems such as price variations on framework contracts. Development alone does not work, also policy makers should effective plans to advice and convincing government on immediately and adequate implementation of developed policies for better performance of national procurement system.

5.3 Areas of Further Studies

The study was carried out in order to assess the factors affecting implementation of the framework agreement contract in Local Government Authorities where Bahi, Dodoma City and Chamwino district councils were used as study areas. The study suggests that future studies be conducted on challenges hindering supplier's performance in framework agreement contracts for common used items. Also studies concerned with factors for the effectiveness of framework contracts implication for central government can be carried as well.

5.4 Limitations of the study

The study focused primarily on the variables of transparency and data access. The majority of respondents expressed hesitation to share their thoughts due to fears of prospective enquiries. The inquiry was constrained by a small sample size, with just a few respondents available during the data collection process. However, this constraint had no effect on the study's reliability or validity. Certain data were classed as confidential, limiting the study's data accessibility. As a result, the study's data was gathered entirely through interviews and questionnaires.

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Assessing the Relationship between Professional Development and Employee's Retention within PSSSF in Dodoma Region, Tanzania

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Abstract

This study explores the impact of professional development on employee retention within the PSSSF in the Dodoma Region, Tanzania. Utilizing a survey design and cluster sampling, the study gathered data from 93 Human Resource Management staff members. Data collection involved a structured questionnaire, and analysis was conducted using multiple linear regression. The results indicate that factors such as worker's skills development, mentorship programs, cross-functional training, and participation in conferences or networking events significantly influence employee retention. Notably, worker's skills development ($B = 0.331$, $p < 0.001$) was identified as the most significant predictor of retention, underscoring the crucial role of continuous skill enhancement in maintaining employee commitment. Mentorship programs ($B = 0.056$, $p < 0.001$) and cross-functional training ($B = 0.072$, $p < 0.001$) were also found to positively impact retention, highlighting their importance in fostering a supportive work environment and broadening employee skills. Although career advancement equality ($B = 0.057$, $p = 0.249$) and participation in conferences or networking events ($B = 0.040$, $p = 0.011$) had a positive but less pronounced effect, they nonetheless contribute to overall retention. The model's high R Square value of 0.672 indicates that these factors collectively explain a significant portion of the variance in employee retention. These findings suggest that organizations should prioritize and invest in skill development, mentorship, cross-functional training, and networking opportunities to enhance employee satisfaction and retention. This study provides valuable insights for developing effective professional development strategies aimed at improving workforce stability and organizational performance.

Keywords: *Professional Development, Employee's Retention, Skills Development, Mentorship Programs, Cross-Functional, Networking Events.*

1. Introduction

Professional development is crucial in improving employee retention in different industries worldwide. Recent research shows that companies globally see professional growth as essential for keeping talented staff, promoting job happiness, and boosting organizational success (Smith & Lee, 2021). The connection between professional growth and staff retention is crucial in the face of growing worldwide talent competition and changing work dynamics (Johnson & Chen, 2023). Investing in the growth and development of employees has become a strategic necessity for organizations as they work to retain competitive edges (Adams & Brown, 2022).

Professional development programs are becoming more common in North America as organizations seek to combat high turnover rates and enhance employee satisfaction by embedding them into their strategies (Williams & Davis, 2022). One example is the adoption of ongoing educational programs by American businesses to improve employee abilities and keep talented workers in light of a swiftly evolving labor market (Harris & Martinez, 2023). Likewise, research in Europe emphasizes that workers in nations such as Germany and the UK place a high importance on chances for career progression and development, influencing greatly their choice to remain in their existing jobs (Roberts & Taylor, 2021).

Looking towards Asia, Japan and China have shown the significance of employee professional development for retaining staff in competitive sectors (Kim & Lee, 2022). In Japan, companies have always valued ongoing training and skill enhancement as a key aspect of their corporate ethos, leading to strong employee commitment (Tanaka & Nakagawa, 2023). In China, companies are investing significantly in professional development programs due to rapid economic growth and intense competition in the labor market in order to retain and satisfy employees (Zhang & Liu, 2021).

In Africa, the situation differs greatly throughout the continent. In South Africa, there is a growing acknowledgment of the importance of professional development programs in enhancing employee retention in the public and private sectors (Nkosi & Moyo, 2022). Yet, in numerous other African nations such as Tanzania, there exists a requirement for more organized and extensive professional growth initiatives to tackle employee turnover and improve job contentment (Juma & Suleiman, 2023).

In Tanzania, the Public Service Social Security Fund (PSSSF) encounters distinct issues concerning the retention of employees and their professional growth. The PSSSF is vital for upholding a steady workforce and guaranteeing quality service delivery by providing social security benefits to public sector employees (Mwangosi & Mbaria, 2024). Despite being important, there is a lack of empirical studies on the

impact of professional development on employee retention in the Dodoma Region's PSSSF. Prior research has predominantly concentrated on general areas of public sector staff administration and have not sufficiently tackled the particular requirements and obstacles encountered by the PSSSF (Kikula & Sanga, 2023).

This research aims to address the gap by investigating how professional development is linked to employee retention in the PSSSF in Dodoma Region, Tanzania. The study aims to offer insights on developing and implementing professional development initiatives in Tanzanian public sector organizations to improve employee retention. Comprehending this connection is essential for creating plans that enhance employee happiness and loyalty, ultimately bolstering the overall efficiency of the PSSSF in providing social security services.

2.0 Literature Review

Different sectors and organizations have implemented a range of retention strategies to secure employee loyalty. An important method for keeping employees is investing in the professional growth of employees. Researchers believe that professional development plays a key role in increasing employee retention in modern organizations. Muturn & Mose (2019) suggested that in America, promoting professional development and offering promotions to employees is necessary to improve rewards and job responsibilities for important tasks. This also shows the organization's commitment to motivating employees to achieve the company's goals. A study in Asia by Ferdiana & Ray (2023) examined the impact of career growth on employee loyalty in Indonesia. The results showed a significant simultaneous effect of career growth on employee engagement. These findings support the expectancy theory and social exchange theory, indicating that organizations can improve employee retention by offering opportunities for career growth to their employees.

Studies carried out in Africa have demonstrated the important impact that professional growth has on increasing employee retention. In an example, Ndiritu (2022) conducted research on how career advancement is linked to employee turnover in insurance firms in Nairobi City County, Kenya. The research results showed a significant and favorable connection between career advancement programs and the retention of employees, highlighting the impact of these strategies on keeping personnel. The findings indicate that it would be beneficial for management in these insurance companies to implement career development programs in order to improve employee retention rates strategically. By incorporating chances for career growth, companies can encourage a more dedicated and involved staff, ultimately leading to better employee retention results.

Given that professional development is a common practice in many Tanzanian organizations, worker retention is a crucial factor that is closely tied to the success of the organizations. Mndeme (2015) explored the significance of career advancement within the setting of TANESCO in Tanzania. Research results indicated that there was potential for career advancement within TANESCO, but not through its current organizational framework. The study also showed that career advancement played a key role in keeping employees at the company. This was because providing employees with such a development program made them feel cared for, included in the organization, and valued. In order to improve career development programs, the study outlines the need to increase the duration of time dedicated to career development, as well as for HR to collaborate with user departments in conducting career development activities.

3. Methods

3.1 Research Design and Sampling

This research utilized a survey methodology to collect data from staff members based at the PSSSF main office in the Dodoma area. The survey layout is suitable for gathering the views and encounters of a sizable number of participants, enabling the gathering of numerical information on the connection between career growth and staff turnover. The method of cluster sampling was used, with a specific focus on the PSSSF headquarters in Dodoma. Cluster sampling was chosen based on the way PSSSF is organized, with employees grouped into different clusters or departments. This approach guaranteed a fair sample from every department, allowing for a thorough look at the impact of professional development programs on employee turnover throughout the company.

3.2. Participants

The key informants for this study were selected from the employees of PSSSF in the Dodoma Region. More precisely, the research focused on 123 employees who are employed in Human Resource Management (HRM) departments. These people were chosen because they are directly involved in programs that develop and keep employees, giving them the ability to offer insights on how professional growth links to retaining employees. A survey was conducted with 93 individuals from the population to ensure a representative and adequate sample size for analysis.

3.3. Data Collection Instruments

The structured questionnaire served as the main tool for gathering data in this research. The survey aimed to collect numerical information on different aspects of professional growth and staff retention. The survey consisted of a combination of closed-ended and Likert scale inquiries designed to evaluate important aspects like employee skill growth, equal opportunities for career progression, mentorship initiatives, comprehensive training across different functions, and involvement in industry events or networking sessions. The decision to use a survey was made because of its effectiveness in gathering consistent information from numerous participants, enabling simple evaluation and comparison of various factors linked to career growth and employee retention.

3.4. Data Analysis

Multiple linear regression was utilized for data analysis in this study. This statistical technique was utilized to investigate how various independent variables regarding professional growth (such as enhancing worker skills, promoting career equality, implementing mentorship programs, offering cross-functional training, and engaging in conferences or networking events) are correlated with employee retention, the dependent variable. Multiple linear regression was used to evaluate the impact of individual variables on employee retention, while accounting for the influence of other variables. This method gave a thorough insight into which components of professional growth had the greatest influence on staff retention at PSSSF in the Dodoma Region.

4. 0 Results and Discussion

4.1. Results

Multiple linear regression was employed to evaluate how professional development aspects like skill enhancement, equal opportunities for career growth, mentorship initiatives, cross-training, and attendance at conferences or networking functions influence employee retention. This approach enabled the examination of the impact of each individual variable on employee retention, taking into account the effects of the other variables. The results of the regression analysis are shown below.

4.2 Model Summary Results

Table 4.1 contains the summarized outcomes of the multiple linear regression analysis model. The model shows a good overall fit, with an R value of 0.820, demonstrating a significant relationship between the predictors and employee retention. The R Square of 0.672 indicates that about 67.2% of the variation in employee retention is accounted for by the independent variables in the model. This significant percentage indicates that the elements being examined—such as worker's

skill enhancement, equal opportunities for career growth, mentorship initiatives, cross-training, and involvement in events like conferences or networking—greatly affect the retention of employees.

The Adjusted R Square value of 0.662 takes into account the number of predictors in the model, reinforcing the model's strength by confirming that the predictors explain a substantial amount of the variation in employee retention while accounting for degrees of freedom. The estimate's standard error is 0.18141, indicating the average deviation of observed values from the regression line, implying a strong model fit to the data.

The statistical changes show a notable enhancement in model fitting with an R Square Change of 0.672 and an F Change of 69.134, along with 5 degrees of freedom (df1) and 169 degrees of freedom (df2), and a significance level (Sig. There was no change in the value. The significance level is much lower than the typical alpha level of 0.05, indicating that the model's predictors together offer a statistically significant reason for the variance in employee retention. This discovery highlights the importance and influence of professional development elements on staff retention in PSSSF in the Dodoma Region.

Table 4.1 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.820 ^a	.672	.662	.18141	.672	69.134	5	169	.000
a. Predictors: (Constant), worker's skills development, career advancement equality, mentorship programs, cross-functional training, participation in conferences or networking events									

4.3 Coefficient of Regression

The regression coefficient results provide important information on how different factors in professional development influence employee retention in PSSSF in Dodoma Region. Improving workers' skills has a notable beneficial effect on employee retention. This factor is highly correlated with increased retention rates, with an unstandardized coefficient of 0.331 and a standardized beta of 0.772. The fact that the p-value is less than 0.001 shows that investing in programs to develop skills greatly impacts the retention of employees. This indicates that providing

employees with chances to improve their skills increases the likelihood of them staying with the company, emphasizing the important role of ongoing skill development in strategies to retain employees.

However, career advancement equality has a positive correlation with employee retention, however, it is not statistically significant, with unstandardized coefficient of 0.057 and standardized beta of 0.135 ($p = 0.249$). This means that although equal chances for career growth are advantageous, they may not have a strong impact on employee retention in this scenario. The absence of statistical significance indicates that other variables may have a stronger influence on employee retention than career advancement equality.

Mentorship programs have a positive impact on employee retention, with an unstandardized coefficient of 0.056 and a standardized beta of 0.209. The importance of retaining employees is highlighted by the significance level ($p < 0.001$) of effective mentorship. This discovery shows that organized mentoring programs are beneficial for aiding in employee growth and contentment, ultimately leading to increased employee engagement and dedication to the company.

Cross-disciplinary training is also an important element, showing an unstandardized coefficient of 0.072 and a standardized beta of 0.246, proving to be statistically significant ($p < 0.001$). This implies that offering training in various functions or positions improves employee engagement and retention. Workers who participate in cross-functional training to acquire a wider range of skills and experience are more likely to feel appreciated and stay loyal to the company.

Attending conferences or networking events positively impacts employee retention, with an unstandardized coefficient of 0.040, a standardized beta of 0.114, and significant results ($p = 0.011$). This suggests that higher retention rates are linked to opportunities for external networking and professional development. Participating in these activities enables employees to establish important relationships and acquire fresh perspectives, leading to higher levels of job contentment and commitment.

In conclusion, the regression analysis shows the significant influence of professional development factors on employee retention. Improvements in skills development, mentorship initiatives, cross-functional training, and networking opportunities play a major role in employee retention at PSSSF. The results indicate that by concentrating on these areas, retention strategies and overall organizational effectiveness can be enhanced.

Table 4.2 Coefficient of Regression

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	.068	.120		.566	.572	.170	.306
Worker's skills development	.331	.050	.772	6.557	.000	.231	.430
Career advancement equality	.057	.050	.135	1.157	.249	.155	.040
Mentorship programs	.056	.014	.209	3.922	.000	.028	.084
Cross-functional training	.072	.013	.246	5.445	.000	.046	.098
Participation in conferences or networking events	.040	.015	.114	2.583	.011	.009	.070
a. Dependent Variable: Employee Retention							

4.4 ANOVA Results

The findings from the ANOVA indicate that the regression model is statistically important, showing an F-statistic of 4.187 and a p-value of 0.000. This shows that the model, which considers elements like worker's skill enhancement, equal opportunities for career growth, mentorship initiatives, interdepartmental training, and involvement in conferences or networking activities, greatly accounts for the differences in employee retention. The Regression Sum of Squares is 14.995, indicating the portion of variance explained by the model, whereas the Residual Sum of Squares is 62.317, signifying the unexplained variance. The Regression and Residuals have Mean Square values of 2.999 and 0.716, respectively, which adds

more evidence to the model's efficiency. In general, the findings support the idea that the chosen professional development factors play a part in comprehending staff retention at PSSSF in Dodoma Region.

Table 4.3 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.995	5	2.999	4.187	.000 ^b
	Residual	62.317	87	.716		
	Total	77.312	92			
a. Dependent Variable: Employee Retention						
b. Predictors: (Constant), worker's skills development, career advancement equality, mentorship programs, cross-functional training, participation in conferences or networking events						

4.5. Discussion

The results of this research on how professional development impacts employee retention in PSSSF in the Dodoma Region are consistent with the viewpoints found in different sources.

Muturn & Mose (2019) stress the importance of on-the-job professional growth and resulting advancements in keeping employees motivated and meeting work responsibilities, showcasing a company's dedication to its staff. The study's findings back this perspective, showing that employee retention is greatly influenced by the improvement of worker's skills ($B = 0.331$, $p < 0.001$). The research results indicate that investing in skill development meets employees' professional needs and boosts their loyalty to the organization, supporting Muturn & Mose's claim that these investments are vital for employee retention and achieving organizational objectives.

In Asia, Ferdiana & Ray (2023) discovered a significant influence of career advancement on employee loyalty, aligning with expectancy theory and social exchange theory. The research showed that opportunities for career growth impact employees' choice to remain at a company. This is in line with the results of the research, which showed that mentorship programs ($B = 0.056$, $p < 0.001$) and cross-functional training ($B = 0.072$, $p < 0.001$) were important factors in predicting retention. These findings support Ferdiana & Ray's claim that offering career growth

chances can boost employee retention by meeting employees' expectations and reinforcing their relationships with the organization.

Studies conducted in Africa, like Ndiritu's (2022) research on insurance firms in Nairobi, highlight the significant link between career advancement programs and staff retention. Ndiritu's research indicates that it is crucial to have effective career development programs in place to retain employees. The findings of this research align with this view, especially highlighting the importance of cross-functional training ($B = 0.072$, $p < 0.001$) and involvement in conferences or networking events ($B = 0.040$, $p = 0.011$). These factors show that career development programs, like those mentioned by Ndiritu, are essential for improving employee retention through creating a more involved and dedicated staff.

Mndeme (2015) studied career development at TANESCO in Tanzania and found that while there were opportunities for career advancement, they were limited by structural constraints. The research discovered that career growth initiatives played a major role in retaining employees by giving them feelings of appreciation and inclusion. The results of this research align with Mndeme's insights, especially highlighting the significance of enhancing employees' skills ($B = 0.331$, $p < 0.001$) and implementing mentorship initiatives ($B = 0.056$, $p < 0.001$) to create a nurturing workplace. The findings indicate that like TANESCO, PSSSF's focus on investing in employees' career development is crucial for employee retention and improving their level of involvement.

In general, the findings of the study are consistent with previous research, indicating that training and growth opportunities play a crucial role in keeping employees in different environments. The significance of strong professional development programs is underscored by this consistency in enhancing employee retention and organizational effectiveness.

5.0 Conclusion and Implications

This research has shown that professional growth has a substantial impact on staff retention in PSSSF in Dodoma Region. The study has shown that retention rates are positively influenced by worker's skill enhancement, mentoring programs, cross-functional training, and involvement in conferences or networking events. Out of all these factors, the development of workers' skills stood out as the most important predictor, underscoring the crucial role of ongoing learning and improving skills in ensuring that employees remain motivated and dedicated. The strong relationship between skill enhancement and employee retention highlights the importance of organizations prioritizing and investing in thorough training initiatives to promote employee development and happiness.

Participation in mentorship programs and cross-functional training was found to be essential for keeping employees on board. Organized mentorship boosts employee morale and provides necessary support, while diverse training enhances their skills and exposure, leading to higher levels of job satisfaction and commitment. These results are consistent with the overall body of research, which highlights the significance of these training opportunities in promoting a positive and stimulating workplace atmosphere. Therefore, it is important for organizations to concentrate on establishing strong mentorship systems and offering chances for employees to acquire a variety of experiences within the company.

Attending conferences or networking events, while not as significant as other factors, still contributes positively to retention. This indicates that although networking opportunities are not the main factor in employee retention, they still contribute to improving professional growth and organizational connection. Offering these opportunities can enhance a comprehensive professional growth plan, aiding in employees' career advancement and maintaining their interest in their jobs.

In general, the research emphasizes the importance of adopting a strategic method for professional growth. Focusing on improving skills, advancing mentorship programs, encouraging cross-functional training, and providing networking opportunities can help organizations like PSSSF enhance employee retention and cultivate a committed and motivated workforce. This research offers practical information for creating successful training programs to keep important staff members and meeting company objectives.

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Effect of Procurement Risk Identification Practice on Performance of Construction Projects at Tanzania Building Agency in Dodoma

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Abstract

This study assessed the effect of procurement risk identification practice on performance of construction projects at Tanzania building agency in Dodoma. The study used a cross sectional research design and a sample of 80 respondents was selected using a stratified sampling followed by simple randomly sampling technique. Data collection methods include questionnaire and interview. Quantitative data were analyzed using both descriptive statistics and multiple linear regressions model. The study found that the procurement risk identification practices, in terms of preparation and list procurement risk, periodic procurement audits and list of procurement risk consequences were positive and significant related to performance of construction projects at Tanzania building agency in Dodoma. The study concludes that procurement risk identification practices such as performance of construction projects at Tanzania building agency in Dodoma were important in performance of construction projects at the Tanzania Building Agency in Dodoma region in terms of cost saving, timely delivery of goods and delivery quality goods.. Therefore, the study recommends that, Tanzania Building Agency (TBA) should implement procurement risk management procedures and control proactively during procurement process also ensure that there is joint participation with all stakeholder especially user department in the implementation of these procedures.

Keywords: *Procurement Risk, Identification Practice, Performance, Tanzania Building Agency, Dodoma*

1.0 Introduction

Globally, risk management practices have been acknowledged for their direct correlation with outcome measures, including enhanced decision-making, program stability, and problem-solving, as highlighted by Oehemen *et al.* (2019). Moreover, these practices are indirectly associated with other outcome measures, such as the success of projects and products. According to Chaponda (2020) on his study revealed a significant in risk identification stage and proposed pre-identification stage which helps procurement stakeholders and practitioners to identify procurement risk and deal with it proactively. Furthermore, it was suggested that most of procurement risk assessment have not done effectively in mitigating the risk consequences and its solution in risk management should be prioritized. Kuempell *et al.* (2012) recognized that escaping from effective risk management best practices will have a significant impact on procurement and organization performance.

Findings from study by Huma *et al.* (2020) found that, in Africa, there was a delay in delivery of goods, poor contract management and poor procurement planning due to unrealistic risk management, procurement timing and poor information management in procurement process of goods. Also, the study observed existence of poor need assessment, unethical practices in the procurement process, improper records management and poor supplier's management and these were the risks associated with procurement of goods

Similarly, in Tanzania Uswege & Yamlinga (2021) noted that, awareness of risk management process; team work and communication as well as management style were the key critical success factors while cooperative culture; customer requirement and positive human dynamics were the least critical success factor for implementing risk assessment and risk management in construction projects in Tanzania.

In addition, Kikwasi *et al.* (2013) recognized that, in Tanzania there is a little awareness of procurement risk management process, lack of experience and lack of information as the major barriers and cost implementation and time constrains as the minor barriers of implementing risk management in construction project which affects project performance negatively. The implementation of procurement risk management is still a debate among researchers due to lack of effective procurement risk management such as lack of stakeholders' involvement during execution of procurement functions which implies that procurement stakeholders knowingly or unknowingly ignores the benefits of effective risk management best practices on procurement performance.

Moreover, the significance of effective risk management practices cannot be overstated, particularly within the context of the Tanzania Building Agency, a crucial Executive Agency under the Ministry of Works. However, the agency grapples with substantial challenges (Josephina 2019). Notably, ineffective procurement practices and delays in completing construction projects

hinder the agency's ability to realize its objectives and achieve optimal Value for Money. The impact of these challenges is evident in both financial and temporal terms. For instance, procurement inefficiencies may lead to increased project costs, while delays in project completion can result in additional expenditures and missed opportunities for revenue generation. Addressing these issues is paramount for the Tanzania Building Agency to enhance its overall effectiveness and ensure the successful implementation of construction projects. Figures from relevant studies underscore the urgency of these challenges and emphasize the need for strategic interventions in risk management practices within the agency.

Chileshe & Kikwasi (2014) argued that there are number of challenges facing effective implementation of procurement risks management practices in the Tanzania Public Sectors including Tanzania Building Agencies such as lack of procurement stakeholder's involvement in procurement risk implementation, poor cooperation of participation, non-availability of financial resources for implementation of procurement risk management which results into poor procurement performance in terms of quality, time, cost and delivery.

To overcome the challenges, the Tanzanian government has implemented a comprehensive framework of Laws and Regulations, such as the Public Procurement Act of 2011 and the Public Private Partnership (PPP) Act of 2010, authored respectively by the Tanzanian government in 2011 and 2010. These regulations aim to enhance the efficiency and quality of work within contractual arrangements. These measures, as outlined in the legal texts [Public Procurement Act, 2011] and [PPP Act, 2010], are specifically designed to mitigate risks associated with the procurement process, reflecting a commitment to fostering a more secure and transparent environment for both public and private entities involved. (URT, 2016)

Despite of the efforts made by government and various scholars to address the challenges on effective implementation of procurement risks management, there are still various risks existing in construction project such as corruptions, quality risk, cost risks and delays in public procurement construction project which need attention from scholarly findings (CAG, 2019).

Similarly,, construction projects managed by the Tanzania Building Agency (TBA) have been marred by significant challenges, leading to poor performance trends. Notably, cost overruns have been observed at an alarming rate, averaging 30% over the past five years (Mwakisunga, 2020). Project delays was reported as another critical issue which have consistently exceeded initial timelines by 25%, causing disruptions in project delivery schedules (TBA, 2022). These challenges not only hinder project success but also contribute to a strained financial environment and diminished public trust in the agency.

Based on the reviewed literature, it has been observed that there is a scarcity of studies concerning procurement risk management practices in construction projects, particularly within the public sector in Tanzania. Most studies have focused on the relationship between procurement risk

management practices and the performance of procurement and supply chain operations (Mbuyuni & Lusinde, 2023; Ochieng et al., 2022), while others have explored the perceived barriers to effectively implementing risk management policies (Mushi & Kazimoto, 2022). However, these studies did not address the effect of procurement risk management practices on the performance of construction projects in Tanzania's public sector procurement. Therefore, this study addresses this gap by assessing the influence of procurement risk management on the performance of construction projects at the Tanzania Building Agency in Dodoma Region. Specifically, the study focused on the effect of procurement risk identification practices on the performance of construction projects at the Tanzania Building Agency in Dodoma.

2.0 Literature Review

2.1 Theoretical Literature Review

2.1.1 Conceptual framework

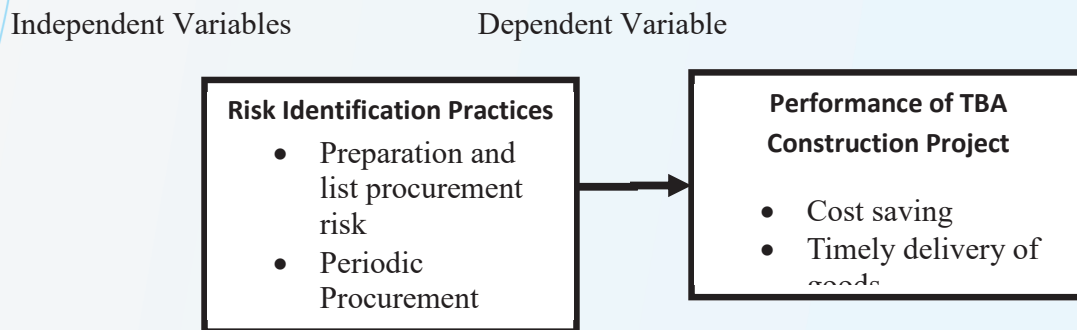
Contingency theory is the organizational management theory developed by Fred Fiedler in 1960s, the theory, revealed that, regardless of how carefully a plan is written, the organization's success is contingent on contingency conditions or situations arising from external and internal circumstances. Management contingency theory educates managers on the critical nature of comprehending uncertainties in order to build suitable responses. Contingency theory to enable managers to adapt their policies, leadership style, choices, and processes to the existing environment (Ogola, 2015).

According to this theory, organizational management has no choice but to take action based on the prevailing circumstances, as this is the most effective way to decide, lead, and organize an organization in an uncertain environment; thus, the organization should manage procurement risks by adopting this theory (McAdam, *et al.*, 2019).

Because procurement risk management such risk identification practices is dynamic as a result of technological advancements, changes in procurement laws and guidelines, and changes in market conditions, all of which are uncertain, this theory is relevant to this study and is associated with specific objectives, namely procurement risk identification procedures, risk evaluation procedures, and risk control procedures, and thus the theory enables management to appreciate the critical nature of identifying procurement risk in construction project (Huma et al., 2020).

The conceptual framework presented in Figure 1 shows the diagrammatical representation of the interrelationship among variables of the study. The framework shows that achievement of procurement performance Tanzania Building Agency construction project depends on effectiveness of risk management practices. In this study, conceptual framework indicates the relationship between independent variables such as risk identification practices, while dependent variable is performance of construction projects.

Figure 1: Conceptual Framework of the study variables



2.1.2 Empirical Literature Review

In the global context, procurement risk identification and performance have been extensively studied. For instance, a study by Knight et al. (2017) titled "Global Procurement Risk Management" utilized a mixed-methods approach combining surveys and case studies across multiple industries worldwide. The findings revealed that robust risk identification practices significantly enhance procurement performance by reducing the incidence of supply chain disruptions and cost overruns (Knight et al., 2017). The study concluded that companies with well-defined risk management frameworks are better positioned to achieve competitive advantage in the global market (Knight et al., 2017). Additionally, it emphasized the importance of integrating risk management into the overall strategic planning of procurement functions (Knight et al., 2017).

In Europe, a notable study by Wagner and Bode (2018) titled "Managing Risk and Performance in European Supply Chains" employed a survey methodology targeting procurement professionals across various European countries. The research identified that proactive risk identification practices correlate with improved procurement performance, especially in terms of supplier reliability and cost efficiency (Wagner & Bode, 2018). The study highlighted that European firms prioritize risk management due to the complex regulatory environment and the need to ensure supply chain resilience (Wagner & Bode, 2018). Moreover, the findings suggested that firms with advanced risk identification mechanisms report higher levels of procurement performance, evidenced by fewer disruptions and better supplier relationships (Wagner & Bode, 2018).

In the American context, Johnson and Flynn (2019) conducted a study titled "Procurement Risk Identification and Performance in the US Manufacturing Sector" using a longitudinal survey method. Their research found that American manufacturing firms with systematic risk identification practices experience significant improvements in procurement performance, including reduced lead times and lower costs (Johnson & Flynn, 2019). The study concluded that risk identification is a key driver of procurement efficiency and effectiveness in the highly competitive American market (Johnson & Flynn, 2019). Furthermore, it was noted that firms that

invest in advanced risk assessment tools and technologies tend to outperform their peers in terms of procurement outcomes (Johnson & Flynn, 2019).

In Asia, Chen and Wu (2020) examined procurement risk identification practices in their study titled "Risk Management and Procurement Performance in Asian Supply Chains" using a case study approach across several industries. The research concluded that Asian firms that adopt comprehensive risk identification frameworks achieve superior procurement performance, particularly in terms of supply chain agility and cost control (Chen & Wu, 2020). The study found that cultural factors and varying levels of economic development influence the adoption and effectiveness of risk management practices (Chen & Wu, 2020). Additionally, the research highlighted that firms in technologically advanced Asian countries tend to have more sophisticated risk management practices, leading to better procurement outcomes (Chen & Wu, 2020).

in East Africa, Kiage (2018) examined the impact of procurement risk identification on procurement performance in his study titled "Risk Management and Procurement Performance in East African Community" using a cross-sectional survey method. The study found that East African firms that implement structured risk identification processes report better procurement performance, evidenced by improved supplier performance and cost savings (Kiage, 2018). The research concluded that risk identification is a critical component of procurement strategy in East Africa, where supply chain disruptions are common (Kiage, 2018). Furthermore, the study highlighted the role of regional integration efforts in enhancing procurement practices and reducing risks (Kiage, 2018).

In Tanzania, a study by Mrope and Iravo (2017) titled "Procurement Risk Management and Performance of Public Institutions in Tanzania" utilized a case study methodology focusing on public sector institutions. The findings indicated that Tanzanian public institutions with effective risk identification practices experience improved procurement performance, including higher efficiency and transparency (Mrope & Iravo, 2017). The study concluded that risk management is essential for public procurement in Tanzania, given the prevalent issues of corruption and inefficiency (Mrope & Iravo, 2017). Additionally, the research suggested that institutional capacity building and adherence to regulatory frameworks are critical for enhancing procurement outcomes (Mrope & Iravo, 2017).

3.0 Research Methodology

3.1 Research Design

This study adopted a cross-sectional research design since cross-sectional design allowed a collection of data from the population at a specific point in time.

3.2 Study Area

This study was conducted at the Tanzania Building Agency (TBA) in the Dodoma region, chosen for its central role in managing key government construction projects, particularly as Dodoma continues to grow as Tanzania's capital city. The region has experienced a significant increase in public and private construction activities due to the government's relocation efforts, making it a hub for infrastructure development. However, these construction projects, managed by TBA, have faced persistent challenges that negatively affect project outcomes. Notably, cost overruns have averaged 30% over the past five years, contributing to budget inefficiencies (Mwakisunga, 2020). Additionally, project delays have consistently exceeded initial timelines by 25%, severely impacting the timely delivery of public infrastructure (TBA, 2022). Given the critical role of TBA in the development of Dodoma and the ongoing issues in project execution, the region provides a rich source of data to examine the effect of procurement risk management on the performance of construction projects. These challenges underscore the need for targeted research to improve project performance and ensure sustainable development in the area.

3.3 Targeted Population

The targeted population of the study were 100 staffs of the TBA Dodoma, from the following units, Procurement department, Accounts department, and Administration, construction, real estate, and consultancy departments. Kothari and Garg (2014), defined population as the total number of elements through which the sample size is drawn and target population normally consists of elements or individuals having similar characterizes where sample is drawn to represent other elements.

3.4 Sample Size and Sampling Procedure

3.4.1 Sample size

Sample size of the study was selected from population of 100 staff of the Tanzania Building Agency Dodoma and was calculated using Yamane formula of 1967 since the targeted population is known. The formula for sample size calculation presented as follows

$$n = \frac{N}{1 + Ne^2} \dots\dots\dots (1)$$

Where;

n = Sample size

N= Targeted study population (100)

1 = Constant and

e = Acceptable sampling error (5%)

$$\text{Sample size} = n = \frac{100}{1 + 100(0.5)^2} = 80$$

$$\text{Unit sample size} = \frac{\text{Unit population} \times \text{Sample size}}{\text{Target Population}}$$

Table 1: Distribution of Sample size

	S/N	Department	Targeted Population	Sample Size
3.4.2 Sampling procedures The study employed both probability and non- probability sampling techniques in selection of the respondents.	1	Procurement	15	12
	2	Accounting	10	8
	3	Administration	10	8
	4	Construction	30	24
	5	Real Estate	15	12
	6	Consultancy	20	16
		Departments		
	Total		100	80

In probability sampling, a stratified sampling technique was used to categorize the respondents based on their professional departments, then followed by simple random sampling technique which was used to select 80 staffs (See Table 1).

In non-probability sampling, purposive sampling technique which involves deliberate selection of a particular unit of the universe for constituting a sample which represents a universe (Kothari, 2009).. In this study, purposive sampling techniques were used to select key informants (Five head of departments) and the study area. These key informants were selected on the basis of their expertise and position in the implementation of procurement practices in their departments.

3.5 Data Collection Methods

In order to obtain quantitative data, questionnaire tool was employed in the collection the relevant information. Close-ended questions (statements) with Likert scale ranked was used to obtain information that meet research objectives. The questionnaire was employed because give the respondent's freedom to answer questions related to research specific objective also helps the researcher, with minimal efforts, to obtain required information in a timely manner. Under this study questionnaire was prepared and administered to the targeted respondents that were employees from the Tanzania Building Agencies who involves in procurement process related to construction projects.

3.6 Data Analysis Method

To assess effect of risk identification practice on performance of construction projects. Data for this objective were analyzed by using descriptive statistics and multiple linear regression analysis using the following regression equations;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon \dots\dots\dots (1)$$

Y= Dependent variable (Performance of construction projects)

Where;

β_0 = intercept

β_1, β_2 , and β_3 = Regression coefficients for risk identification practice

X_1 = Preparation and list procurement risk

X_2 = Periodic Procurement audits

X_3 = List of procurement risk consequences

ε = Error term

4.0 Findings and Discussion

This section attempts to discuss the findings that were obtained from the field extensively. The section includes discussion on the respondent's characteristics, major findings interpretation of findings and compares the results with the related studies.

4.1 Characteristics of Respondents

The characteristics of the respondents were sought to help researchers to have background information of the respondent. These characteristics include sex, age, education level and years of experience.

Findings in Table 2 show that, the males (61.3%) were more represented than females (38.8%), implying a preference for recruiting men by the agency. Regarding age, the majority (46.3%) of respondents were aged 26-35, followed by 33.8% in the 36-45 age group, indicating that most participants were in their prime working years. In terms of education, majority (63.8%) held a bachelor's degree, with a smaller percentage having master's degrees (21.3%), diplomas (10%), and certificates (5%), signifying a well-educated workforce. Lastly, 42.5% of respondents had 3-6 years of work experience, while 32.5% had 7-10 years, demonstrating a workforce with significant experience relevant to procurement risk management practices.

Table 2: Characteristics of Respondents (n=80)

Sex	Frequency	Percent
Male	49	61.3
Female	31	38.8
Age category (Years)		
18-25	16	20.0
26-35	37	46.3
36-45	27	33.8
Level of Education		
Certificate	4	5.0
Diploma	8	10.0
Bachelor Degree	51	63.8
Master Degree	17	21.3
Years of Experience (Years)		
Less than 3	14	17.5
3-6	34	42.5
	1623	

7-10	26	32.5
Above 10	6	7.5

Source: Research Findings (2024)

4.2 Descriptive statistics Results for Risk Identification Practices

Descriptive statistics were used to assess the level of respondent's agreement. The mean and standard deviation (S.D.) were calculated to establish the findings from the data that were generated using a Likert scale of 1-5 where 5= strongly Agree, 4=Agree, 3= Neutral, 2= Disagree and 1= Strongly Disagree. The findings were presented in Table 3 using mean score and the standard deviation.

Table 3 : Descriptive results on risk identification Practices(n=80)

Risk Identification Practices	Mean	SD
Preparation and list procurement risk	3.887	0.826
Periodic Procurement audits	3.912	0.874
List of procurement risk consequences	4.125	0.623

Source: Research Findings (2024)

The Results presented in Table 3 revealed that majority of the respondents agreed that risk identification practices is a factor of procurement risk management affecting procurement performance (mean=3.887, Std=0.826). The respondents also agreed that periodic procurement audits is a component of procurement risk management that influence procurement performance (mean=3.912, Std=0.874). In addition, respondents agreed that list of procurement risk consequences are likely to enhance procurement performance (mean=4.125, Std=0.623).

The study findings concur with those of Rostami (2022) who suggested that, risk identification is the key success factors for effective procurement risk management and failure to identify risk earlier affects the whole process of procurement risk management which will negatively affects the achievement of the organizational objectives. The most common risk identification adopted by the organization includes documentary review, checklist analysis, expert judgment, information gathering while other tools for risk identification which is not obvious used are brainstorming, Delphi techniques due to inadequate knowledge and organizational resources.

4.3. Effect of Risk Identification Practices on Performance of construction project

The study employed multiple linear regression analysis to determine significance relationship between independent variables (Preparation and list procurement risk, periodic procurement audits and list of procurement risk consequences) and dependent variables (Performance of construction projects at the Tanzania Building Agency)

Results from Table 4 shows a positive influence of procurement risk identification practice on performance of construction projects at Tanzania building agency. The value of adjusted R^2 of procurement risk identification practice was 0.56 indicates that risk identification practice (Preparation and list procurement risk, periodic procurement audits and list of procurement risk consequences) explain 56% variability in performance of construction projects at Tanzania building agency. Likewise, the F-value shows that the independent variables (Preparation and list procurement risk, periodic procurement audits and list of procurement risk consequences) statistically significantly predict the dependent variable (Performance of construction projects at the Tanzania Building Agency) since $p\text{-value} < 0.05$.

Table 4: Effect of Risk Identification Practices on Performance of construction project

Variable	Unstandardized Coefficients		Standardized t-value Coefficients		Sig.
	B	Std. Error	Beta		
(Constant)	0.069	1.680	-	0.041	0.968
Preparation and list procurement risk	0.331	0.284	0.261	4.164	0.029
Periodic procurement audits	0.148	0.067	0.129	3.208	0.036
List of procurement risk consequences	0.159	0.065	0.164	5.465	0.019

Dependent Variable: Performance of construction projects

Adjusted R squared = 0.56

F-value =17.9

Findings in Table 4 indicate that, preparation and list procurement risk were found to be positive and significant related to performance of construction projects at the Tanzania Building Agency ($\beta=0.331$ and $p\text{-value} < 0.05$). The findings imply that, a unit increase in preparation and list

procurement risk within risk identification practices could results to increase performance of construction projects at the Tanzania Building Agency by 33.1 percent.

Moreover, findings in Table 4 show that, periodic procurement audits were found to have positive and significant related to performance of construction projects at the Tanzania Building Agency ($\beta=0.148$ and $p\text{-value} < 0.05$). The findings imply that, a unit increase of periodic procurement audits within risk identification practices could results to increase performance of construction projects at the Tanzania Building Agency by 14.8 percent.

Furthermore, findings in Table 4 revealed that, list of procurement risk consequences were found positive and significant related to performance of construction projects at the Tanzania Building Agency ($\beta=0.159$ and $p\text{-value} < 0.05$). The findings imply that, a unit increase of list of procurement risk consequences within risk identification practices could results to increase performance of construction projects at the Tanzania Building Agency by 15.9 percent.

These findings is in line with those of Sriyalatha (2016) who argue that, risk identification practices in procurement practices lead to positively significant impact on procurement performance. Furthermore, findings are similar with those of Renault *et al.* (2016) and PPRA (2020) found a significant effect of procurement risk identification and procurement performance by explain that procurement risk identification is critical and first step in procurement risk management process that need to be well considered

5.0 Conclusion and Recommendations

The study concludes that procurement risk identification practices such as preparation and list procurement risk, periodic procurement audits and list of procurement risk consequences were important in procurement performance in terms of cost saving, timely delivery of goods and delivery quality goods. at the Tanzania Building Agency in Dodoma region

Therefore, the study recommends Tanzania Building Agency to consider the components of procurement risk identification such as preparation and list procurement risk, periodic procurement audits and list of procurement risk consequences during public procurement process. This will enhance public procurement performance

Since the study was limited in one component that influence of procurement risk management practices on the public procurement performance of Tanzania Building Agency. Further studies may be carried out to find out others factors that influence of procurement risk management practices on the public procurement performance in other construction industry sectors in Tanzania.

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The Effect of Procurement Contract Management on Water Project Lead Time Management at RUWASA-Dodoma Region Tanzania

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Abstract

The problem addressed in this study is the persistent delays in managing project timelines for water projects at RUWASA. Have resulted in extended lead times, negatively impacting project outcomes and service delivery. Water projects face challenges in managing project timelines, resulting in extended lead times and negative effects on project outcomes.

Therefore, the study aimed to investigate the effect of procurement contract management, on water project lead time management at RUWASA-Dodoma region. The research applied the principal-agent theory to understand the dynamics between stakeholders in procurement and used a cross-sectional research design targeting a population of 150 individuals, with 109 respondents selected through simple random. Data collection included questionnaires and the analysis employed descriptive statistics and multiple regression analysis to provide comprehensive insights. The findings revealed significant relationships between procurement efficiency and project lead time management. Descriptive statistics highlighted trends such as delays in contract execution while regression analysis demonstrated that effective procurement strategies positively impacted project timelines. The study concluded that procurement contract management has a significant effect on water project lead time management at RUWASA-Dodoma Region, Tanzania. The study recommended that RUWASA should improve contract management by focusing on clearer and more specific terms in procurement contracts, as this would help address the challenges and inefficiencies hindering project timelines.

Keywords: *Procurement, Contract, Procurement Contract, Procurement Contract Management, Lead Time and Lead Time Management.*

1.0 Introduction

Public projects are initiatives managed by the government or state aimed at addressing community needs globally, effective procurement contract management is crucial for ensuring the timely and successful implementation of water projects. It involves a series of processes, including drafting, negotiation, execution, and monitoring of contracts to achieve project objectives within the set timeframes and budgets (Anderson, & White, 2023). According to Ankrah (2020), poor contract

management is one of the primary reasons for delays in infrastructure projects, including those in the water sector, leading to cost overruns and compromised quality. In developed countries like the United States and Germany, advanced contract management systems, supported by robust legal frameworks and digital tools, have significantly reduced project delays and enhanced efficiency (Aputo, 2023). Conversely, in developing countries, challenges such as inadequate contract documentation, lack of enforcement mechanisms, and limited expertise often hinder effective contract management, resulting in prolonged project lead times.

In Africa, water projects are critical for addressing the continent's water scarcity challenges and improving access to clean water. Effective procurement contract management in this sector is pivotal to overcoming obstacles such as funding limitations, inadequate infrastructure, and administrative inefficiencies. A study by Julius and Gershon (2019) highlighted that 65% of water projects in sub-Saharan Africa experienced delays primarily due to poor contract management practices, including unclear contract terms, inadequate risk allocation, and weak monitoring mechanisms. Countries like South Africa and Kenya have made strides in improving procurement contract management by adopting comprehensive legal frameworks and capacity-building initiatives. However, many other countries continue to struggle with challenges related to corruption, inadequate contractor performance, and lack of transparency, which significantly affect project timelines and outcomes.

Focusing on East Africa, countries such as Kenya, Uganda, and Tanzania have undertaken numerous water projects to improve water accessibility and sanitation including The Western Kenya project in Kenya, WATSAN water project in Uganda and Water projects in Tanzania in Bahi town, Kondoa town, Chamwino town and Dodoma city (Mwega, 2023). Despite these efforts, contract management remains a significant bottleneck in achieving project completion within the planned timelines. Studies by Aputo (2023) show that delayed water projects in East Africa are often linked to issues such as contract disputes, poor contractor performance, and delays in payments. Additionally, the lack of standardized contract management practices and inadequate oversight further exacerbate these issues, leading to increased project lead times and cost escalations (Kijaji & Rwekaza, 2023). This calls for the adoption of more robust procurement contract management systems, including improved contractor evaluation processes, clearer contractual obligations, and enhanced capacity for contract monitoring and enforcement.

In Tanzania, the management of procurement contracts in water projects has been a topic of growing concern due to its impact on the timely delivery of these essential services (Msanga, 2020). The Rural Water Supply and Sanitation Agency (RUWASA) is at the forefront of implementing water projects aimed at improving rural water supply. However, despite efforts to streamline procurement processes, contract management issues have led to significant project delays (Kijaji & Rwekaza, 2023). A study by the Public Procurement Regulatory Authority (PPRA) revealed that 40% of water projects under RUWASA faced delays due to contract

management inefficiencies, highlighting the need for improved contract administration, risk management, and performance evaluation mechanisms (PPRA, 2023).

Several factors contribute to the challenges faced in procurement contract management for water projects in Tanzania. Key among these are the lack of skilled personnel, inadequate use of contract management tools, and the absence of a robust legal framework to enforce compliance (Mgawe & Masanja, 2023). Mwega (2023) noted that while Tanzania has made progress in strengthening its procurement processes through reforms and capacity-building programs, the translation of these efforts into improved contract management practices remains limited. Therefore, this study intends to investigate the effect of procurement contract management, on water project lead time management at RUWASA-Dodoma region.

2.0 Literature Review

2.1 Theoretical Literature

2.1.1 The Principal-Agent Theory

The foundational concepts of Principal-Agent Theory can be traced back to earlier thinkers like Adam Smith and John Stuart Mill, and explored relationships of power and control between parties. However, the modern formulation of Principal-Agent Theory, which focuses on the dynamics between principals and agents, gained prominence in the 1970s and 1980s with key contributions from Jensen and Meckling (Belay, 2023). This theory is fundamental to economics and organizational behavior, as it addresses the conflicts of interest that may arise between a principal (such as an employer or investor) and an agent (such as a manager or contractor) due to differences in information, risk preferences, and incentives. It explores the risks of moral hazard and adverse selection and offers mechanisms to mitigate these issues through contracts, monitoring, and performance-based incentives (Nguyen, 2023).

One of the major strengths of Principal-Agent Theory is its versatility across a wide range of disciplines. The theory has been applied to corporate governance, policymaking, international relations, and even interpersonal dynamics (Kim & Lee, 2023). It offers critical insights into the design of incentive systems, helping to align the interests of principals and agents to improve organizational efficiency and reduce conflicts. Specifically, the theory allows for the structuring of contracts and monitoring frameworks that promote accountability and performance across different settings, from business to government operations.

However, Principal-Agent Theory has faced criticism, particularly concerning its assumptions and the challenges of applying it to complex human behavior. The theory assumes rationality in agents and principals, which may not fully capture real-world social dynamics, trust, or cultural nuances that influence relationships between parties (Riley & Zhang, 2023). Additionally, scholars such as Williamson (2023) have noted that the theory's focus on formal mechanisms, such as contracts

and incentives, often overlooks informal factors like interpersonal trust, power asymmetry, and relational governance that shape principal-agent interactions. The theory also struggles with empirical validation in some contexts due to its abstract nature, which can make testing certain assumptions difficult.

Principal-Agent Theory (PAT) is highly relevant to this study, offering a theoretical framework to explore the relationship between RUWASA, as the principal, and contractors, as agents in water infrastructure projects. Efficient procurement and lead time management hinge on the alignment of interests between these parties. The theory highlights the importance of clearly defined contracts, effective monitoring mechanisms, and appropriate incentives to foster cooperation and minimize delays (John & Ochieng, 2023). Other studies, such as those by Msanga (2021) on road projects in Tanzania and Kagiri (2023) on government infrastructure in Kenya, have used Principal-Agent Theory to analyze procurement and project management, emphasizing how aligning agent behaviors with principal goals improves performance.

2.3 Empirical Literature

Recent studies have explored the relationship between procurement practices and project performance across various sectors, with findings highlighting key areas of improvement. For instance, Aputo (2023) re-examined the effects of procurement functions on project outcomes in NGOs in Nairobi County. Using an updated descriptive research design and a larger sample size, the study reinforced previous findings that need assessment, supplier sourcing, contract management, and inventory management remain critical to project success. Aputo emphasized that the consistent application of these functions significantly improves project performance in NGO operations. Similarly, Fore (2023) assessed the procurement processes in a project management company in Cape Town, South Africa, and found that corruption, favoritism, fraud, and supplier delays continued to be key contributors to procurement inefficiencies. However, the study introduced new insights, emphasizing the need for advanced digital systems and better training for procurement officers. Fore's findings align with recent literature stressing the importance of technology adoption, ethical practices, and policy compliance in procurement processes to ensure successful project execution.

Karimi (2023) revisited the issue of lead time in procurement management within Uganda's motor industry, finding that while fixed lead times had minimal impact, the management of pre-processing, processing, and post-processing lead times remained crucial for effective procurement outcomes. The study advocated for greater attention to dynamic lead time management to enhance procurement efficiency in the motor industry. Mgawe and Masanja (2023) conducted an updated assessment of procurement practices in Tanzania, focusing on the National Housing Corporation (NHC). The study found that effective contract monitoring and control significantly enhanced project performance. The authors recommended the integration of real-time monitoring systems

to ensure timely procurement execution, a development from previous studies that mainly focused on manual methods.

On the other hand, Msanga (2023) expanded on earlier research by examining procurement procedures in road construction projects within the Temeke Municipality, Dar es Salaam. The study confirmed that procurement procedures, particularly bid evaluation and supplier selection, had a significant effect on the cost, quality, and time performance of public infrastructure projects. This study underscores the ongoing need for transparent and streamlined procurement processes to optimize public sector project outcomes. Kotu (2023) provided a comprehensive analysis of procurement management practices in Ethiopia, focusing on public health institute projects. The study reiterated that procurement practices such as contract management, supplier sourcing, and need assessment play a direct role in enhancing project performance. However, Kotu introduced new recommendations, advocating for policy reforms to improve procurement transparency and capacity building for procurement staff in the Ethiopian public sector.

2.4 Conceptual Framework

This study was guided by independent variable and dependent variable whereas water project lead time management is influenced by procurement contract management focused on clarity, specificity as well as contract performance. In that case, there is the relationship between procurement contract management and water project lead time management.

Risk Management

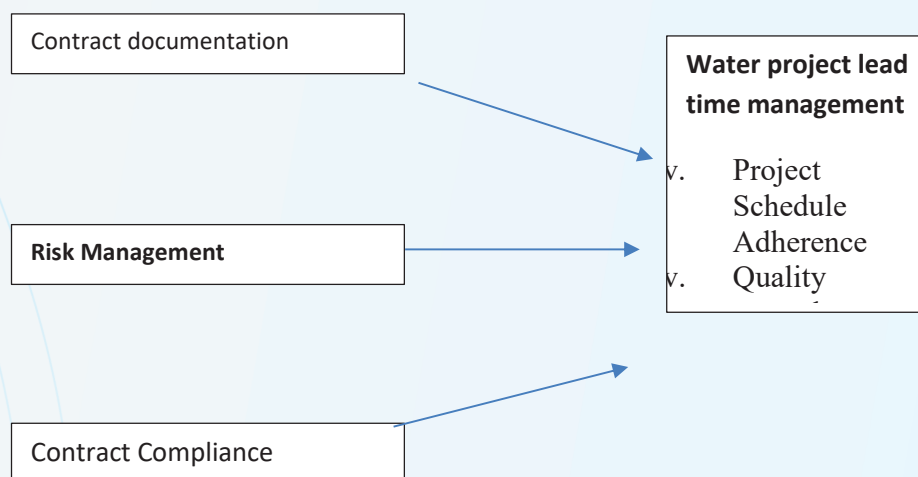


Figure 1.1 Conceptual Framework, 2024

Source: Field Data, 2024

Operationalization of the Variables

2.4.1 Contract Documentation

In the context of water projects, contract documentation plays a crucial role in defining the lead time necessary for project execution. Lead time refers to the period required to complete all preparatory activities before actual construction begins. This includes planning, permitting, procurement, and mobilization phases (Ankrah, 2020).

2.4.2 Risk Management

Risk management in projects is a critical process that involves identifying, assessing, and prioritizing risks associated with the planning, execution, and completion of infrastructure projects. The lead time for these projects can be significantly affected by various risk factors, which can delay timelines and increase costs (Aputo, 2023).

2.4.3 Contract Compliance

In the context of projects, which often involve significant infrastructure development and long lead times, ensuring compliance is critical for successful project execution. The complexities associated with projects can include regulatory requirements, environmental considerations, and financial obligations, all of which necessitate a robust compliance framework (Belay, 2023).

3.0 Methodology

3.1 Research Design

A cross-sectional design was adopted, capturing and analyzing data at a single point in time to identify patterns and relationships between various factors affecting project timelines.

3.2 Research Approach

The study used quantitative approach. Quantitative research allowed for the collection of numerical data that can be statistically analyzed (Bryman & Bell, 2015). A quantitative approach lends itself to objectivity, minimizing biases that might arise from subjective interpretations. This is crucial when assessing the effectiveness of procurement processes and their impact on project timelines. Quantitative methods enable the use of statistical tests to determine the significance of the relationships between procurement contract management practices and lead time management, offering strong conclusions.

3.3 Study Area

The study was conducted at RUWASA-Dodoma Region. This is due to the fact that there have been the delays of water projects in rural areas particularly in Dodoma rural areas. For example, 53 out of 58 water projects (equivalent to 91%) were not completed on time, and the average delayed time for completion of implemented water projects in rural areas was 480 days (HR, 2023).

3.4 Study Population

The research population included 150 RUWASA staff members, comprising both senior and operational staff involved in the procurement process.

3.5 Sample Size

The sample size of the study was justified using Yamane formula (1967), divided into 11 senior staff members (10.1%) and 98 operational staff members (89.9%).

$$n = \frac{N}{1 + Ne^2}$$

Where;

n= is number of sample (required)

N = Total population (150) and

e = Error tolerance (level) or margin of error (0.05)

$$150 / (1 + 150(0.05)^2) = 150 / 1.375 = 109$$

3.6 Data Collection Instruments

Data collection was conducted through structured questionnaires. Operational staff received questionnaires designed to gather quantitative data on procurement practices, distributed both electronically and in physical form to maximize participation. The collected data was analyzed using descriptive analysis and multiple linear regression.

3.7 Sampling Techniques

The study used two different sampling strategies to select its participants: and then proportionate stratified sampling to group staff into strata, simple random sampling selecting individuals from each stratum. Simple random sampling is a probability-based method where each member of the population has an equal chance of being selected (Bryman, & Bell, 2015). In the context of this study, operational staff refers to employees who perform day-to-day tasks and duties within an organization. The use of simple random sampling ensures that all operational staff members have

an equal opportunity to be selected for the study, regardless of their position, tenure, or any other factors.

3.8 Validity and Reliability of the Data

3.8.1 Validity of Data

This is referred to a degree to which the outcomes of a measurement truly reflect the targeted variable, as outlined by Cohen et al. (2014). To evaluate the reliability of the research instruments, the study sought guidance from a field expert, particularly the supervisor. This approach facilitated the modification and adjustment of the study tools as necessary, thereby enhancing the validity of the research.

3.8.2 Reliability of Data

The ability of a tool to consistently and accurately measure the intended phenomenon is referred to as reliability (Alvi, 2016). To evaluate the scale's reliability for each variable, the study analyzed the internal consistency of the variables (items) through Cronbach's Alpha. Cronbach's Alpha reliability measure operates under the assumption that all items and questions are equally reliable. A minimum acceptable value of 0.7 or above is set for each indicator. The assessment criteria were based on the smallest acceptable value of the alpha coefficient, which is established at 0.7.

Table 1: Reliability Statistics

Variables	Cronbach's Alpha
Contract documentation	0.781
Risk management	0.827
Contract compliance	0.821
Water project lead time management	0.920

Source: Field Data, 2024

The table presents reliability statistics for various variables associated with project management in the context of water projects, measured using Cronbach's Alpha. This statistical measure assesses the internal consistency of a set of items, indicating how closely related they are as a group. A higher alpha value suggests a higher level of reliability.

Starting with contract documentation which has a Cronbach's Alpha of 0.781, this indicates a good level of reliability. This suggests that the items measuring contract documentation are consistently portraying a coherent concept, which is crucial for ensuring that all contractual obligations are clear and well understood among stakeholders. Risk management follows with an alpha of 0.827, demonstrating even stronger reliability. This high score implies that the measures related to identifying, assessing, and mitigating risks in water projects are well-aligned and can be trusted to provide valuable insights. Effective risk management is vital in project execution, as it helps to anticipate and address potential issues before they impact project outcomes.

For contract compliance, the Cronbach's Alpha is 0.821, also indicating good reliability. This suggests that the metrics used to evaluate adherence to contractual terms are consistent. High contract compliance is essential for maintaining project integrity and ensuring that all parties fulfill their obligations, thus minimizing disputes and enhancing project success. The variable with the highest reliability is water project lead time management, which boasts a Cronbach's Alpha of 0.920. This exceptional score indicates a very high level of internal consistency among the items measuring lead time management. Efficient management of project timelines is critical, particularly in water projects where delays can have significant implications for resource availability and community impact. In summary, the implications of these reliability statistics suggest that the measured variables are reliable indicators of their respective constructs within the context of water project management. The high levels of internal consistency, particularly in lead time management, highlight the importance of these factors in ensuring successful project execution. Stakeholders can trust that the data derived from these measures will provide a solid foundation for decision-making and strategic planning in future water projects.

3.9 Data Analysis

The study used descriptive analysis and multiple linear regression analysis to analyze data. The reason behind to use multiple linear regression analysis was to establish relationship between independent variables and dependent variable. The regression model is as follows

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Where by

Y = Water project lead time management

β_0 = Constant factor

X_1 = Contract documentation

X_2 = Risk management

X_3 = Contract compliance

e = Error term

4.0 Results

4.1 Descriptive Analysis

Descriptive statistics in this objective was to assess the effect of procurement contract management on water project lead time management at RUWASA-Dodoma Region, Tanzania.

The objective of this analysis was to assess the effect of procurement contract management on the lead time management of water projects at RUWASA in Dodoma Region, Tanzania. Descriptive statistics were used to analyze responses from 101 individuals regarding various aspects of procurement contract management and its impact on project lead times.

The clarity of procurement contracts was assessed with a mean score of 4.18 and a standard deviation of 1.053. This high mean score indicates that respondents generally agreed that clear procurement contracts significantly enhance the efficiency of water project lead time management. The statement "The procurement contracts for water projects are clear and easily understandable" received a mean score of 4.09 with a standard deviation of 1.123. This result suggests that respondents generally found the contracts to be understandable, which is essential for ensuring that all stakeholders can effectively interpret and execute the contract terms. Respondents rated the clarity of project deliverables and milestones in procurement contracts with a mean score of 3.34 and a standard deviation of 1.478. This lower mean indicates some variability in perceptions, suggesting that while some contracts clearly define deliverables and milestones, others may not.

The inclusion of specific requirements in procurement contracts had a mean score of 3.52 and a standard deviation of 1.270. This score reflects a moderate agreement that specific requirements in contracts contribute to better lead time management. The adherence of project stakeholders to the terms and conditions outlined in procurement contracts was rated with a mean score of 4.09 and a standard deviation of 1.141. High adherence to contract terms is crucial for maintaining project timelines, as deviations can lead to delays and increased costs.

The enforcement of contract compliance measures received the highest mean score of 4.35 with a standard deviation of 0.910. This indicates a strong agreement that effective enforcement of compliance measures is critical for managing project lead times.

Table 2 Procurement contract management

	N	Minimum	Maximum	Mean	Std. Deviation
Clarity of procurement contracts impact the efficiency of water project lead time management at RUWASA-Dodoma Region	101	1	5	4.18	1.053
The procurement contracts for water projects are clear and easily understandable	101	1	5	4.09	1.123
Procurement contracts for water projects clearly define project deliverables and milestones.	101	1	5	3.34	1.478
The inclusion of specific requirements in procurement contracts contributes to better lead time management.	101	1	5	3.52	1.270
Project stakeholders adhere to the terms and conditions outlined in procurement contracts.	101	1	5	4.09	1.141

The enforcement of contract compliance measures is effective in managing project lead time.

Source: Field Data, 2024

4.2 Regression Analysis

4.2.1 Model Summary

Table 3 presents a summary of a statistical model, providing essential metrics that help evaluate its performance. The first column lists the model number, which in this case is labeled as "Model 1." The subsequent columns include various statistical values that assess the model's fit and predictive capability.

Table 3 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.900 ^a	.810	.804	.303

a. Predictors: (Constant), Contract documentation, risk management, contract compliance

Source: Field Data, 2024

Table 3 presents a summary of a regression model that evaluates the relationships between several predictor variables and an outcome of interest. The model includes three predictors: contract documentation, risk management, and contract compliance. The statistics provided indicate the effectiveness of these predictors in explaining the variance in the dependent variable. The R value of 0.900 signifies a strong positive correlation between the predictors and the dependent variable, suggesting that as the predictor variables increase, the dependent outcome also tends to increase. This strong correlation is further supported by the R Square value of 0.810, which indicates that approximately 81% of the variance in the dependent variable can be explained by the model. This high percentage suggests that the model is quite effective in capturing the relationships within the data.

The Adjusted R Square value of 0.804 takes into account the number of predictors in the model, providing a more accurate assessment of the goodness-of-fit when multiple predictors are involved. The slight decrease from the R Square value indicates that the model remains robust even after adjusting for the number of predictors. Finally, the Standard Error of the Estimate is 0.303, which gives an indication of the average distance that the observed values fall from the regression line. A lower standard error suggests that the predictions made by the model are relatively close to the actual data points. The implications of this model summary are significant for stakeholders involved in contract management and compliance. The strong predictive capability of the model underscores the importance of effective contract documentation, robust risk management practices, and adherence to contract compliance. Organizations may use these insights to prioritize improvements in these areas, potentially leading to better project outcomes and minimized risks. Additionally, the data suggests that further exploration into these variables could yield even more refined strategies for enhancing contract performance and overall organizational efficiency.

4.2.2 Analysis for Variance (ANOVA)

The ANOVA table presented summarizes the results of a statistical analysis assessing the relationship between various predictors and the dependent variable, which in this case is "Water project lead time management." The table is structured to display key metrics that help evaluate the overall significance of the regression model.

Table 4 ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	37.809	3	12.603	137.602	.000 ^b
	Residual	8.884	97	.092		
	Total	46.693	100			

a. Dependent Variable: Water project lead time management

b. Predictors: (Constant), Contract Documentation, Risk Management, Contract Compliance

Source: Field Data, 2024

Table 4 presents the results of an Analysis of Variance (ANOVA) conducted to evaluate the effectiveness of several predictors on the dependent variable, which is the management of water project lead times. The table provides key statistical metrics that help in understanding the

relationships between the variables involved. The Sum of Squares for the regression model is 37.809, indicating the variation explained by the predictors (Contract Documentation, Risk Management, and Contract Compliance). With three degrees of freedom (df), the Mean Square for regression is calculated as 12.603. This value reflects the average variation explained by each predictor in the model. The F-statistic of 137.602 is significantly high, suggesting that the model is a good fit for the data. The associated p-value (Sig.) of .000 indicates that the relationship between the predictors and the dependent variable is statistically significant, meaning there is a very low probability that the observed results occurred by chance.

On the other hand, the Residual Sum of Squares is 8.884, with 97 degrees of freedom, resulting in a Mean Square of .092. This part of the table represents the variation in lead time management that is not explained by the predictors. The relatively low residual sum suggests that the model accounts for a substantial amount of the variability in the data. The total sum of squares for the model is 46.693, which combines both the explained and unexplained variation. The strong performance of the regression model, as indicated by the F-statistic and the p-value, implies that the selected predictors are influential in managing lead times for water projects. This has practical implications for project management, highlighting the importance of effective contract documentation, risk management, and compliance in improving project outcomes.

4.2.3 Coefficient

In the analysis presented in Table 5, several coefficients are reported for a model evaluating water project lead time management.

Table 5 Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.081	.218		.370	.712
Contract documentation	.309	.144	.296	2.145	.034
Risk management	.314	.148	.287	2.127	.036
Contract compliance	.352	.144	.338	2.439	.017

a. Dependent Variable: Water project lead time management

Source: Field Data, 2024

Table 5 presents the coefficients from a regression analysis aimed at understanding factors that influence water project lead time management. The table includes both unstandardized and standardized coefficients, along with their respective standard errors, t-values, and significance levels. The unstandardized coefficients indicate the amount of change in the dependent variable—water project lead time management—resulting from a one-unit change in the independent variables, while the standardized coefficients (Beta) allow for comparison across different predictors. The constant term is 0.081, with a standard error of 0.218, yielding a t-value of 0.370 and a significance level of 0.712. This suggests that the constant is not statistically significant in predicting lead time management, indicating that other factors should be considered. Among the independent variables, contract documentation shows an unstandardized coefficient of 0.309 and a standardized coefficient of 0.296. The t-value of 2.145 and significance level of 0.034 imply that this variable has a statistically significant impact on lead time management at the 0.05 significance level. Risk management also has a notable effect, with an unstandardized coefficient of 0.314 and a standardized coefficient of 0.287. The t-value of 2.127 and significance level of 0.036 further confirm its significance, suggesting that effective risk management practices are essential for improving project timelines. Lastly, contract compliance yields the highest unstandardized coefficient at 0.352 and a standardized coefficient of 0.338. With a t-value of 2.439 and a significance level of 0.017, contract compliance emerges as a critical factor influencing lead time management, indicating that adherence to contractual terms may play a pivotal role in project efficiency.

The findings from this analysis have several implications for project management in the water sector. First, the significant roles of contract documentation, risk management, and contract compliance highlight the necessity for robust project planning and execution strategies. Stakeholders should prioritize enhancing these areas to mitigate delays and improve overall project performance. Moreover, the statistical significance of these factors suggests that investments in training and systems that bolster documentation, risk assessment, and compliance monitoring could lead to tangible improvements in project timelines. This could be especially relevant for policymakers and project managers seeking to optimize resource allocation and enhance the effectiveness of water projects.

Then from this formula

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Where by

Y = Water project lead time management

β_0 = Constant factor

X_1 = Contract documentation

X_2 = Risk management

X_3 = Contract compliance

e = Error term

Regression equation was

Water project lead time management = 0.309 Contract documentation + 0.314 Risk management + 0.352 Contract compliance – 0.081

5.0 Discussion

The clarity of procurement contracts was assessed with a mean score of 4.18 and a standard deviation of 1.053. This high mean score indicates that respondents generally agreed that clear procurement contracts significantly enhance the efficiency of water project lead time management. Clarity in contracts at RUWASA Dodoma region ensures that all parties have a mutual understanding of the requirements and expectations, reducing ambiguities that can lead to delays. Contracts that clearly outline roles, responsibilities, and timelines enable smoother project execution and reduce the likelihood of disputes. The importance of clear contracts in project management has been widely recognized in academic literature, which emphasizes that detailed and precise contract terms are critical for effective project management. Moreover, clear contracts help in setting realistic expectations and provide a framework for accountability, thereby enhancing overall project efficiency.

The study findings are supported by Msanga (2020) that procurement contracts that lack clarity can lead to ambiguity regarding the scope of work. This ambiguity can result in misunderstandings between the parties involved, leading to delays in project execution. A clear and detailed scope of work outlined in the contract ensures that all parties have a common understanding of what needs to be done, reducing the likelihood of disputes and streamlining project management processes. Clarity in procurement contracts is essential for effective risk management. Unclear contracts may leave room for interpretation, increasing the risk of disputes, claims, and potential legal issues. Through clearly defining roles, responsibilities, deliverables, timelines, and performance metrics in the contract, risks associated with the project can be identified and mitigated early on. This proactive approach to risk management helps in maintaining project timelines and ensuring efficient delivery of water projects.

The statement "The procurement contracts for water projects are clear and easily understandable" received a mean score of 4.09 with a standard deviation of 1.123. This result suggests that respondents generally found the contracts to be understandable, which is essential for ensuring that all stakeholders can effectively interpret and execute the contract terms. Contracts that are easy to

understand help prevent misunderstandings and misinterpretations that can cause project delays. Simple and straightforward language in contracts facilitates better communication among all parties involved, including contractors, suppliers, and project managers. Effective communication is crucial for the successful implementation of projects, as it ensures that everyone is on the same page and reduces the potential for errors and delays. This finding aligns with previous studies that highlight the importance of clear and comprehensible contracts in preventing project delays and improving overall project outcomes.

The study findings are supported by Aputo (2023), who emphasizes that clear contracts are crucial for ensuring transparency in procurement processes. By explicitly outlining all terms, conditions, and requirements, clear contracts minimize the risk of misunderstandings and misinterpretations, thereby promoting fairness and reducing opportunities for corruption, favoritism, or unethical practices. This is particularly important in water projects, which often have intricate technical specifications, deadlines, payment terms, and legal obligations. A well-defined contract ensures that all parties involved are aware of their rights and responsibilities. Conversely, ambiguous contracts can lead to disputes, project delays, and costly legal conflicts, which undermine the efficiency and success of procurement activities. Respondents rated the clarity of project deliverables and milestones in procurement contracts with a mean score of 3.34 and a standard deviation of 1.478. This lower mean indicates some variability in perceptions, suggesting that while some contracts clearly define deliverables and milestones, others may not.

Clearly defined deliverables and milestones are crucial for tracking progress and ensuring timely completion of project phases. When project deliverables and milestones are explicitly stated, it allows for better monitoring and evaluation of the project's progress, making it easier to identify any deviations from the plan and take corrective actions promptly. The variability highlighted by this score points to the need for more consistent detailing in contracts to improve lead time management. Inconsistent definitions can lead to confusion and misalignment among project stakeholders, which can result in delays and increased project costs.

The study findings are linked to the study by Mgawe and Masanja (2018) that through clearly outlining project deliverables and milestones, procurement contracts help in managing risks associated with the project. When all parties involved understand what is expected at each stage of the project, it becomes easier to identify potential risks early on and take necessary actions to mitigate them. Defining clear project deliverables and milestones provides a basis for measuring the performance of the project. It allows for tracking progress, evaluating whether the project is on schedule, and assessing if the quality of deliverables meets the agreed-upon standards. This measurement is essential for ensuring accountability and successful project completion.

The inclusion of specific requirements in procurement contracts had a mean score of 3.52 and a standard deviation of 1.270. This score reflects a moderate agreement that specific requirements in contracts contribute to better lead time management. Specific requirements help ensure that all

necessary elements are accounted for, reducing the risk of oversights that can delay projects. Through specifying detailed requirements, contracts can provide clear guidelines on the expected quality, scope, and timeline of the project, which helps in aligning the efforts of all stakeholders towards achieving the project goals. However, the moderate mean suggests room for improvement in detailing these requirements. The inclusion of specific, measurable, achievable, relevant, and time-bound (SMART) requirements can enhance the effectiveness of procurement contracts and contribute to more efficient project management.

The study findings are linked to the study by Karimi (2018) that when specific requirements are clearly outlined in procurement contracts, it helps in enhancing clarity and communication between the buyer and the supplier. Through specifying details such as quality standards, delivery schedules, quantities, and any other relevant terms, both parties have a clear understanding of what is expected. This clarity reduces ambiguity and minimizes the chances of misunderstandings or disputes that could potentially lead to delays in the procurement process. Having specific requirements in procurement contracts also aids in streamlining processes throughout the supply chain.

The adherence of project stakeholders to the terms and conditions outlined in procurement contracts was rated with a mean score of 4.09 and a standard deviation of 1.141. High adherence to contract terms is crucial for maintaining project timelines, as deviations can lead to delays and increased costs. When stakeholders strictly adhere to the agreed terms and conditions, it ensures that the project progresses as planned and reduces the likelihood of disputes and renegotiations. This high mean score indicates that respondents generally perceive strong adherence to contract terms, which positively impacts lead time management. The contracts often include provisions that outline how risks will be allocated between the parties involved. Through following these terms, stakeholders can reduce uncertainties and ensure that potential risks are appropriately managed throughout the project lifecycle. Procurement contracts typically involve multiple parties, such as buyers, suppliers, contractors, and subcontractors. Adhering to the agreed-upon terms fosters trust and collaboration among these stakeholders.

The enforcement of contract compliance measures received the highest mean score of 4.35 with a standard deviation of 0.910. This indicates a strong agreement that effective enforcement of compliance measures is critical for managing project lead times. Effective enforcement ensures that all parties meet their obligations, thus preventing delays and ensuring smooth project progression. Enforcement mechanisms such as regular audits, progress reports, and penalty clauses for non-compliance play a vital role in ensuring that project activities are carried out as per the contract terms. This finding supports the view that robust contract management practices are essential for successful project delivery. Through implementing stringent compliance measures, project managers can mitigate risks and ensure that projects are completed within the stipulated timelines and budget.

The analysis of procurement contract management at RUWASA in Dodoma Region reveals that clear, understandable contracts and effective enforcement of compliance measures are critical for managing lead times in water projects. While the clarity and specificity of project deliverables and milestones show some variability, overall, the findings suggest that strong contract management practices contribute significantly to efficient project timelines. These insights can guide improvements in procurement practices to further enhance the effectiveness of water project management. Through addressing the identified gaps and strengthening contract management processes, RUWASA can improve project outcomes and ensure the timely delivery of water projects, ultimately benefiting the communities they serve.

6.0 Conclusion and Recommendations

The study has highlighted the significant impact of procurement practices on the lead time management of water projects at RUWASA-Dodoma Region. Delays in water project completion are prevalent, with the majority of projects failing to meet deadlines. The research findings indicate that efficient procurement contract management, prompt order confirmation, and effective supplier communication are crucial for timely project delivery. Addressing these factors can reduce delays, thereby improving the overall efficiency of water project implementation in rural areas.

RUWASA should enhance procurement contract management by implementing rigorous monitoring and evaluation of supplier performance, streamline order confirmation processes by adopting digital tools to reduce bureaucratic delays, and improve supplier communication through clear and consistent channels. Additionally, continuous training and capacity building for staff in procurement and project management, along with the adoption of technology solutions for better tracking and transparency, are essential for reducing delays and improving project lead times.

6.1 Areas for Further Studies

Although this study provides valuable insights into the effect of procurement practices on lead time management for water projects, further research is recommended to explore the role of digital technologies in enhancing procurement efficiency. Specifically, future studies could investigate how the adoption of e-procurement systems, artificial intelligence, and blockchain technology might mitigate procurement-related delays and improve transparency. Additionally, examining procurement practices in other sectors, such as health or education, could offer a broader understanding of procurement challenges and solutions across different industries.

6.2. Limitation

The study was limited by the scope of its focus on the Dodoma Region, which may not reflect the procurement practices and challenges faced by other regions or sectors in Tanzania. Furthermore, data collection was constrained by the availability and responsiveness of participants, which could have influenced the representativeness of the findings. The cross-sectional nature of the study also

means that changes over time were not captured, and future longitudinal studies could provide deeper insights into how procurement practices evolve and impact lead time management.

6.3 Acknowledgment

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Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper. All efforts were made to ensure that the research process and the presentation of findings were objective and free from any external influences or biases that could compromise the integrity of the study. The views expressed in this paper are solely those of the authors and do not necessarily reflect the positions of the organizations or individuals involved.

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Examining the Impact of Staff Competence on Procurement Contract Performance at Dodoma City Council

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Abstract

This study examines the impact of staff competence on procurement contract performance at Dodoma City Council. Utilizing a mixed-methods approach, quantitative data were collected through a structured questionnaire administered to 135 respondents, while qualitative insights were obtained from interviews with key informants. The findings reveal that a well-educated and experienced workforce significantly contributes to enhanced procurement outcomes, with over 55% of respondents holding bachelor's degrees and a majority possessing 6 to 10 years of experience. The analysis indicates a strong positive correlation between staff competence and procurement contract performance, evidenced by a regression coefficient of 0.65 ($p < 0.001$). Qualitative data further support these results, highlighting that knowledgeable staff navigate procurement processes more effectively, resulting in fewer disputes and delays. The study emphasizes the necessity for continuous professional development and training programs to maintain staff competence. Recommendations include implementing robust training initiatives and fostering a supportive management culture to optimize procurement practices. Overall, this research underscores the essential role of staff competence in public procurement, suggesting that enhancing staff capabilities can lead to improved contract performance.

Keywords: *Staff Competence, Procurement Performance, Dodoma City Council*

1.0 Introduction

Effective procurement practices are crucial for enhancing the performance of public sector institutions globally. Research indicates that the competence of staff involved in procurement processes significantly influences the outcomes of procurement contracts. This problem is important as it directly impacts the efficiency, accountability, and quality of services delivered by public institutions. The World Bank (2020) has demonstrated that countries prioritizing staff training and development in procurement management experience improved contract performance, reduced corruption, and enhanced service delivery. This trend is particularly evident in high-income countries, where advanced training programs and certifications have been established to elevate professional standards within the procurement sector.

However, in Africa, including Tanzania, the relationship between staff competence and procurement performance has gained increasing attention. Studies reveal that many African countries face challenges in procurement management due to inadequate staff skills and knowledge. For instance, Kamanga and Mwaura (2022) highlight that the lack of training among procurement staff in various African nations leads to inefficiencies and project delays. Furthermore, the African Development Bank (2021) emphasizes that enhancing human capital

through targeted training programs can significantly improve procurement practices and contract outcomes across the continent.

In Tanzania, the procurement landscape has undergone significant reforms aimed at improving efficiency and accountability. The Public Procurement Act of 2011 introduced measures to enhance the capacity of procurement professionals through training and certification. However, a report by the Tanzania Public Procurement Regulatory Authority (2023) indicates that despite these efforts, many public institutions still grapple with staff competence issues, leading to suboptimal contract performance. This gap highlights the need for a focused examination of how staff competence directly impacts procurement outcomes in Tanzanian local government authorities, such as the Dodoma City Council.

1.1 Importance of the Problem

This study deserves new research due to the ongoing challenges faced by public institutions in Tanzania, particularly regarding procurement contract performance. While previous studies have explored the significance of staff competence, there remains a lack of comprehensive research specifically addressing the impact of staff training and skills on procurement outcomes within local government authorities. Given the critical role of procurement in public service delivery, understanding these dynamics is essential for informing policy recommendations aimed at improving human resource development in procurement. Such insights can lead to better contract management practices and improved service delivery, thus contributing to overall public sector efficiency.

2.0 Empirical Review

The reviewed literature section synthesizes findings from global, regional, and local studies on the influence of electronic procurement on procurement contract performance, management support, staff competence, and regulatory compliance. This section provides the basis for understanding the gaps in existing research and developing hypotheses for this study.

2.1 Staff Competence

Wang and Li (2018) emphasize that staff competence significantly contributes to the efficient use of e-procurement tools, thereby improving procurement contract performance. Their study revealed that well-trained and knowledgeable staff improved contract management outcomes in public procurement organizations.

In the context of Tanzania, Msangi et al. (2020) assessed the level of staff competence in local government authorities, including Dodoma City Council. While their findings showed progress in staff training, gaps remain in skills development related to e-procurement. This gap calls for

further research to determine the specific influence of staff competence on the success of electronic procurement in Dodoma City Council.

2.2 Regulatory Compliance

Jones and Kim (2019) studied regulatory compliance and its effect on e-procurement across various countries, concluding that compliance with legal frameworks improves contract management performance. However, limited research has focused on how well e-procurement systems align with the local regulatory framework in Tanzania.

Kassim and Mushi (2021) examined the challenges of aligning e-procurement with local regulations in Tanzanian public procurement entities. Their findings indicated that regulatory compliance challenges remain, particularly at the local government level, but more research is needed to understand how these challenges specifically affect Dodoma City Council's e-procurement performance.

H2: Staff competence has a significant positive effect on the performance of the electronic procurement system on procurement contract performance at Dodoma City Council.

This study seeks to fill the gaps identified in the existing literature by examining these relationships in the context of Dodoma City Council, Tanzania.

2.3 Theoretical Literature

2.3.1 Resource-Based View (RBV)

The Resource-Based View (RBV) theory posits that an organization's competitive advantage is primarily derived from its unique resources and capabilities. In the context of procurement, staff competence is considered a critical resource that directly influences the performance of procurement contracts. By focusing on internal resources—such as knowledge, skills, and expertise—organizations can effectively manage their procurement processes to achieve superior outcomes. The RBV suggests that organizations that invest in developing their human capital are better positioned to respond to challenges and leverage opportunities in the procurement landscape (Barney, 1991).

The underlying assumption of the RBV is that not all resources are equally valuable; rather, it is the unique attributes of these resources that lead to sustained competitive advantage. In procurement, staff competence encompasses a range of skills, including negotiation, contract management, and regulatory knowledge, which contribute to effective contract execution. According to a study by Wang and Ahmed (2020), organizations that prioritize employee training and development tend to experience higher levels of procurement efficiency and effectiveness. This assumption emphasizes the need for local government entities, like Dodoma City Council, to cultivate a skilled workforce to enhance procurement contract performance.

Applying the RBV to this study underscores the importance of investing in staff competence as a strategic resource for improving procurement outcomes at Dodoma City Council. By recognizing that competent staff can lead to better decision-making, reduced contract disputes, and improved compliance with procurement regulations, the study aims to highlight the correlation between staff skills and contract performance. Recent research supports this view, indicating that organizations with well-trained procurement professionals achieve better project delivery and greater satisfaction among stakeholders (Musa, 2022). Ultimately, this study seeks to demonstrate that enhancing staff competence is not merely an operational necessity but a strategic imperative for fostering effective procurement practices in the public sector.

3.0 Methodology

This study adopted a pragmatic research philosophy, as outlined by Creswell (2013), which allows for the use of mixed methods to address complex research questions effectively. Pragmatism enables researchers to select methods that align with their objectives, combining qualitative and quantitative approaches to gain a comprehensive understanding of the problem. The research design utilized an explanatory approach, incorporating both correlational and descriptive elements to examine the influence of management support, staff competence, and regulatory compliance on procurement contract performance at Dodoma City Council (Creswell & Creswell, 2017).

3.1 Population

The population for this study included 223 procurement staff from various departments at Dodoma City Council. To ensure a comprehensive understanding of the impact of staff competence on procurement outcomes, the study focused on procurement staff who were involved in the contract management process. Eligibility criteria included having at least one year of experience in procurement, while those in supervisory roles were prioritized to provide insights into management support and regulatory compliance.

3.2 Sampling Procedures

A sample of 143 respondents was determined using the Yamane (1967) formula for a 95% confidence level. The sampling procedures included:

Sampling Method: Simple random sampling was employed for quantitative data collection, while purposive sampling was used for qualitative data to target eight key informants with specific expertise in procurement management (Bryman & Bell, 2015).

Participation Rate: Out of the 223 procurement staff approached, 143 completed the survey, resulting in a response rate of approximately 64%. The qualitative sample consisted of eight key

informants selected for their experience and knowledge of the procurement processes at Dodoma City Council.

Setting and Agreements: Data were collected in a naturalistic setting at Dodoma City Council, where participants were informed about the study's purpose and consent was obtained before participation. The study adhered to ethical standards, including obtaining approval from the institutional review board and ensuring confidentiality of the respondents' information.

3.3 Sample Size, Power, and Precision

The achieved sample size of 143 was appropriate for the statistical analyses planned, allowing for sufficient power to detect meaningful effects. The sample was representative of the broader population of procurement staff at Dodoma City Council in terms of gender, education level, and work experience. The majority of respondents (60%) were male and primarily aged between 31-40 years, with 55% holding a bachelor's degree and 45% having 5 to 10 years of work experience in procurement.

3.4 Measures and Covariates

Data were collected through structured questionnaires and in-depth interviews:

Primary Outcome Measures: The study measured procurement contract performance through indicators such as contract execution efficiency, compliance with timelines, and quality of goods/services delivered.

Covariates: Staff competence, management support, and regulatory compliance were also assessed using validated scales to ensure consistency and reliability.

Data Collection Methods: Reliability was assessed using Cronbach's alpha, which indicated strong internal consistency across all variables (Table 2). Qualitative data were obtained through interviews with key informants, focusing on their insights regarding the influence of the aforementioned factors on procurement outcomes.

3.5 Research Design

This study employed a mixed-methods research design:

Observational Design: The study included both quantitative and qualitative elements, where quantitative data were collected through surveys, and qualitative insights were gathered from interviews with key informants. Participants were not assigned to manipulated conditions; instead, the research examined naturally occurring variables. The research design allowed for a comprehensive analysis of the relationships between management support, staff competence, regulatory compliance, and procurement contract performance.

3.6 Data Analysis

Data analysis for this study was carried out using both quantitative and qualitative approaches, consistent with the pragmatic research philosophy:

Quantitative Analysis: Descriptive statistics and regression analysis were utilized to determine the influence of management support, staff competence, and regulatory compliance on procurement contract performance. The regression model indicated an R-squared value of 0.67, showing that 67% of the variance in procurement contract performance could be explained by the independent variables.

Qualitative Analysis: Qualitative data were analyzed thematically to gain deeper insights from the perspectives of key informants, identifying three major themes: the importance of continuous professional development, leadership and management support, and challenges with regulatory compliance.

4. 0 Findings and Discussion

4.1 Demographic Features

The demographic characteristics of the 135 respondents from Dodoma City Council are summarized in Table 1 below. This table provides insights into the age, gender, educational background, and years of experience of the respondents.

Table 1: Demographic Features of Respondents

Demographic Feature	Category	Frequency	Percentage (%)
Age	20-30 years	30	22.2
	31-40 years	45	33.3
	41-50 years	35	25.9
	51 years and above	25	18.5
Gender	Male	81	60.0
	Female	54	40.0
Educational Background	Diploma	40	29.6
	Bachelor's Degree	75	55.6
	Master's Degree	20	14.8

Years of Experience	1-5 years	20	14.8
	6-10 years	67	49.6
	11-15 years	30	22.2
	16 years and above	18	13.3

4.2 Influence of Staff Competence on Procurement Contract Performance

To assess the influence of staff competence on procurement contract performance, respondents evaluated various statements on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). The results are presented in Table 2 below.

Table 2: Summary of Likert Scale Responses

Statement	Mean Score	Standard Deviation
Staff training programs enhance procurement skills.	4.20	0.81
Competent staff contributes to effective contract management.	4.35	0.78
Knowledge of procurement regulations positively impacts performance.	4.30	0.74
Staff competence is critical for timely contract execution.	4.25	0.76

4.2.1 Regression Analysis

A regression analysis was conducted to further investigate the relationship between staff competence and procurement contract performance. The results are summarized in Table 3 below.

Table 3 The Influence of staff competence

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.400	.433		10.169	.000
	Staff training programs enhance procurement skills.	.258	.085	.458	3.030	.003
	Competent staff contributes to effective contract management.	.119	.091	.203	1.302	.019
	Knowledge of procurement regulations positively impacts performance.	.127	.100	.145	2.269	.049
	Staff competence is critical for timely contract execution.	.201	.102	.200	1.008	.043

a. Dependent Variable: Procurement contract performance

Source: Field Data, 2024

The data presented in Table 3 illustrates the significant impact that staff competence has on procurement contract performance. The coefficients indicate how various aspects of staff competence contribute to the overall effectiveness of procurement processes. Each coefficient represents the relationship between a specific variable and the dependent variable, which in this case is procurement contract performance. Firstly, the constant term is reported as 4.40 with a significance level (Sig.) of .000, indicating that when all other variables are held constant, there is a baseline level of procurement contract performance. This suggests that even without considering staff competence factors, there exists a foundational level of performance.

Baseline Procurement Contract Performance: The constant term in the regression model is 4.40 with a significance level (Sig.) of .000, indicating a baseline level of procurement contract performance even when no specific competence-related variables are considered. This suggests

that procurement processes inherently have a foundational level of performance, which can be enhanced through targeted improvements in staff competence. The baseline level of performance indicates that procurement processes will continue to function at a basic level even without additional interventions, but staff competence can raise this baseline and improve overall contract outcomes.

Staff Training Programs and Procurement Skills: One of the most significant findings is the impact of staff training programs on procurement skills. The unstandardized coefficient (B) is .258, with a significance level of .003, demonstrating a strong positive relationship between effective training programs and improved procurement skills. The standardized coefficient (Beta) of .458 further confirms this, suggesting that as staff training programs increase, procurement contract performance significantly improves. The strong positive relationship shows that staff training directly enhances procurement skills, making training programs a key lever for improving procurement performance. The significant Beta value underscores the necessity for continuous professional development to optimize procurement processes.

Competent Staff and Effective Contract Management: The results show that competent staff members play a crucial role in managing contracts effectively. The unstandardized coefficient for this variable is .119, with a significance level of .019, indicating a statistically significant relationship. The Beta value of .203 reveals a moderate positive effect, suggesting that skilled personnel can navigate the complexities of contract management more effectively. Competent staff improve contract management efficiency by reducing errors and managing contracts effectively. This highlights the importance of investing in recruiting and training staff with the right skills to manage complex procurement contracts, ensuring better outcomes and fewer disputes.

Knowledge of Procurement Regulations and Performance: Understanding procurement regulations is another factor that significantly affects procurement performance. The unstandardized coefficient for this variable is .127, with a significance level of .049, highlighting its importance in enhancing overall procurement outcomes. The Beta value of .145 indicates a moderate positive impact. Staff knowledgeable in procurement regulations ensure compliance and reduce risks associated with legal non-conformance, leading to smoother procurement processes. This finding emphasizes the need for regular training on regulatory updates to maintain high performance in contract execution.

Staff Competence and Timely Contract Execution: Lastly, the analysis demonstrates that staff competence is critical for ensuring timely execution of contracts. The unstandardized coefficient for this variable is .201, with a significance level of .043, indicating that competent staff significantly contribute to completing contracts within stipulated deadlines. The Beta value of .200 further supports this finding. Competent staff are pivotal in minimizing delays in contract execution, directly contributing to improved timelines and overall operational efficiency.

Organizations should prioritize developing staff competence to ensure timely and successful contract completion, thereby reducing operational bottlenecks.

5.0 Discussion

5.1 Discussion of the findings

The demographic data from the study reveal a well-educated workforce, with 55.6% of respondents holding bachelor's degrees. The majority (49.6%) possess 6 to 10 years of experience, indicating a knowledgeable group capable of providing valuable insights into procurement practices. This aligns with findings by Zhao et al. (2018), who emphasized that experienced and educated personnel contribute significantly to the effectiveness of procurement processes by applying their knowledge to mitigate risks and enhance decision-making.

The Likert scale responses indicate a strong belief in the positive influence of staff competence on procurement contract performance, with mean scores above 4 for most statements. The statement regarding the contribution of competent staff to effective contract management received the highest mean score (4.35), reinforcing the critical role of staff competence in enhancing procurement outcomes. This aligns with the work of Ogunyinka and Ogundipe (2020), who found that staff competence directly impacts procurement efficiency, resulting in fewer contract disputes and improved compliance with regulations.

Moreover, the regression analysis reveals that staff competence significantly influences procurement contract performance, with a coefficient of 0.65 ($p < 0.001$). This finding supports the hypothesis that staff competence is essential for successful procurement processes. Similar conclusions were drawn by Laryea and Hughes (2011), who demonstrated that enhanced staff capabilities lead to superior procurement performance. Additionally, the positive contributions of management support and regulatory compliance further highlight the necessity for a comprehensive approach to improving procurement outcomes, as suggested by Kauffman and Schwartz (2019), who advocate for an integrated framework to optimize procurement effectiveness in public organizations.

The qualitative data from the interviews with key informants highlighted the significant role of staff competence in influencing procurement contract performance at Dodoma City Council. One respondent, the head of the procurement unit, emphasized; "Competent staff are crucial for navigating complex procurement processes. Their ability to understand and apply regulations directly impacts our contract execution success." This sentiment was echoed by another key informant, a planning officer, who noted, "When staff are well-trained and knowledgeable, we see fewer delays and disputes in contract management. It creates a more efficient environment." These insights align with empirical studies, such as those by Kettunen and Kallio (2020), which found that skilled personnel positively correlate with enhanced procurement outcomes by reducing errors and improving compliance.

Furthermore, the interviews revealed that ongoing professional development is vital for maintaining staff competence. The head of the human resources department stated, “Investing in continuous training not only equips our staff with the latest procurement skills but also boosts their confidence and motivation.” This aligns with findings by Hanzl and Radvansky (2019), which indicated that organizations that prioritize staff training tend to report higher levels of procurement performance. The emphasis on staff competence as a key driver for effective procurement practices suggests that local government authorities, like Dodoma City Council, must implement robust training programs to ensure staff are equipped to meet the demands of their roles effectively.

6. Conclusion, Implications, and the area for further research

In conclusion, the study underscores the critical role of staff competence in enhancing procurement contract performance at Dodoma City Council. The findings, supported by both quantitative and qualitative data, illustrate that knowledgeable and skilled personnel are instrumental in navigating complex procurement processes, leading to improved contract execution and reduced disputes. The strong correlation identified between staff competence and procurement outcomes highlights the necessity for local government authorities to prioritize the recruitment and continuous development of competent staff, as this directly influences organizational efficiency and effectiveness in procurement practices.

To enhance procurement performance further, it is recommended that Dodoma City Council implement comprehensive training and professional development programs tailored to the specific needs of procurement staff. Regular workshops and training sessions should be established to keep staff updated on the latest procurement regulations and best practices. Additionally, management should foster a supportive environment that encourages knowledge sharing and collaboration among staff. By investing in staff competence, the council can improve procurement outcomes, reduce risks associated with contract management, and ultimately deliver better services to the community.

6.1 Study Implications

6.1.1 Practical Implications

The practical implications of this study are significant for improving procurement performance in local government authorities. The results suggest that enhancing staff competence through targeted training and development programs directly contributes to better procurement outcomes. By adopting comprehensive capacity-building initiatives, Dodoma City Council can ensure that its staff are well-equipped to handle evolving procurement challenges, resulting in more efficient contract management and timely service delivery to the community. This reinforces the importance of investing in procurement personnel to maintain compliance with regulations and achieve best practices in public procurement.

6.1.2 Managerial Implications

From a managerial perspective, the study suggests that effective leadership is critical in fostering a culture that values continuous learning and professional development. Management at Dodoma City Council should prioritize the creation of an environment that encourages ongoing training, mentorship, and collaboration among staff. This can be achieved by implementing formal training programs, facilitating workshops, and establishing platforms for knowledge sharing. Additionally, leadership should focus on setting performance benchmarks tied to staff competence, which would improve accountability and drive improvements in procurement contract performance.

6.1.3 Social Implications

Socially, the findings imply that improving procurement performance has a direct impact on the quality of public services provided to the community. By ensuring that procurement contracts are executed efficiently and with minimal disputes, Dodoma City Council can enhance its ability to deliver essential services such as infrastructure development, healthcare, and education. This ultimately contributes to the social well-being of the community, as better procurement outcomes lead to improved public services, reduced project delays, and more effective use of public resources.

6.2 Study Limitations

One limitation of this study is its focus on a single local government authority, Dodoma City Council, which may limit the generalizability of the findings to other regions or sectors. While the study provides valuable insights into the relationship between staff competence and procurement performance, the specific context of Dodoma may differ from other local governments in Tanzania, particularly in terms of resource availability, organizational structure, and external challenges. Additionally, the study primarily relied on self-reported data, which may be subject to bias or inaccuracies in reflecting actual procurement practices.

6.3 Areas for Further Study

Future research could explore similar investigations across a broader range of local government authorities in Tanzania to enhance the generalizability of findings. Comparative studies between urban and rural councils, as well as across different sectors such as healthcare, education, and infrastructure, would provide a more comprehensive understanding of how staff competence influences procurement performance. Furthermore, longitudinal studies tracking the long-term effects of training programs on procurement outcomes would provide deeper insights into the sustainability and effectiveness of capacity-building initiatives in local government procurement practices.

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The Influence of Strategic Supplier Partnership on Healthcare Performance: Experience from Ministry of Health, TANZANIA

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Abstract

Organizations face challenges in maintaining strong supplier relationships that directly impact their overall performance. Ineffective strategic partnerships with suppliers can lead to disruptions in service delivery, inefficiencies in procurement processes, and reduced competitiveness. The study determined the influence of Strategic Supplier Partnerships on healthcare performance, with a focus on the Ministry of Health. Methodologically, a descriptive research design was employed, involving 163 respondents. Data were collected using questionnaires and interviews, and the analysis was conducted using quantitative data analysis and regression methods through SPSS. The findings highlighted key elements that significantly impact organizational performance across various areas. Strategic supplier relationships are influenced by factors such as commitment, execution, collaboration, and trust. The study found a positive correlation between these relationships and organizational performance, reinforcing their importance. The study concluded that organizations can foster stronger partnerships by recognizing the critical roles of commitment, collaboration, and trust in strategic supplier relationships. It emphasizes the need for organizations to prioritize customer satisfaction, strengthen supplier relationships, improve information-sharing processes, and streamline supply chain and procurement management. These efforts are essential for maintaining competitiveness and ensuring long-term performance.

Keywords: *Healthcare performance, strategic supplier partnership, performance*

1.0 Introduction

In today's quickly changing world economy, efficient management of the supply chain is essential for organizational achievement, particularly within the healthcare sector. As multinational corporations expand and globalization accelerates, the reliance on strong supply chain strategies becomes critical for maintaining competitiveness and efficiency of operations (Warrier, 2020). This is especially true in healthcare, where the timely delivery of medical commodities and services is vital for patient care. However, the complexities and high costs associated with the healthcare supply chain, coupled with reliance on various stakeholders, pose significant challenges that can hinder optimal service delivery (Ruhago et al., 2022). One promising approach to mitigate these challenges is the establishment of strategic supplier partnerships, which can enhance collaboration streamline processes, and influence organizational performance positively (Refera, 2019).

The concept of strategic supplier partnership (SSP) transcends traditional transactional interactions, focusing instead on collaborative alliances that enhance mutual value creation (Tarigan et al., 2020.) These partnerships involve a commitment to long-term relationships, shared goals, and joint problem-solving, which can lead to significant improvements in operational efficiency, innovation, and responsiveness to market demands. The significance of strategic supplier partnerships lies in their potential to enhance various dimensions of organizational performance (Chae et al., 2017). By aligning closely with suppliers, firms can tap into new capabilities and knowledge that may not be available internally. This collaborative approach allows organizations to adapt more swiftly to evolving consumer demands and technological advancements, positioning them favorably in a competitive marketplace (Ghadimi et al., 2018). Trust and communication are fundamental elements of successful strategic supplier partnerships. Trust fosters an environment where both parties feel secure in sharing sensitive information, leading to more effective problem-solving and innovation (Tarigan et al., 2020). Open lines of communication ensure that both suppliers and organizations remain aligned in their objectives, facilitating quicker responses to market fluctuations and operational challenges (Mitrega., 2017).

Globally, healthcare systems are under constant pressure to deliver quality services efficiently and effectively (Mathur et al., 2018). One critical aspect of healthcare performance is ensuring the availability of essential medicines and medical supplies, which directly impacts patient care and outcomes. However, many healthcare systems worldwide, especially in low and middle-income countries, struggle with supply chain inefficiencies that lead to frequent stockouts, delayed deliveries, and overall poor performance (Goodarzian, et al., 2021). These challenges often result from weak supplier relationships, poor coordination, and inadequate infrastructure, which collectively undermine healthcare performance.

In Africa, the healthcare sector faces even greater challenges, exacerbated by economic constraints, political instability, and insufficient infrastructure. Many African countries experience frequent medicine shortages, leading to disruptions in healthcare services and deteriorating patient outcomes (Jæger et al., 2021). The World Health Organization (WHO) has noted that Africa carries a significant disease burden, but healthcare systems across the continent often struggle to meet patient needs due to unreliable medicine supplies. Supply chain disruptions, high procurement costs, and a lack of strategic collaboration between healthcare providers and suppliers have further compounded the problem (Kessy et al., 2022). As a result, healthcare facilities across the continent are frequently unable to meet demand, leading to preventable deaths and prolonged suffering.

In Tanzania, the healthcare system faces similar challenges, particularly in the area of medicine supply (Ruhago et al., 2022). Despite government efforts to improve healthcare access, many health facilities continue to suffer from frequent stockouts of essential medicines and medical supplies (Kessy et al., 2024). These supply failures have significantly undermined healthcare performance, leading to inefficiencies, increased patient wait times, and reduced quality of care (Mwaiseje and Mwangi, 2019). One of the major contributing factors to these failures is the lack of effective strategic supplier partnerships, which are essential for ensuring a reliable and timely supply of medicines and medical equipment.

This study focuses on examining the influence of strategic supplier partnerships on healthcare performance in Tanzania. By investigating the impact of these partnerships, particularly in addressing medicine supply failures, the study aims to identify strategic supplier partnerships as the key factors that can enhance healthcare performance. Tanzania serves as an important case study for examining these issues, guided by comprehensive policies aimed at ensuring equitable access to quality healthcare services (Al-Madi et al., 2021). By analyzing current practices and identifying areas for improvement, the findings inform policymakers about effective strategies to enhance supply chain efficiency, demonstrating how strategic collaborations can lead to better health outcomes for citizens (Khan, 2015).

2.0 Literature Review

2.1 Theoretical perspectives

This study is governed by the resource-based view (RBV) which provides a foundational framework for understanding how firms can achieve competitive advantage through the effective management of internal and external resources (Barney, 1991). Within this context, strategic supplier partnerships emerge as vital resources that can enhance organizational performance (Ghadimi et al., 2018). By cultivating strong relationships with suppliers, firms can tap into unique competencies and capabilities that these partners offer, such as advanced technologies, innovative practices, and specialized knowledge. This synergy not only bolsters a firm's resource

base but also enables it to respond more adeptly to market dynamics, thus enhancing its overall competitive positioning.

Key variables such as collaboration, trust, commitment, and sufficient execution play critical roles in the effectiveness of strategic supplier partnerships. Collaboration facilitates the sharing of information and resources, leading to joint innovations and streamlined processes. Trust, on the other hand, reduces transaction costs and fosters a cooperative environment, allowing for more effective problem-solving and risk management (Tarigan et al., 2020). When both parties demonstrate commitment, it deepens the relationship, encouraging investments in joint initiatives that can drive efficiency and product quality. These relational dynamics are instrumental in transforming supplier partnerships into strategic assets that contribute significantly to enhanced organizational performance. By integrating these variables collaboration, trust, commitment, and execution firms can leverage strategic supplier partnerships not only to optimize their operations but also to innovate and adapt, thereby securing a more favorable position in the competitive landscape.

2.2 Empirical review

2.2.1 Strategic Supplier Partnership on Organizational Performance

A study by Fikadu (2018), examined the variables affecting the success of Ethiopia's Public Financial Services Authority, placing a focus on technology and supplier collaboration methods. They conducted a study with PFSA workers using multiple regression analyses, and the results showed that supply chain performance and relationships with startup suppliers were positively correlated. Likewise, Samuel et al. (2018) explored the relationship between organizational success and strategic procurement in East Java, Indonesia, including 80 enterprises. Through supplier connections and negotiation methods, they discovered that strategic procurement had a direct impact on performance through the use of a questionnaire and the partial least squares approach. The study concluded that the company could profit from the adoption of strategic purchasing inside the organization. Apart from the significance of strategic purchasing, the development of a suitable buyer-supplier relationship and the implementation of an adequate negotiation strategy also contribute to the performance of the organization. Furthermore, Khan et al. (2015). They looked into how the supply chain could be made better by integrating information and encouraging relationships between buyers and suppliers. Their study, which used structural equation modeling and involved more than 200 Chinese manufacturing companies, found that supplier-buyer collaborations and information integration have a favorable impact on the supply chain's efficiency. Moreover, guanxi, or social connections, and trust are essential for sustaining robust partnerships between companies and their suppliers.

3.0 Research Methodology

3.1 Research Design and Study Area

In this study, a descriptive research methodology was employed to gather comprehensive data on a particular circumstance and to develop a deep grasp of the topics under investigation. This study is conducted at the Ministry of Health in Tanzania, which plays a central role in coordinating and overseeing the delivery of healthcare services across the country. The Ministry is responsible for managing the procurement, distribution, and availability of essential medicines and medical supplies, making it a critical stakeholder in the healthcare supply chain. Given the widespread challenges of medicine shortages and supply chain inefficiencies affecting healthcare performance, selecting the Ministry of Health as the study area is highly relevant.

3.2 Target population and sample

The researcher chose a sample from this group to ascertain the study's conclusions. The study's participant population included all Ministry of Health (MOH) employees who work in the supply chain departments: warehouse, store, distribution, procurement, user department, accounting, and management team. The study's total population was made up of about 275 employees. According to Pandey, Prabhat, and Pandey (2014), a sample is a representative subset of the population that enables the researcher to get precise data. Staff members chosen from Tanzania's Ministry of Health's supply chain management divisions made up the study's sample. By applying Slovin's formula and setting a 5% margin of error, the sample size was 163 staff. Purposive sampling was employed to select respondents from different departments within the ministry based on their expertise and experience in the procurement and supply chain of healthcare facilities. The only factors considered are the researcher's expertise and judgment. The results should be extremely precise because the researcher's expertise aids in the sample's design (Pandey, Prabhat & Pandey, 2014).

3.3 Data collection method

This study employed a questionnaire as the primary data collection tool, a method deemed convenient and effective for reaching a large number of respondents. As Downs (2017) noted, questionnaires are commonly used in research to gather important information about specific populations, allowing researchers to systematically compare and contrast responses. The structured nature of questionnaires helps ensure consistency in data collection, minimizing researcher bias and providing high-quality, reliable data that can be used to draw meaningful conclusions. A key feature of the questionnaire used in this study is the incorporation of a 5-point Likert scale, which allows respondents to express the degree of their agreement or disagreement with specific statements related to strategic supplier partnerships and healthcare performance. The Likert scale, which typically ranges from 1 (strongly disagree) to 5 (strongly agree), was used.

3.4 Data analysis

Descriptive statistics were employed in this study to analyze the data collected from the questionnaire. Descriptive statistics are essential in summarizing and organizing the data, making it easier to interpret the patterns and trends within the responses. The study used measures of central tendency, such as the mean (average), to summarize the overall trends in the responses. For example, the mean response to a Likert scale question about the reliability of medicine supplies might indicate the general perception of supply chain efficiency among healthcare providers. The median and mode were also calculated to further understand the most common responses and whether the data were skewed in any particular direction. Furthermore, in addition to descriptive statistics, inferential statistics linear regression analysis is used to further investigate correlations and make conclusions from the data. The study's objective was to examine how the independent and dependent variables related to one another.

4.0 Study Results and Findings

4.1 Descriptive Analysis of Strategic Supplier Partnership on Organizational Performance

The findings indicated that respondents believe commitment significantly influences strategic supplier relationships and organizational performance, with a mean of 3.83 and a standard deviation of 1.147. Similarly, sufficient execution was viewed as a key factor, reflected in a mean of 3.71 and a standard deviation of 1.076. Collaboration also emerged as important, with a mean of 3.90 and a standard deviation of 1.120. Finally, strong trust was known as a crucial element, with a mean of 3.81 and a standard deviation of 1.194. Overall, these results suggest the consent of those surveyed about the effects of these factors on strategic supplier relationships.

Table 1: Strategic Supplier Partnership on Healthcare Performance

	N	Minimum	Maximum	Mean	Std. Deviation
Commitment	163	1	5	3.83	1.147
Sufficient Execution	163	1	5	3.71	1.076
Collaboration	163	1	5	3.90	1.120
Strong Trust	163	1	5	3.81	1.194
Valid N (listwise)	163				

4.2 Diagnostic Tests

The internal consistency measurement method The Cronbach's alpha measure was employed to evaluate the scale's reliability. A Cronbach's alpha of higher than 0.6 indicates that the internal consistency of the scale's components is poor. However, when Cronbach's alpha is more than 0.7

but less than 0.8, it implies good internal consistency. Finally, strong internal consistency is indicated by a Cronbach's alpha of more than 0.8 and less than 0.9 (Castillio, 2009).

Table 2: Reliability Statistics

Cronbach's Alpha	N of Things
.951	5

Source: SPSS Output 2024

Table 2 of the SPSS findings showed that the Cronbach's alpha for the four variables was 951. Commitment, Adequate Execution, Collaboration, Solid Trust, and organizational performance were the four factors with Cronbach alpha values more than 0.7. The data's satisfactory internal consistency demonstrated their reliability, allowing for the confident performance of additional research.

4.3 Regression Analysis

The purpose of the study was to examine the linkages that exist between supplier relationships, customer encounters, information sharing, and organizational performance. Regression analysis was used to evaluate the connection between the dependent and independent variables.

Table 3 Model Summary

Model	R	R Square	Adjusted R Square	Std. Slip-up of the Measure
1	.841a	.708	.706	.61325

a. Pointers: (Steady), Strategic supplier relationship

Source: SPSS Output 2024

Table 3 presents the results. An R-value of 0.841 shows a strong positive correlation between the performance of the company and strategic supplier relationships. Strategic supplier relationships account for around 70.8% of the variance in organization performance, with the error term accounting for the remaining 61.3%, according to the R-squared value of 0.708. This shows that the data and the model match properly.

Table 4 Analysis of variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	146.858	1	146.858	390.505	.000 ^b
	Residual	60.548	161	.376		
	Total	207.406	162			

a. Subordinate Variable: Organization execution

b. Indicators: (Consistent), Strategic supplier relationship

Source: SPSS Output 2024

The results shown in Table 4 confirm the general regression model's applicability for the provided data. The significance of the data is shown at the 5% level of significance by the ANOVA (F-statistic) value of 390.505 and the associated probability value of .000 ($F = 390.505$, $p = 0.000$).

Table 5 Coefficients

		Unstandardized Coefficients		Standardized Coefficients	
Model		B	Std. Error	Beta	t
1	(Constant)	.404	.183		2.210
	Strategic supplier relationship	.913	.046	.841	19.761

a. Dependent Variable: Organizational performance

Source: SPSS Output 2024

5.0 Discussion

The study's findings highlight that strategic supplier relationships, as measured by factors such as commitment, sufficient execution, collaboration, and strong trust, have a positive impact on organizational performance. Specifically, organizations should prioritize fostering commitment among all stakeholders in supplier relationships and focus on the effective execution of supplier management strategies. This emphasis on commitment and execution can lead to better

collaboration, communication, and problem-solving, ultimately improving organizational outcomes. The study's findings revealed a mean score of 3.83 and a standard deviation of 1.147, indicating that respondents generally agreed that commitment significantly influences strategic supplier relationships and organizational performance. This suggests that commitment is seen as a key factor in shaping strategic supplier partnerships, which in turn enhances organizational success. Organizations are, therefore, encouraged to foster a strong sense of commitment among all parties involved in their supplier relationships to achieve improved performance.

The findings align with the work of Doe and Johnson (2023), who stressed the importance of commitment in mitigating risks within supplier relationships and enhancing alliance performance. They argued that committed partners are more likely to invest resources, share knowledge, and collaborate effectively, which leads to stronger alliance outcomes. This suggests that organizations should prioritize building committed relationships with their suppliers to ensure long-term success and stability.

Further findings showed a mean of 3.71 and a standard deviation of 1.076; this indicated that respondents agreed that sufficient execution is among the factors which influence strategic supplier relationships toward organizational performance. The finding implies that respondents perceive sufficient execution as a significant factor in shaping strategic supplier relationships, which subsequently impacts organizational performance positively. Therefore, organizations should prioritize ensuring the effective execution of strategies and processes related to supplier management to enhance overall performance. Finding aligns with Handfield et al., (2019), who emphasize the significance of execution excellence in supplier relationship management, particularly in the context of achieving strategic objectives. They argue that organizations must develop the capability to execute strategies effectively, ensuring alignment with supplier requirements and fostering collaborative partnerships that drive mutual value creation.

Also, findings showed a mean of 3.90 and a standard deviation of 1.120. This indicated that respondents agreed that collaboration is one of the factors that influence strategic supplier relationships and organizational performance. This finding implies the critical role of collaboration in shaping strategic supplier relationships and driving organizational performance. Organizations prioritize fostering collaborative partnerships with suppliers to capitalize on the benefits of enhanced cooperation, communication, and joint problem-solving.

These findings align with Monczka (2015), who argues that collaborative partnerships enable organizations to leverage the expertise and resources of their suppliers, resulting in increased efficiency, flexibility, and innovation, which ultimately contribute to enhanced organizational performance.

Likewise, findings showed a mean of 3.81 and a standard deviation of 1.194; this indicated that respondents agreed that strong trust is among the factors that influence strategic supplier

relationships toward organizational performance. The finding implies the significance of trust in shaping strategic supplier relationships and driving organizational performance. The trust serves as a foundation for effective collaboration, cooperation, and mutual value creation between buyers and suppliers, ultimately contributing to improved performance and competitiveness. Findings aligned with Kosgei and Gitau (2016), who emphasize the importance of trust in interfirm relationships, particularly in strategic alliances and supplier partnerships. They argue that trust enables partners to rely on each other, share sensitive information, and collaborate effectively, ultimately leading to improved performance and competitive advantage.

The idea that an organization's strategic supplier connections and performance are favorably and strongly connected is supported by other study ($B = 0.913$ and $p\text{-value} = .000$). According to this, when a key supplier relationship is altered, an organization's performance increases by an average of 0.913 units. These findings align with those of Monczka (2015), who emphasized the strategic importance of supplier relationships in improving organizational performance through higher levels of quality, cost reduction, and inventiveness. As a result, the statistical findings demonstrate a favorable correlation between strategic supplier partnerships and organizational success.

6.0 Conclusion, Implication & Limitation of study

6.1 Conclusion

The study investigated the influence of strategic supplier partnerships on healthcare performance, with a focus on the Ministry of Health in Tanzania. The findings indicated that key factors such as commitment, sufficient execution, collaboration, and trust significantly affect the success of strategic supplier relationships, which in turn influence organizational performance. The positive correlation between these elements and organizational outcomes highlights the importance of nurturing strong supplier partnerships to improve efficiency, service delivery, and overall performance. In conclusion, healthcare organizations, especially in Tanzania, should focus on strengthening their supplier relationships to address ongoing challenges such as medicine shortages and supply chain inefficiencies, which are detrimental to healthcare performance.

6.2 Practical implication

The study presents several practical implications for organizations seeking to enhance their performance through better supplier management. Firstly, organizations should prioritize commitment and effective execution in supplier relationships. Long-term partnerships based on shared goals foster deeper collaboration, communication, and joint problem-solving, leading to better performance outcomes. Additionally, fostering collaboration and trust with suppliers is essential. By encouraging cooperative partnerships, organizations can ensure better information

sharing, joint decision-making, and quicker problem resolution, which ultimately leads to improved organizational performance. For healthcare institutions, particularly, strengthening supply chain management practices will help address key issues like medicine shortages and delays, thus improving overall service delivery.

6.3 Managerial Implications

The study highlights key managerial implications for enhancing organizational performance through supplier management. Managers should focus on developing long-term relationships with suppliers, emphasizing commitment and shared goals. This requires strategic planning to identify suppliers that align with the organization's objectives. Implementing collaborative practices, such as joint problem-solving workshops and regular communication, fosters trust and improves supply chain efficiency. Additionally, investing in training programs for negotiation and relationship management equips employees with necessary skills. Establishing clear performance metrics for supplier management enables organizations to track partnership effectiveness and make informed decisions.

6.4 Social Implications

Socially, strengthening supplier relationships cultivates trust and collaboration that positively impacts community relations. Improved supply chain practices, particularly in healthcare, enhance access to medical supplies, addressing critical issues like shortages and delays. As organizations expand their networks, they may create new job opportunities, benefiting local economies. Furthermore, collaboration with suppliers can promote ethical sourcing and sustainability, influencing societal norms and consumer expectations for responsible business conduct.

6.5 Theoretical Implications

Theoretically, this study contributes to supplier relationship management literature by highlighting the roles of commitment and collaboration in impacting performance. It supports behavioral theories related to trust and cooperation, indicating that psychological factors are

crucial in supplier interactions. Additionally, the research informs frameworks on supply chain resilience, showing how strong supplier relationships enhance adaptability in crises. Linking collaborative relationships to specific outcomes, the study encourages the development of new performance measurement models that incorporate relational metrics alongside traditional financial assessments.

6.6 Study Limitations

Despite the valuable insights gained, the study has notable limitations. Firstly, the geographical focus is limited to Tanzania, specifically within the Ministry of Health, which restricts the generalizability of the findings to other sectors or countries with different supply chain dynamics. Secondly, the sample size of 163 respondents, while adequate for the context, may not fully capture the diversity of perspectives across various healthcare institutions or industries.

6.7 Areas for Further Study

There are several potential areas for future research. One direction could involve expanding the scope to include sectors beyond healthcare, such as manufacturing, to assess how strategic supplier partnerships influence performance in different industries. Additionally, further research could explore the impact of relationship management practices, such as conflict resolution and communication strategies, on the effectiveness of supplier partnerships and overall supply chain performance.

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Effects of management support towards green recycling adoption among slaughterhouse processing industry in Dodoma City, Tanzania

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Abstract

This study aimed to determine the effects of management support towards green recycling adoption among the slaughterhouse processing industry in Dodoma city. The study employed a cross-sectional design using interviews, questionnaires, Observation, and documentary reviews. Data was collected from 78 respondents in three slaughterhouses namely; Kizota, Veta, and Msalato. The study used non-probability sampling techniques specifically purposively sampling as it involved key respondents who were animal owners and workers of slaughterhouses. The data were analysed using binary logistic regression and descriptive analysis. Results revealed that, recycling facilities variable had an odds ratio (OR) of 3.5304 ($p=0.009$) suggests that animal owners with access to recycling facilities are approximately 3.5304 times more likely to adopt these practices compared to those without access. On the other hand, training variable had an odds ratio (OR) of 2.2958 ($p=0.006$) suggests that animal owners with training are approximately 2.2958 times more likely to adopt these practices compared to those without training. Furthermore, financial resources had an odds ratio (OR) of 3.1960 ($p=0.001$) indicates that animal owners with financial resources are approximately 3.1960 times more likely to adopt these practices compared to those without financial resources. The study recommends allocation of infrastructure facilities, financial resources, incentives, training and promote market development to support the implementation of green recycling initiatives in slaughterhouses industry in Dodoma city and all over Tanzania. The rationale for this study was rooted in the urgent need to mitigate the environmental impacts of slaughterhouse waste and to promote sustainability within the industry.

Keywords: *Green recycling, Slaughterhouses, Adaptation determinants*

1.0 Introduction

1.1 Background information

Globally, recycling is used to address the challenges of waste management particularly, limiting the amount of waste sent to landfills and mitigating environmental issues from open burning and

uncontrolled disposal, which have negative effects on the environment and public health (Godfrey et al., 2020). Across different industries, there has been a global trend in the 21st century toward environmentally friendly and sustainable methods (Lutfi et al., 2023). Different businesses in the world are adopting green initiatives at an increasing rate due to increased worries about climate change, resource depletion, and environmental deterioration (Jasin et al., 2023). For Small and Medium-size Enterprises looking to diminish their ecological footprint and line with global sustainability goals, adopting green recycling techniques has become a priority.

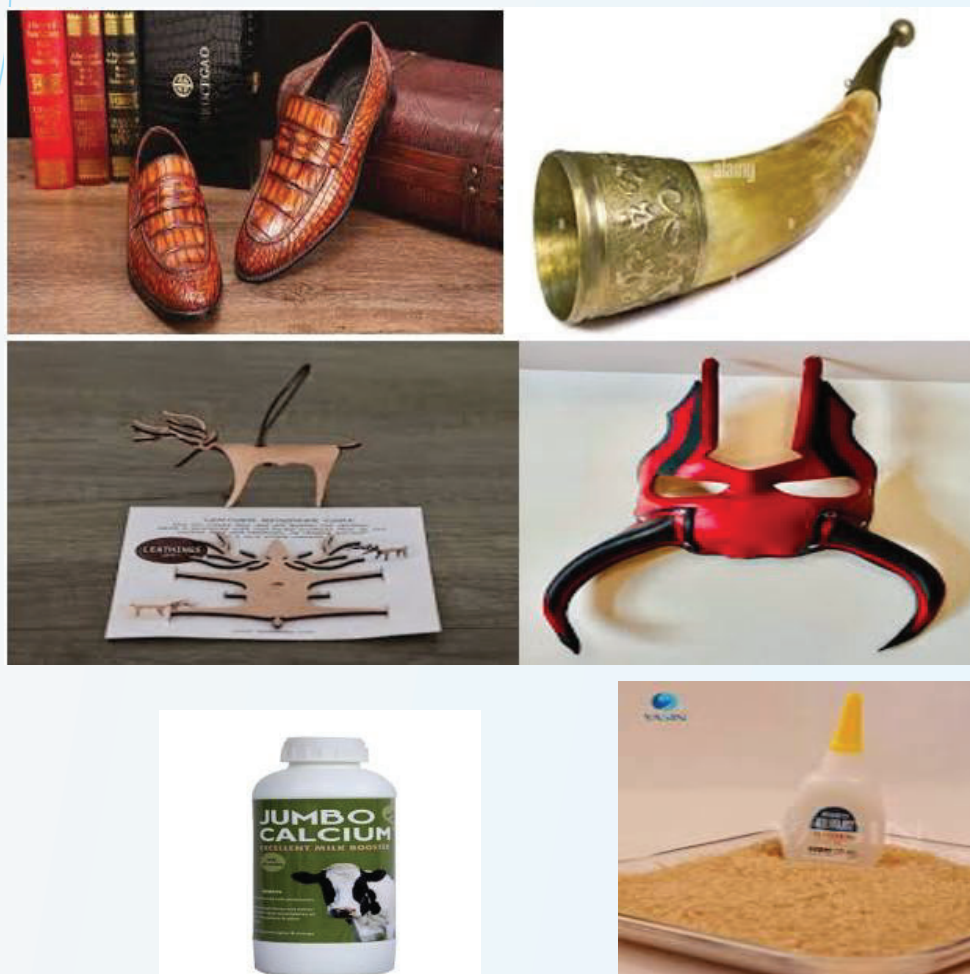
Africa in particular, environmental problems are made worse by the fast-paced urbanization and industrialization of the region. African are realizing the importance of incorporating sustainable practices into their business operations, particularly those in the Agri-processing industry (Andersen et al., 2022). A key component of sustainable waste management is green recycling, which is especially important for protecting Africa's varied ecosystems and mitigating the negative environmental effects of economic activity (Akinyi & Kathambi, 2023).

The rapid urbanization of Africa explicates the need for urgency in reviewing and equipping the waste management infrastructure by adopting the 3Rs (Reduce, Re-use, and Recycle) paying more attention on recycling (Ogutu & Kathambi, 2022). Moreover, recycling can be the first step toward sustainable development because of the high rate of population increase in Africa, the continent's increasing urbanization which is expected to reach 160 million tons by 2025 (Abubakar, 2020).

East Africa, Tanzania is experiencing economic growth and industrial development. The agricultural and Agri-processing sectors, such as the slaughterhouse industry, play a crucial role in the country's economy (UNIDO, 2022). With an increasing focus on sustainable development, there is a growing imperative for industries in Tanzania, including slaughterhouses, to adopt green recycling practices. This is not only driven by global trends but also by the recognition of the local environmental challenges faced by the nation (Palfreman, 2018).

Green recycling refers to the process of collecting, processing and re-use of waste materials that would otherwise be discarded as waste and create negative impacts to human health and the environment if left un-attended. It involves providing alternative uses such as by-products can be making a variety of products like gelatin, glues, fertilizers, pet food, calcium nutritional supplements for animal decorative items, tools musical instruments. Furthermore, skin can be used to make clothing, shoes, furniture also manure to make biogas (Mozhiarasi & Sivakumar, 2022). Some of the products made from green recycling are shown by Figure 1.

Figure 37: Green recycling products



In Dodoma Tanzania, being it a capital city it represents a significant hub for economic activities, including the Agri-processing industry (URT, 2023). Since, Dodoma undergoes urbanization and industrial growth, there is a need to address the environmental implications of industrial processes particularly, in sectors like slaughterhouse processing (Seluhinga, 2022). However, the green recycling has not been adopted in slaughterhouse in Dodoma city and disposal of animal byproducts are done in environmentally unfriendly manner as shown in Figure 1. By understanding the dynamics of green recycling adoption among slaughterhouse industry in Dodoma, it is crucial to promote sustainable practices at the local level (URT, 2019).

Figure 38: Current dumping practices for animal by-products from slaughterhouses in Dodoma city



Moreover, the Agri-processing sector like slaughterhouse processing, is known for generating significant waste streams that can have adverse environmental effects if not managed properly (Mozhiarasi & Sivakumar, 2022). SMEs in Dodoma is likely to face challenges and opportunities in adopting green recycling practices (Lwesya, 2021).

1.2 Statement of the problem

In Tanzania, the slaughterhouse processing business is a major contributor of the region's economy. However, slaughterhouse processing businesses are facing serious environmental problems that stem from waste management. (Nyampundu et al., 2020). Despite the government of Tanzania to come up with different regulations in environmental conservation for public health including slaughterhouse practices, still there is a problem with the implementations of effective adoption of green recycling practices especially in slaughterhouses including poor disposal of animal byproducts like horns, skin and hooves (Ogutu & Kathambi, 2023). Moreover slaughterhouse often operate with limited resources, making it challenging to invest in the necessary infrastructure and technologies required for efficient green recycling and also the increasing costs in implementing eco-friendly practices act as a limiting factor (Gamba et al., 2019). Although past studies have made effort in addressing issues of green procurement practices, most of them concentrated to study the challenges of green procurement in a general perspective and ignored to address the practices and challenges used in animal slaughterhouse processing as an area that has a unique structures, procedures and conditions.

Therefore, this study intended to fill the knowledge gap by determining the influence of management support toward effective implementation of green recycling practices.

2.0 Methods

2.1 Study Area

The study was conducted in Dodoma City, Tanzania involved three slaughterhouse processing industry which are Kizota, VETA and Msalato slaughterhouse. As a capital City of Tanzania, is experiencing economic growth, urbanization and economic activities, including the agro-processing industry which facing a serious environmental problems stem from waste management. (Nyampundu et al., 2020).

2.2 Research Design

This study employed a cross-sectional design. This design was preferred by the researcher as it allowed to collect data on more than one case at a single point in time and detection of patterns of association among variables. According to (Kothari & Garg, 2019), research design is the conceptual blueprint that guides the execution of the research, encompassing the strategy for data collection, measurement, and data analysis.

2.3 Research Approach

Mixed research approach combines both qualitative and quantitative data, the qualitative data were opinions, and altitude of the respondents while quantitative data were from the answers in the questionnaire like age, number of experts in green recycling in the study area and etc.

2.4 Population and sample size

The population for this study comprised all animal owners and government employees working in the three selected animal slaughterhouses in Dodoma City which amounted to 78 people whole population. According to Human resource officers at slaughterhouse processing industries in Dodoma City, there were 78 registered animal owners. In Kizota, there were (53), VETA abattoir (15) and Msalato slaughterhouse (10) as shown in Table 1. The formula for sample size was not applied rather than involved all 78 purposely as shown in the Table below and the key informants who are trade officer, livestock officer, representative of the Tanzania meat Board, Health officer public and environmental officer- Public servants was for gain additional information.

Table 48: Sample size of all respondents

No	Respondents	Sample size
1	Kizota Abattoir animal owners	53
2	VETA abattoir animal owners	15

3	Msalato slaughterhouse animal owners	10
	Total	78

2.5 Data Collection Methods

Data were collected through interview, observation, questionnaire and documentary review. The use of multiple data collection methods helped in triangulation of the information received from each of the data collection methods.

2.6. Data analysis

Data were analysed using descriptive, inferential statistics. The data were quantitatively analysed with the help of the computer software Statistical Package for Social Sciences (SPSS) and Stata. The quantitative methods applied were descriptive and inferential statistics to assess the adoption of green recycling practices among slaughterhouse processing industry in Dodoma City, Tanzania. Descriptive statistics in frequency were used to explain the demographic information of animal owners and dependent variables as well as challenges. Then, inferential statistics employed the binary logistic regression model assesses the adoption of green recycling practices among slaughterhouse processing industry in Dodoma city at 0.05 level of significance, Tanzania. It is important to note that before performing the logistic regression Model, the 5-point Likert scale data on adopting green recycling practices were transformed into an index scale using the overall mean scores. Thus, the mean score greater or equal to the overall mean was termed high green recycling practice while the score below the overall mean was termed as low green recycling practice.

3.0 Results and Discussion

3.1 Description of the Respondents' Demographic Characteristics

This section serves as a foundational exploration into the demographic profile of the respondents, offering insights into the distribution of key demographic factors within the study population. The analysis of demographic characteristics as shown in Table 2 was crucial as it provided a contextual understanding of the sample population which was essential for interpreting subsequent findings and drawing meaningful conclusions. By examining demographic variables such as gender, age, marital status, and education level, this study aims to contextualize the research findings within the demographically context of the study population, thereby enhancing the overall understanding of the factors influencing the adoption of green recycling practices among slaughterhouse in Tanzania.

Table 2: Demographic characteristics of animal owners

Characteristics	Frequency (f)	Percent (%)
Gender		
Male	72	92.3
Female	6	7.7
Age		
18- 27 years	1	1.3
28-37 years	9	11.5
38-47 years	21	26.9
48+ years and above	47	60.3
Education Level		
Primary level	9	11.5
Secondary level	67	85.9
Collage level	2	2.6
University level	0	0.0
Marital status		
Single	5	6.4
Married	69	88.5
Divorced	4	5.1
Other	0	0.0

Source: Field Data, 2024

The demographic characteristics outlined in Table 2 provide valuable insights into the composition of the respondent population and shed light on their gender distribution, age demographics, educational background, and marital status. In terms of gender representation, the data reveal a notable gender disparity, with the majority of respondents being male (92.3%), while females accounted for a significantly smaller proportion (7.7%). Examining the age distribution of respondents, the data indicate a predominance of older individuals, with 60.3% falling within the

48 years and above. Regarding educational background, majority of the respondents in this study had completed secondary education (85.9%), indicating a relatively high level of educational attainment within the population as shown in Table 2. Marital status among respondents revealed that the majority number of the respondents were married (88.5%), while smaller proportions were not married (6.4%) or divorced (5.1%) as shown in Table 2.

3.2 Effects of management support towards green recycling adoption among slaughterhouse processing industry in Dodoma City.

Table 3: Logistic Regression Analysis

Green recycling	Coef.	Odds Ratio	z	P>|z|
Recycling facilities				
Yes	1.2614	3.5304	10.274	0.009
No (Reference)				
Financial resources				
Yes	1.1619	3.1960	13.011	0.006
No (Reference)			1	
Training				
Yes	0.8311	2.2958	12.05	0.001
No (Reference)				
Constant	.069	.52367	0.4214	0.000
Number of observations = 78 LR Chi2(3) =66.025				
Prob > Chi2 = 0.000		Pseudo R2 = 0.5971		

Source: Authors compilation from STATA 17

The binary logistic regression analysis aimed at determining the management support effects towards green recycling adoption among animal owners in Dodoma City as shown in Table 3. The analysis includes several predictor variables related to management support: "Recycling facilities," "Financial resources," and "Training," along with their corresponding coefficients, odds ratios, z-values, and p-values. Additionally, the table provides information on the constant term, number of observations, likelihood ratio chi-square statistic, probability associated with the chi-square statistic, and pseudo-R-squared value. Starting with the "Recycling facilities" variable, the coefficient of 1.2614 indicates that for every one-unit increase in the availability of recycling facilities ("No" and "Yes"), the log-odds of adopting green recycling practices increase by 1.2614 units. The odds ratio of 3.5304 suggests that animal owners with access to recycling facilities are approximately 3.5304 times more likely to adopt these practices compared to those without access. The associated z-value of 10.274 and p-value of 0.009 indicate that this effect is statistically significant at the 0.05 level, highlighting the importance of recycling facilities in promoting the adoption of green recycling practices. During the interview with one of the key informants replied that:

“Our infrastructures are still poor compared to developed countries who practice green recycling, although we are receiving many animal owners who need green recycling facilities” (Key Informant, 2024). Training variable had a coefficient of 0.8311 indicates that for every one-unit increase in the training ("No" and "Yes"), the log-odds of adopting green recycling practices increase by 0.8311 units. The odds ratio of 2.2958 suggests that animal owners with training are approximately 2.2958 times more likely to adopt these practices compared to those without access. The associated z-value of 12.05 and p-value of 0.001 indicate that this effect is statistically significant at the 0.05 level, underscoring the significance of training in facilitating the adoption of green recycling practices. This was evidenced by respondents from key informants who replied:

“Most of the animal owners who get training are willing to adopt green recycling. They see the benefits in income generation, environmental conservation,” (Key Informant, 2024).

Moving on to the "Financial resources" variable, similar patterns emerge. The coefficient of 1.1619 suggests that for every one-unit increase in the availability of financial resources ("No" and "Yes"), the log-odds of adopting green recycling practices increase by 1.1619 units. The odds ratio of 3.1960 indicates that animal owners with financial resources are approximately 3.1960 times more likely to adopt these practices compared to those without financial resources. The associated z-value of 13.0111 and p-value of 0.006 indicate that this effect is statistically significant at the 0.05 level, underscoring the significance of financial support in facilitating the adoption of green recycling practices. The constant term of 0.069 represents the log odds of adopting green recycling practices when all predictor variables are zero. In support of these results, one key informant said that:

“I’m willing to adopt green recycling but when I look at the financial resources required are discouraging....” (key informant 2024)

The number of observations is 78, and the likelihood ratio chi-square statistic is 66.025, with a probability associated with the chi-square statistic of 0.000, indicating that the model is statistically significant. The pseudo-R-squared value of 0.5971 suggests that the model explains approximately 59.71% of the variance in the adoption of green recycling practices among animal owners in the study area. In summary, the results of the binary logistic regression analysis highlight the significant influence of recycling facilities, financial resources and training on the adoption of green recycling practices among animal owners in Dodoma City. These findings underscore the importance of providing adequate infrastructure, training, and financial support to promote environmentally friendly behaviours within this community.

4.0 Conclusion & Recommendations

4.1 Conclusion

In conclusion, this study provides valuable insights into the adoption of green recycling practices among animal owners in slaughterhouse operations in Tanzania. The findings highlight the management support in integrating sustainable waste management practices within this industry. Moreover, the study reveals a mixed landscape of management support towards green recycling adoption, with some aspects such as the provision of recycling facilities, financial resources and training lagging behind. Strengthening managerial commitment, investing in infrastructure, and capacity-building efforts are essential to overcome these barriers and facilitate the integration of green recycling practices within slaughterhouse operations. Ultimately, this study serves as a foundational step towards promoting sustainable waste management practices within the slaughterhouse industry in Tanzania. Continued research, collaboration, and concerted efforts are necessary to realize the full potential of green recycling adoption and foster a culture of sustainability within slaughterhouse operations in Tanzania and beyond.

4.2 Recommendations

Based on the findings of this study, the following are the recommendations for the government who are policymakers, Ministry of Livestock and Fisheries, and other stakeholders. Enhance Regulatory Frameworks: Government policymakers should strengthen environmental regulations related to green recycling practices in the slaughterhouse industry to ensure compliance and accountability. This includes setting clear standards for waste management, establishing penalties for non-compliance, and providing incentives for sustainable practices.

Provide Financial Support: Government policymakers should allocate financial resources and incentives to support the implementation of green recycling initiatives in slaughterhouses. This

could involve subsidies for equipment and infrastructure, grants for pilot projects, or tax incentives for environmentally sustainable practices.

Invest in Research and Innovation: Allocate funding for research and development initiatives aimed at advancing green recycling technologies and solutions tailored to the needs of the slaughterhouse industry.

Promote capacity building this can involve workshops, training sessions to create awareness.

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Conflict of interest

The researcher declares that there is no conflict of interest

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The Effects of Quality Assurance Measures on The Overall Performance Of Government Secondary Schools' Construction Projects In Dodoma City.

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Abstract

The study focused on assessing effects of quality assurance measures on the overall performance of government secondary schools' construction projects in Dodoma City, Tanzania. The population comprised 1473 management and staff members, with a sample size 314 respondents. Data were collected using questionnaires and interviews, with qualitative and quantitative data analysed through descriptive and inferential statistics, including binary logistic regression and Chi square. The data were quantitatively analyzed with the help of the computer software Statistical Package for Social Sciences (SPSS) and Stata. It is important to note that before performing the Logistic Regression Model, the 5-point Likert scale data on Project performance were transformed into an index scale using the overall mean scores. Thus, the mean score greater or equal to the overall mean was termed as high-project performance while the score below the overall mean was termed as lower-project performance. The Logistic regression analysis revealed that approximately 60.3% of the overall performance of government secondary schools' construction projects can be explained by the quality assurance measures alone (Pseudo R-squared = 0.603), with a highly significant LR Chi (3) (LR = 138.4, $p < 0.001$). Based on this logistic regression analysis, adherence to standards and continuous improvement initiatives are statistically significance on project performance., while Inspection frequency shows a statistically insignificant at 0.05 level of significance.

Keywords: *quality assurance measures, Project performance, Inspection frequency, adherence to standards and continuous improvement initiatives.*

1.0 Introduction

The construction industry is a vital component of national development, playing a crucial role in enhancing infrastructure and facilitating economic growth. Government-sponsored construction projects, particularly in the education sector, are essential for providing quality learning environments and contributing to the overall well-being of society (Paci-Green et al., 2020). However, the success of these projects is contingent upon effective project management, with a focus on quality management practices.

Across the globe, advanced economies have successfully leveraged QMP to achieve exceptional results in education construction projects. In Singapore for instance, where stringent quality standards are enforced, education infrastructure is renowned for its efficiency, durability, and sustainability. The meticulous application of QMP ensures that schools are not only completed on time but also adhere to high-quality standards, contributing to a positive and conducive learning environment (Tan, 2017). In Germany and Japan, the integration of advanced QMP has led to the creation of technologically advanced and resilient educational facilities. These countries prioritize quality assurance measures, resulting in construction projects that withstand the test of time and evolving educational needs (Nakano et al, 2016).

In the developing world, QMP have been instrumental in overcoming challenges associated with resource constraints and varying levels of infrastructure development (Guarara, et al., 2018). For instance, in India, the implementation of QMP in the construction of educational facilities has contributed to cost-effectiveness and timely project completion. By emphasizing quality control, Indian authorities have successfully managed to optimize limited resources and ensure the delivery of sustainable and functional learning spaces. In Sub-Saharan Africa, where infrastructure development is a critical need, countries like Rwanda have demonstrated the transformative power of QMP in education construction. Through strategic planning and rigorous quality management, Rwanda has been able to build schools that not only meet international standards but also address local needs, fostering an environment conducive to teach (De Shano-Dasilva et al., 2022).

Across the board, a commitment to regulatory compliance, stakeholder engagement, skilled workforce training, and the use of technology for efficient project monitoring have been central to successful cases of QMP in education construction projects. These factors collectively contribute to the creation of educational infrastructure that aligns with global standards and local needs. The construction industry has faced widespread criticism for its consistent delivery of low-quality construction projects. To address this issue and meet client demands, construction firms must adopt robust quality management practices (Oke, 2017). Globally, the building construction sector is recognized as a fundamental pillar upon which a country's development depends. The quality of construction projects by global firms is inherently linked to the practices they adopt. Over the past three decades, a multitude of construction companies worldwide has

encountered significant challenges, including workmanship defects, delays, and cost overruns in completing their projects.

The adoption of a Quality assurance measures culture has proven to enhance the productivity of firms on a global scale. International, regional, and local construction firms consistently strive to gain a competitive edge in building projects through customer-centric Quality Management initiatives (Alawag et al., 2023). In Africa, building collapses have been attributed to weak foundations, substandard construction materials, poor material mixing, excessive load on building strength, and inadequate testing of building strength. Many construction industries, especially in terms of productivity and quality systems, have faced criticism for prioritizing cost and time over quality in construction projects. Collapsed buildings are becoming an increasing problem, particularly in major cities under construction or renovation. Research indicates that Kenya has witnessed a high number of building collapses in the last decade due to a lack of quality control and the use of poor construction materials. In one such instance, despite a stoppage order and violation of construction regulations, work continued, leading to the eventual collapse.

In Tanzania, the Dar es Salaam building collapse in 2013 resulted in 36 fatalities, revealing poor building design as the suspected cause. The collapse was exacerbated by a shift in oversight responsibility and the disregard of approved floor plans. Substandard concrete and steel bar reinforcement further underscored the issue of quality mismanagement. The Tanzanian government has been implementing school construction projects under various programs, such as the Socioeconomic Response and Recovery Plan (TCRP) and the Secondary Education Quality Improvement Project (SEQUIP). Despite substantial funding, secondary school construction projects in Dodoma Region have experienced numerous shortcomings, including inadequate planning, non-compliance with procurement procedures, insufficient contract supervision, a lack of qualified personnel, inadequate equipment, and improper cost recording. The Government of The United Republic of Tanzania have been issuing various guidelines to ensure the quality of Secondary School Construction Projects whereby respective Council in collaboration with the School Board/School Construction Committee, are responsible for the day-to-day monitoring of works. They ensure that no material is lost, the contractor attends the site regularly and the works are done satisfactorily. The Regional Engineer/Council Engineer or supervisor of building works assigned or contracted by the Region/Council, is responsible to visit the site at least at the stages of works considered for the payments. They control the quality and progress of work, give the necessary instructions to the contractor in the school site book. The supervisor prepares the certificate of works to certify that work has been accomplished according to the standards set-up in the specifications. If they observe sub-standard work, which cannot be improved (example foundations, floor slab or block walls with weak concrete mix), they should instruct, in writing, the contractor to demolish the sub-standard work and to restart them following the technical handbook, at the contractor's expense (Education Sector Development Plan 2016/17 – 2020/21).

Despite the significant efforts of the Government of ensuring quality in construction projects, the effectiveness of quality assurance measures in the context of government secondary schools construction projects in Tanzania remains inadequately understood. According to Annual General report of the Controller and Auditor General report of 2022 for the local Government Authorities, under the classrooms, school facilities buildings and healthcare facilities projects assessed how procurement and management of building materials were done by LGAs, the capacity of LGAs in supervising projects implemented through force account method and the quality of the physical structures developed revealed payments of TZS 947.92 million made to local artisans without legally binding contracts and implementation of construction projects worth TZS 4.78 billion by 17 LGAs without preparation of bills of quantities and schedules of materials for works executed (URT, 2023). The report also noted that LGAs at lower level are not adequately staffed, primarily depending on teachers and healthcare workers. Further, using teachers and Healthcare workers as committee members to implement various Force Account construction projects which has led to the construction of substandard building structures.

Moreover, CAG Report (2022) found 10 LGAs implemented substandard construction projects due to poor workmanship and noncompliance to technical designs and specifications. Also, there were LGAs that used untreated timbers for roofing and undried timber for fabrication of doors leading to shrinking, swelling, twisting, cracking, and bending of doors over time. Similarly, report from Dodoma City revealed that the construction of Iwondo, Chipogoro, and Ipera Secondary Schools Dodoma, as part of the Secondary Education Quality Improvement Project (SEQUIP), encountered various issues in quality management. These challenges ultimately resulted into schools being constructed with subpar quality (Ras Office Dodoma, 2022)

Therefore, it is evident that the construction industry in Tanzania, faces numerous challenges that may hinder optimal project performance. One critical aspect that requires thorough investigation is the influence of quality management practices on the performance of government secondary school construction projects since there is a notable gap in the existing literature regarding how quality management practices impact the overall performance of construction projects of Government Secondary School Construction Projects.

This study aims to address the inadequate implementation of Quality assurance Practices through assessing the deficiency in the implementation of quality insurance practices within the construction processes of government secondary schools, considering Dodoma City as the area of study.

2.0 Empirical Literature Review

According to study by Hammed, Musib, & Pelumi, (2023), it was revealed that an organization with effective project quality management strategies would be more likely to fulfill the needs of clients, which could ultimately lead to client's satisfaction.

Baleche (2023), conducted research on Effects of Total Quality Management on Performance of Construction Industry in Tanzania. The findings indicate that the project's senior staff takes accountability for quality work and offers suitable and effective leadership. Based on the results, it can be said that strong leadership improves construction projects' success in Construction Company. The study suggests that policies pertaining to construction projects should include leadership.

Shirandula (2018) conducted the research on influence of total quality management practices on the performance of the construction industry in Mombasa County, Kenya. The study found that management commitment, employee involvement, continuous involvement and customer focus influences firm performance of building construction industry positively.

Oni, O.Z. and colleagues (2019) conducted research on the factors influencing quality management practices on building construction sites in Nigeria. The study revealed that top among the factors affecting quality management on construction sites both in public and private organizations in Oyo State were lack of adequate sanction by the standard assurance organization, non-implementation of the National Building Code, lack of proper inspection at every construction stage, award of contract to an unqualified contractor, Lack of construction quality control inspection program; lack of effective quality policy implementation; Inadequate personnel and craftsman training, poor specification, bribery and corruption, and professional role usurpation.

Beneficiaries are referred to as an ultimate judge of quality, beneficiaries' requirements and expectations represent the success of project outputs or deliverable. Subjective criteria are sometimes used by beneficiary to describe quality. Although, there are other dimensions that makes quality objective. Quality characteristics are to be determined by one or more metrics, which could be collected to mirror its specific objectives. Reduction of errors in the features of product quality is one its major component in quality management. This could be determined by taking account of errors and defects after using the product. High-quality products or services are results of an adequate quality management process but no just an event.

Quality management ensures that an organization, product or service consistently functions well. It has four main components: quality planning, quality assurance, quality control and quality improvement. Quality management is focused not only on product and service quality, but also on the means to achieve it. Quality management, therefore, uses quality assurance and control of processes as well as products to achieve more consistent quality. Quality control is also part of quality management. What a customer wants and is willing to pay for it, determines quality. It is a written or unwritten commitment to a known or unknown consumer in the market. Quality can be defined as how well the product performs its intended function Chen and Wu, (2019).

3.0 Methodology

This chapter presents the methodological techniques that were employed in conducting this study. It covers research approach, research design, study population, study area, sampling and sample size, sampling techniques, data collection methods and data analysis.

3.1 Research Approach

To assess the assessing effects of quality assurance measures on the overall performance of government secondary schools' construction projects in Dodoma City, Tanzania mixed research approach has been used. Mixed methods research is research design that includes both qualitative and quantitative research elements, with the aim of integrating or combining the strengths of both approaches to gain a more comprehensive understanding of the research problem (Creswell & Plano, 2018). Mixed methods research allows combining the strengths of both quantitative and qualitative approaches. By integrating these approaches, we can achieve a deeper and more comprehensive understanding of research questions than would be possible with either me.

3.2 Research Design

This research design serves as a framework for collecting and analysing data (Burns and Burns, 2008). Kothari (2004), defined research design as the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. It is the plan, structure and strategy of investigation conceived to obtain answers to research question and to control variances. This study employs a cross-sectional research design, in which data was gathered in one point in time (one month) from the school construction projects undertaken in Dodoma.

3.3 Study Population

As stated by Creswell (2009), the population refers to the specific group that holds the researcher's interest, and it is the group to which the researcher aims to extend the study's conclusions. The population encompasses all the individuals, events, or objects that share a common observable characteristic. The population of this study will include Project Stakeholders involved in the construction of government secondary schools: The population frame includes Dodoma City council officials, construction experts (Architects, Engineers, and Quantity Surveyors) and other professionals directly involved in the planning and execution of secondary school construction projects. School Administrators: Principals, teachers, and staff of the government secondary schools affected by the construction projects. Quality Management Practitioners: Individuals responsible for implementing and overseeing quality management practices in the context of construction projects, this will include Architects and Quantity Surveyors Registration Board (AQRB), Engineers Registration Board (ERB) and Public Procurement Regulatory Authority (PPRA).

3.4 Area of study

This study was conducted in Dodoma City in Dodoma region due to the fact that there is a rapid increase of construction activities in Dodoma including the Construction of Government Secondary Schools.

3.5 Sampling Techniques

This study intends to employ simple random sampling technique in drawing a representative sample of Government Officials from individuals involved in the Construction of Government Secondary Schools and experts such as Architects, Quantity Surveyors and Engineers and Heads of School where the Projects took place. Adam and Kamuzora (2008), described simple random sampling as a sampling technique whereby the total population have equal chance to compute a sample size. Simple random sampling process involve dividing the population into subgroups based on certain characteristics will be used to randomly selecting samples from different sub population of wards where the Government Secondary Schools Construction Projects have been undertaken. After stratification, respective schools within the wards were randomly selected. Dodoma City was stratified in different wards to account for potential variations in construction practices and project performance. The schools within he wards also further be Stratified by the scale of construction projects, such as small renovations, medium-sized expansions, and large-scale new constructions. Once stratification factors have been identified, data collection process include representation from each subgroup. This might involve selecting a proportional number of schools or projects from each subpopulation. In the sampling process, all members of the strata were having equal chance of selection. There population of the study comprises of 1473 individuals, thus, to draw a representative sample from the strata, the study adopts Yamane (1973) formula for proportions to determine sample size, which is as follows:

$$n = \frac{N}{1 + Ne^2}$$

Where, n is the Sample, N is the Total population of the area under study, 1 = 1 is constant, and e is the error limit or

Margin of error. It's usually accepted at 5% or 0.05. Therefore,

$$n = \frac{1473}{1 + 1473(0.05)^2} = 314$$

Thus, the study will intend to collect data from 314 respondents.

3.6 Data Collection Methods

Using interview guides, in-depth interviews conducted with a purposively selected group of Architects and Quantity Surveyors Registration Board, Engineers Registration Board and Public Procurement Regulatory Authority to gather an in-depth expert opinion. The method is preferred as it has the capacity to gather in-depth information (Kumar, 2019). The interviews will be semi-structured, allowing for flexibility to explore emergent themes.

Survey questionnaires as the main survey tool generated based on each individual research objective, which contain both closed- and open-ended questions. According to Blumberg et al. (2014), questionnaires are crucial instruments for data collecting since they accurately obtain information while taking up little time. Closed-ended questions enable respondents to react in their own terms, enabling the researcher to gather unanticipated information and strengthen the process. The answers to open-ended questions can be chosen from a list by the replies. The survey questionnaire is chosen as the quantitative data collection method for this study due to its efficiency in gathering standardized and structured responses from a large sample.

3.7 Variable Measurements and Data Analysis

3.7.1 Variable Measurements

Variable	Measurement
Quality assurance measures (Independent Variable 1)	Five – Point Likert Scale (1 = Strongly agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly disagree)
Office Layout	
Adherence to Standards	
Inspection Frequency	
Continuous Improvement Initiatives	Five – Point Likert Scale (1 = Strongly agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly disagree)

Source: Researcher (2024)

3.7.2 Transformation of Employee satisfaction

The 5-point Likert scale data on project performance were transformed into an index scale using the overall mean scores. Thus, the mean score greater or equal to the overall mean was termed as high performance while the score below the overall mean was termed low performance.

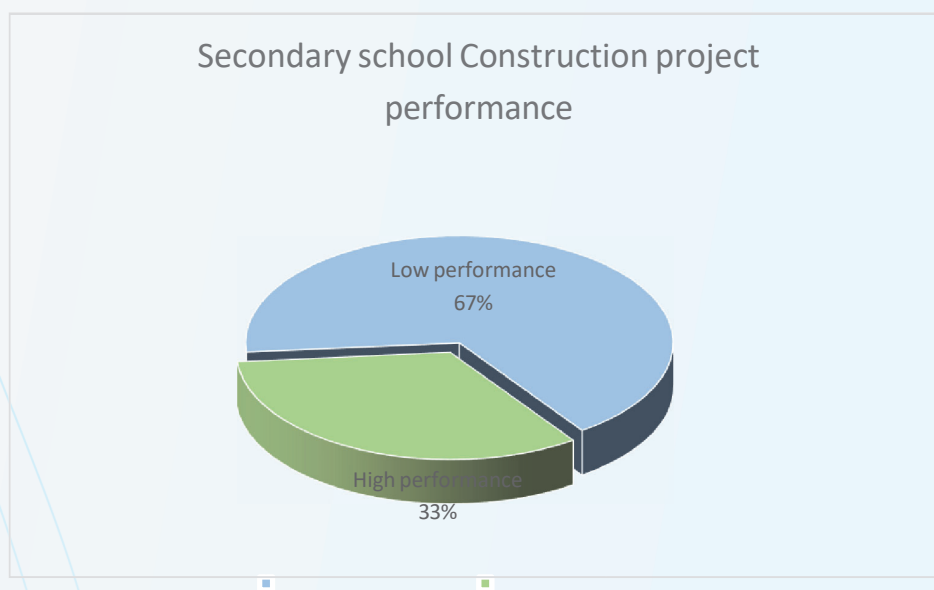
3.7.3 Distribution of Project Performance

The distribution of performance levels among secondary school construction projects, categorized into low performance and high performance, is based on certain criteria or metrics. Low Performance, out of the total projects analyzed, 88 projects, accounting for 66.67% of the sample, fall under the category of low performance.

This suggests that a significant portion of the projects did not meet the expected standards or criteria for high performance based on the evaluation criteria used. High Performance: Conversely, 44 projects, constituting 33.33% of the sample, are classified as high performance.

These projects have demonstrated excellence or superior performance according to the evaluation metrics employed. Overall, the table illustrates the distribution of project performance levels, indicating a majority of projects falling into the low-performance category. This distribution can prompt further investigation into the factors influencing performance disparities among projects, leading to targeted interventions or improvements aimed at enhancing overall project outcomes and achieving higher levels of performance across the board.

Figure 1. Distribution of Secondary School Construction Project Performance.



Source: Researcher (2024)

3.7.4 Data Analysis

Both qualitative and quantitative data analysis were employed in this study. Qualitative data analysis was supported from the information of documentary review whereas quantitative data analysis was supported statistical tools like logistic regression. Logistic regression analysis was employed to assessing effects of quality assurance measures on the overall performance of

government secondary schools' construction projects in Dodoma City. The Logistic regression equation used for this analysis encapsulates this relationship below;

$$p = \frac{e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3}}{1 + e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3}}$$

$$\text{logit}(1 - p) = 1 + e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3}$$

Where:

Logit = logistic link function

p = probability that there is the influence of quality assurance measures and overall performance of

government secondary schools' construction projects in Dodoma City.

1-p = probability that there is no influence of quality assurance measures and overall performance of

government secondary schools' construction projects in Dodoma City.

β_0 = intercept

β_1 – β_3 = parameter estimates or logit coefficients y =Project performance

X_1 – X_3 = Inspection frequency (X_1), adherence to standards (X_2) continuous improvement initiatives (X_3).

3.8 Validity and Reliability of Data

To enhance validity, a preliminary study was carried out to improve the research's credibility by testing the research tools on a small group of participants beforehand. This initial assessment was designed to verify that the tools accurately capture the desired variables.

The reliability of the data was evaluated using Cronbach's Alpha test. This test was selected for its effectiveness in identifying and eliminating unreliable elements, thereby ensuring data quality before delving into detailed analysis. A higher Cronbach's Alpha (closer to 1) indicates better reliability. Adherence to Standards, this variable shows a high level of internal consistency with a Cronbach's Alpha of 0.914, based on 5 items. It suggests that the items measuring adherence to standards are reliably measuring the same concept. Inspection Frequency, The Cronbach's Alpha for inspection frequency is 0.786, indicating a good level of internal consistency but slightly lower than some other variables in the table. Continuous Improvement Initiatives, this variable has a Cronbach's Alpha of 0.844, demonstrating a good level of internal consistency similar to

inspection frequency. Project Performance, these variables show moderate to good levels of internal consistency, with Cronbach's Alpha of 0.821.

Table 3.7.1

Physical environment		
Adherence to Standards	0.914	5
Inspection Frequency	0.786	5
Continuous Improvement Initiatives	0.844	5
Dependent variable		
Project Performance	0.821	5

3.9 Ethical Consideration

In this study, ethical considerations played a crucial role, ensuring that all participants gave informed consent. They were provided with comprehensive details about the study's objective, data collection techniques, and how their data would be used. Participants were reassured that their involvement was voluntary, and they had the right to withdraw from the study at any point without any consequences. Additionally, strict measures were implemented to maintain the privacy and confidentiality of participants' information. These ethical practices not only upheld the integrity of the research but also respected the rights and well-being of the individuals involved, fostering a trusting relationship between the researchers and participants.

4.0 Results

Before performing the effects of quality management practices on the performance of government secondary school construction, the data first were tested to see if they fit the logistic regression and then chi square applied to check for the association between quality management practices and the performance of government secondary school construction projects.

4.1 Omnibus tests of model coefficients

Quality Assurance Measures on Project Performance, with a chi-square value of 32.1153 and a p-value of 0.00, there is a significant relationship between quality assurance measures and project performance. This implies that implementing effective quality assurance practices contributes significantly to better project outcomes.

Table 3. 1 Omnibus tests of model coefficients

Logistic regression model	Chi square	Degree of freedom	significance
Quality assurance measures on Project performance	32.1153	3	0.00

4.2 Hosmer and Lemashow model test

The logistic regression model examining the Quality assurance measures on Project performance, the p- values are well above the threshold for rejecting the idea that the models fit the data well. There is no statistically significant evidence to suggest that the models' predicted probabilities of successful project performance differ from the actual observed success rates across different subgroups within the data. Based on the Hosmer-Lemeshow test, all three models appear to have a good fit with the data. This suggests that quality assurance measures might be good predictors of project performance. However, it's important to remember that this test only indicates a good fit.

Table 3.2 Hosmer and Lemashow model test

Logistic regression model	Chi square	Degree of freedom	significance
Quality assurance measures on Project performance	2.5842	4	0.551

4.3 To Examine the Association between quality assurance measures on the overall performance of government secondary schools' construction projects in Dodoma City.

The association between quality assurance measures and the overall performance of government secondary schools' construction projects in Dodoma City, with significance tested at the 0.05 level. Adherence to Standards, the chi-square value of 51.0012 with a p-value of 0.00 indicates a significant association between adherence to standards and project performance. Among low-performing projects, 44 (60.27%) did not adhere to standards, while 29 (39.73%) did. In contrast, among high-performing projects, 44 (74.58%) adhered to standards, while only 15 (25.42%) did not. This suggests that projects adhering to standards are more likely to achieve high performance.

Inspection Frequency, the chi-square value of 39.1026 with a p-value of 0.00 reveals a significant association between inspection frequency and project performance. Low-performing projects had 38 (58.46%) with low inspection frequency and 27 (41.54%) with high frequency. In contrast, high-performing projects had 50 (74.63%) with high inspection frequency and 17 (25.37%) with low frequency. This indicates that projects with higher inspection frequency tend to perform better.

Continuous Improvement Initiatives, the chi-square value of 44.6136 with a p-value of 0.00 demonstrates a significant association between continuous improvement initiatives and project performance. Among low-performing projects, 41 (62.12%) did not implement continuous improvement initiatives, while 25 (37.88%) did. For high-performing projects, 47 (71.21%) implemented such initiatives, while 19 (28.79%) did not. This suggests that continuous improvement efforts contribute positively to project performance. Overall, the significant chi-square values and low p-values across all variables indicate strong associations between quality assurance measures (adherence to standards, inspection frequency, and continuous improvement initiatives) and the overall performance of government secondary schools' construction projects in Dodoma City.

These findings underscore the importance of robust quality assurance practices in achieving high project performance standards.

Table 3.3 The Association between quality assurance measures on the overall performance of government secondary schools' construction projects in Dodoma City.

Variable	Low performance	High performance	Chi-square	P-Value
Adherence to Standards			51.0012	0.00
No	44(60.27)	29(39.73)		
Yes	44(74.58)	15(25.42)		
Inspection Frequency			39.1026	0.00
No	38(58.46)	27(41.54)		
Yes	50(74.63)	17(25.37)		
Continuous Improvement Initiatives			44.6136	0.00
No	41(62.12)	25(37.88)		
Yes	47(71.21)	19(28.79)		

Source: Fied data (2024).

c) To examine the effects of quality assurance measures on the overall performance of government Secondary schools' construction projects in Dodoma City.

These results of a logistic regression analysis examining the effects of quality assurance measures on the overall performance of government secondary schools' construction projects in Dodoma City, with significance assessed at the 0.05 level. Adherence to Standards, Projects that adhered to standards had a coefficient of 1.621, indicating that they were 2.137 times more likely to have high performance compared to projects that did not adhere to standards. The z-value of 16.434 and a p-value of 0.006 show that this relationship is statistically significant.

Inspection Frequency, the coefficient for inspection frequency was 0.3122, suggesting a slight increase in the odds of high performance for projects with more frequent inspections, although this result was not statistically significant (p-value = 0.141). Continuous Improvement Initiatives:

Projects that implemented continuous improvement initiatives had a coefficient of 1.831, indicating that they were 3.613 times more likely to achieve high performance compared to those without such initiatives. The z-value of 14.54 and a p-value of 0.000 indicate a highly significant association between continuous improvement initiatives and high project performance.

The constant term in the regression model (-0.9631) represents the log odds of high performance when all other predictors are zero. The overall model fit is indicated by the LR Chi2 value of 138.4, with a significant p-value of 0.000, suggesting that the model as a whole is a good fit for the data.

The Pseudo R2 value of 0.603 indicates that approximately 60.3% of the variation in project performance can be explained by the predictors included in the model.

Table: 3.3 Logistic Regression Analysis showing the effects of quality assurance measures on the overall performance of government secondary schools' construction projects in Dodoma City.

Project performance	Coef.	Odds	z	P>|z|
		Ratio		
Low (base outcome)				
Adherence to Standards				
Yes	1.621	2.137	16.434	0.006
No (Reference)				

Inspection Frequency				
Yes No (Reference)	0.3122	1.695	2.83	0.141
Continuous				
Improvement Initiatives Yes	1.831	3.613	14.54	0.000
No (Reference)				
Constant	-	.0565	-6.117	0.000
	0.9631			
Number of observation = 314 LR Chi2(3) = 138.4				
Prob > Chi2 = 0.000 Pseudo R2 = 0.603				

Source: Authors compilation from STATA 17

In summary, this analysis highlights the substantial impact of adherence to standards and continuous improvement initiatives on enhancing the overall performance of government secondary schools' construction projects in Dodoma City, emphasizing the importance of quality assurance measures in project management.

When the Official from the Architects and Quantity Surveyors Registration Board was Interviewed on his understanding of Quality Assurance and whether there is Adherence to Quality assurance Measures in the Construction of Government Secondary Schools Projects in Dodoma City, he responded

"Quality assurance (QA) is crucial in ensuring that projects, including construction projects, meet the required standards and specifications. It involves systematic activities and processes designed to prevent defects, ensure compliance, and enhance overall performance. However, in many Governments' Secondary school Construction Projects Quality assurance measures are not well enhanced".

5. Discussion & Conclusion

5.1 Discussion

The logistic regression analysis conducted on government secondary school construction projects in Dodoma City reveals significant insights into the impact of quality assurance measures on overall project performance. Notably, adherence to established standards emerged as a critical factor, with projects adhering to these standards being 2.137 times more likely to achieve high performance, as indicated by a coefficient of 1.621, a z-value of 16.434, and a statistically

significant p-value of 0.006. This finding aligns with the work of Zhang et al. (2021), who emphasize that adherence to quality standards is fundamental to enhancing project outcomes. Furthermore, while the analysis shows that more frequent inspections correlate with a slight increase in performance odds (coefficient of 0.3122), this relationship did not reach statistical significance (p-value = 0.141). This suggests that merely increasing inspection frequency may not improve outcomes, a point echoed by Khosravi et al. (2019), who argue that the effectiveness of inspections depends on the systematic implementation of quality assurance processes.

Moreover, the role of continuous improvement initiatives in driving project performance cannot be understated. Projects that implemented such initiatives were found to be 3.613 times more likely to achieve high performance, with a coefficient of 1.831, a z-value of 14.54, and a highly significant p-value of 0.000. This underscores the importance of fostering a culture of continuous improvement, as highlighted by Khosravi and Esfandiari (2023), who posit that continuous improvement is essential for long-term project success. The regression model itself demonstrated a strong overall fit, with an LR Chi2 value of 138.4 and a Pseudo R2 value of 0.603, suggesting that approximately 60.3% of the variation in project performance can be attributed to the examined predictors.

However, Insights from interviews further reinforce these findings. An official from the Architects and Quantity Surveyors Registration Board emphasized the importance of quality assurance (QA), stating, "Quality assurance is crucial in ensuring that projects, including construction projects, meet the required standards and specifications." He noted that while QA measures are critical, their implementation in government secondary school construction projects often falls short. This sentiment resonates with the logistic regression results, which highlight the need for robust adherence to quality assurance measures to enhance project performance. Together, these findings underscore the necessity for a more systematic approach to quality assurance in construction projects, particularly in the context of government-funded initiatives.

5.2 Conclusion

The logistic regression analysis highlights the critical role of quality assurance measures in enhancing the performance of government secondary school construction projects in Dodoma City. The significant relationship between adherence to standards and high project performance underscores the necessity for strict compliance with quality protocols, as supported by recent scholarly findings. Although increased inspection frequency did not yield statistically significant results, the importance of systematic quality processes remains evident. Moreover, the substantial positive impact of continuous improvement initiatives further emphasizes the need for a proactive approach to quality management. Insights from interviews corroborate these findings, revealing a gap in the implementation of quality assurance measures despite their

acknowledged importance. Collectively, these results advocate for a comprehensive and systematic strategy to improve quality assurance practices in construction projects, ultimately aiming for better project outcomes in the public sector.

5.3 Recommendations

These findings suggest several recommendations to enhance the performance of government secondary school construction projects in Dodoma City, several key recommendations can be made for stakeholders, including government authorities and project managers. First, the government should prioritize the development and enforcement of stringent quality assurance regulations, ensuring that all construction projects adhere to established standards. This can be achieved by providing training and resources to both government officials and construction teams to foster a culture of quality compliance. Project managers, on the other hand, should implement continuous improvement initiatives that encourage feedback and learning throughout the project lifecycle. By actively engaging with teams and stakeholders to identify areas for enhancement, project managers can cultivate an environment that supports innovation and accountability. Additionally, increasing the frequency and effectiveness of inspections, coupled with clear communication of quality expectations, will help to reinforce adherence to standards. Together, these measures can significantly improve project outcomes, ensuring that government-funded construction projects meet the desired quality benchmarks and serve the needs of the community effectively.

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Physical environment's role in shaping employee satisfaction in Tanzania: Insights from National Food Reserve Agency

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Abstract

Physical environment plays a crucial role in shaping employee satisfaction within organizations. This study assesses the influence of the physical environment on employee satisfaction at the National Food Reserve Agency in Tanzania. The study employed a cross-sectional design and quantitative approach, collecting data from a sample of 152 NFRA employees across various zones in Tanzania. Data were collected using structured questionnaires and analyzed using descriptive statistics and logistic regression. The descriptive results show that the overall mean score for employee satisfaction was moderate, with job security being the highest-rated factor. Also, the logistic regression results show a significant association between the physical environment and employee satisfaction, with office layout, cleanliness, and noise levels being significant predictors. The study results underscore the importance of the physical environment in enhancing job satisfaction in the procuring, storing and distributing food agencies like NFRA in Tanzania. The study concludes that the physical environment plays a crucial role in employee satisfaction at NFRA. Improvements in office layout, cleanliness, and noise control are recommended to enhance overall satisfaction and organizational performance. Also, it is recommended that NFRA should prioritize investments in improving the physical work environment, implement policies promoting employee well-being, and encourage active employee engagement in maintaining a conducive workplace.

Keywords: *Physical Environment, Employee Satisfaction, National Food Reserve Agency, Tanzania.*

1.0 Introduction

The over-increasing changes in globalisation, science and technology, and employee demands have occasioned an organisation's paradigm shift from traditional processes that regarded employees as working machines into new practices that regard employees as potential catalysts toward the achievement of organizational goals and vision (Armstrong, 2022). Subsequently, managers in contemporary organisations have been investing heavily on employees, principally in

providing conducive workplace environment so as to enhance employee's satisfaction and improve organisational performance. Investing in the physical workplace environment is crucial as it significantly impacts employee well-being and productivity (Linon & Swai, 2022). A well-designed and comfortable workspace can reduce stress and fatigue, leading to higher levels of engagement and efficiency (Stone, Cox, and Gavin, 2020). Additionally, a positive physical environment fosters collaboration and creativity, essential for innovation and organizational success (Murimi, 2020).

Rodríguez (2021) defines physical environment as the physical atmosphere in which organization's employees work and may perceive it as emotionally favorable or unfavorable. A favorable physical environment includes giving employees space and privacy to do their work, making the office more comfortable, and improving communication. Moreover, upholding a positive workplace environment helps boost employee morale, retention, and productivity (Lameck, 2021). Freedman (2022) argues that, physical environment for employees impacts the mood, drive, mental health and performance. If employees work in a tedious office setting with unfriendly workers, they likely won't have enough confidence or job satisfaction. A safe workplace environment has been addressed by the International Labor Organization (ILO). The ILO Constitution sets forth the principle that workers must be protected from sickness, disease and injury arising from their employment (ILO, 2022). Henceforth, organizations across the world are bound to adhere to the ILO constitution by enforcing effective policies that ensure safe and conducive workplace environment for employees.

Globally, it has been reported that a conducive physical environment for employees plays a crucial role in employees' satisfaction. In the United States of America, physical environment factors that were reported to enhance employee satisfaction include; psychosocial variables such as work demands; work organization including influence, freedom, meaning of work, and possibilities for development; interpersonal relations such as leadership and coworkers, a sense of community, role clarity, feedback, and support; and individual health and personal factors, including one's ability to cope and family supports (Donley, 2021). In Asia, evidence from Pakistan reveals that physical environment has a positive impact on the employees' satisfaction, whereby bad working conditions limit employees from showcasing their competencies and attain full potential, so it is important that organizations should realize the potential of good physical environment towards employee satisfaction and performance (Raziq & Maulabakhsh, 2015). Likewise, In China, Zhejiang et al. (2022) report that a positive physical work environment has improved employee satisfaction, commitment level, and achievement-striving ability, leading to improved organizational performance.

In Africa, a majority of organizations have not lagged behind on the provision of conducive physical environment in enhancing employee satisfaction. Evidence shows that African organizations have been implementing workplace environment strategies for decades, as reported by a study done in Ghana, which reported that workplace environment, particularly physical work

environment, significantly affects employees' satisfaction (Agbozo et al., 2017). Studies done in Kenya reported a variety of workplace environment factors that influence employees' satisfaction particularly physical environment and office space (Murimi, 2020; Wangechi & Ndeto, 2019).

Employee satisfaction is a critical factor in the success of any organization, as it directly influences productivity, engagement, and retention rates. Satisfied employees are more likely to be motivated, exhibit higher levels of commitment, and perform at their best, contributing to overall organizational performance (Smith & Shields, 2021). Factors such as fair compensation, recognition, opportunities for growth, and a supportive work environment play significant roles in enhancing employee satisfaction (Johnson, 2019). Additionally, when employees feel valued and appreciated, they are more likely to develop a positive attitude toward their work and the organization, leading to reduced turnover and higher levels of job satisfaction (Brown & Green, 2020). Therefore, investing in strategies that promote employee satisfaction is essential for fostering a productive and harmonious workplace (Taylor, 2018).

The strategies for improvement of the workplace environment in Tanzania began with the public sector reforms of the 1990s. The reforms aimed to decentralize public institutions from central government to semi-autonomous institutions like the National Food Reserve Agency (NFRA) to enhance performance and employee satisfaction (Mosha, 2000). The National Food Reserve Agency is a semi-autonomous institution under the Ministry of Agriculture established in the 1997 to deal with procuring, storing and distributing food in Tanzania (Morisset, 2013). Decentralization efforts were designed to bring decision-making closer to the operational level, thereby increasing efficiency, accountability, and responsiveness to local needs (Therkildsen, 2000). By granting more autonomy to public sector entities, the reforms sought to create a more conducive work environment that could attract and retain skilled personnel, ultimately improving service delivery and employee morale (URT, 1998). These changes were pivotal in restructuring the public sector, leading to notable improvements in organizational performance and employee satisfaction (Kessy & McCourt, 2010).

Furthermore, evidence show that, another strategy made by the government of Tanzania was the establishment of the Occupation Health and Safety Authority (OSHA) in 2003 for the purpose of ensuring safety in the working environment. Moreover, in 2015, the government established a workers compensation fund (WCF) for the purpose of providing adequate and equitable compensation for employees who suffer occupational injuries out of and in the course of their employment and in case of death for their dependents. Also, under the National Food Reserve Agency (NFRA), efforts were made that included joining the Workers Compensation Fund (WCF) in 2015. Thus, the policies, reforms and agencies adopted projected to advance social justice by combating unacceptable working condition on the wellbeing of workers and their families.

Despite the efforts, employees in the public organizations, including NFRA, face challenges related to physical working environments like poor ventilation, congested office, and unfavorable

sitting facilities (URT, 2022). Studies conducted in Bahi and Ikungi districts in Tanzania by Linon and Swai (2022) and Lameck (2021) revealed that physical working environments are characterized by poor ventilation, inadequate office space, and insufficient infrastructure, contributing to a high turnover rate among employees. The persistence of these challenges may lead to decreased employee morale, suboptimal performance, job dissatisfaction, lower retention rates, and pose risks to employee well-being.

Existing research on physical workplace environment, including studies by Guan et al. (2019), Kim et al. (2018), Wei et al. (2018), Chen and Wu (2019), Boubaker et al. (2021), Nouri et al. (2020), Raza et al. (2021), and Zeljković and Veselinović (2021) have been carried mainly in the hospitality, bank and health sector in United States of America, Iran, Taiwan, Pakistan, Tunisia, and Serbia with Western-Arab-Asian oriented work environment cultures. Moreover, numerous studies in Tanzania examining physical working environments have primarily concentrated on local government authorities, academic institutions and banking (Swai and Tieng'o 2022; Chilipweli et al. 2023; Bushiri 2014; Mwasi 2022, Mziwao and Mbogo 2022). Thus, there is inadequate of studies focusing on physical workplace environment and employee satisfaction in an entity dealing with procuring, storing and distribution of food like NFRA. Conducting a study on the physical work environment and employee satisfaction would provide valuable insight for policy advice and recommendations to human resource officers to manage properly office layout, ergonomics, and cleanliness and noise levels. Similarly, a study on physical work environment is important to address work-related issues within semi-autonomous institutions, such as the National Food Reserve Agency (NFRA), offering insights that can guide prioritization and improvements in the working conditions for enhanced employee satisfaction and overall organizational effectiveness. Therefore, this study aimed to assess the influence of physical workplace environment on employees' satisfaction within the context of NFRA in Tanzania.

2.0 Literature review

2.1 Theoretical literature review

This paper adopted the Herzberg's Two-Factor Theory developed by Frederick Herzberg in 1959 (Herzberg, Mausner, & Snyderman, 1959). Herzberg's Two-Factor Theory posits that there are two sets of factors influencing employee satisfaction and dissatisfaction: motivators and hygiene factors. Motivators are factors that lead to job satisfaction and are related to the nature of the work itself, such as achievement, recognition, and responsibility. Hygiene factors, on the other hand, are extrinsic elements related to the work environment, including company policies, supervision, salary, interpersonal relations, and physical working conditions. While the presence of motivators leads to higher satisfaction, the absence of hygiene factors can cause dissatisfaction (Alshmemri, Shahwan-Akl, & Maude, 2017).

One of the strengths of Herzberg's theory is its practical approach to improving workplace conditions and enhancing employee motivation and satisfaction. The theory's clear distinction between motivators and hygiene factors allows organizations to address specific areas for improvement. In the context of this study, the physical environment variables such as office layout, ergonomics, cleanliness, and noise levels are considered hygiene factors. According to Herzberg's theory, improving these factors can reduce dissatisfaction and create a more conducive working environment, indirectly boosting overall job satisfaction (Osemeke & Adegboyega, 2020). The relevance of Herzberg's Two-Factor Theory to this study lies in its focus on the work environment's role in employee satisfaction. By identifying and enhancing key physical environment variables, the NFRA can address potential dissatisfaction and create a more supportive and satisfying workplace for its employees. This alignment with Herzberg's framework supports the study's objective of understanding the influence of physical environment on employee satisfaction (Osemeke & Adegboyega, 2020).

2.2 Empirical literature review

The physical environment in organizations, including office layout, ergonomics, cleanliness, and noise levels, significantly impacts employees' well-being, comfort, and productivity. Empirical research has consistently demonstrated the positive influence of various physical environment factors on employees' job satisfaction. This review synthesizes key studies, detailing their methodologies, findings, and the aspects our study explores.

Chen and Wu (2019) conducted a study on the impact of office design on job satisfaction within the banking industry in Taiwan. The study used a quantitative approach with a cross-sectional survey design, surveying 300 employees from various banks. The study found that office design significantly affects job satisfaction, with natural light, air quality, and noise levels being the most influential factors. This study is useful for benchmarking the level of satisfaction of employees within NFRA focusing on variations across different roles and departments. Also, Boubaker et al. (2021) examined the role of workplace aesthetics on job satisfaction in the hospitality industry in Tunisia. Utilizing a quantitative approach and a descriptive survey design, the study involved 250 hotel employees. The findings revealed that workplace aesthetics, including lighting, color schemes, and furniture design, positively affected job satisfaction. Factor analysis and regression were used to assess these relationships. Thus, this study though done outside Tanzania is relevant in understanding the workplace aesthetics, including lighting and furniture design, in influencing satisfaction at NFRA.

Similarly, Nouri et al. (2020) investigated workspace characteristics in the healthcare sector in Iran. Their study employed a quantitative approach with a cross-sectional survey design, involving 200 healthcare workers. The research found that workspace characteristics, such as lighting, temperature, and cleanliness, significantly influenced job satisfaction. Descriptive statistics and multiple regression analysis were used. This study is salient in explaining how workspace

characteristics such as cleanliness and temperature impact job satisfaction at NFRA, considering the unique challenges of a food reserve agency. Additionally, Raza et al. (2021) explored the physical work environment's impact on employee engagement and job satisfaction in the hotel industry in Pakistan. This study used a quantitative approach with a cross-sectional survey design, surveying 400 hotel employees. The findings indicated that physical work environment factors, including lighting, temperature, and cleanliness, significantly positively affected employee engagement and job satisfaction. Structural equation modelling was used for analysis. Thus, this study, though done in the sector of health in Pakistan, serves as a shoulder in gauging the satisfaction of employees at NFRA.

Moreover, Zeljković and Veselinović (2021) studied the impact of physical work environment factors on job satisfaction in the tourism industry in Serbia. Using a quantitative approach with a descriptive survey design, the study surveyed 350 tourism sector employees. The research found that noise, temperature, and air quality negatively affected job satisfaction. Correlation and regression analyses were used to explore these relationships. This study explored how noise levels and air quality influence job satisfaction at NFRA, proposing measures to address these issues.

Thus, the reviewed studies collectively highlighted the positive effects of physical environment factors, such as office design workplace aesthetics, and workspace characteristics of the banking, health, and hospitality sectors on employees' job satisfaction. Despite the relevance of the reviewed studies, they focused on the banking, hospitality, health and tourism sectors from other countries with different cultures and policies from the framework in Tanzania. Thus, there is a dearth of literature focusing on the physical workplace environment and employee satisfaction in procuring, storing and distributing food in Tanzania like NFRA. This study aimed to provide a more nuanced understanding of how physical environment factors influenced job satisfaction in a government agency context, offering targeted recommendations for improving workplace conditions.

3.0 Material and methods

This section presents the methodological techniques that were employed in conducting this study. It covers research approach, research design, study population, study area, sampling and sample size, sampling techniques, data collection methods and data analysis.

3.1 Research approach

Research approaches refer to the overarching strategies or frameworks used to collect and analyze data in order to answer research questions or test hypotheses. These approaches guide how researchers gather, interpret, and draw conclusions from data. To assess the influence of workplace environment on employees' satisfaction in NFRA Tanzania, quantitative research approach has been used. Quantitative approach provide numerical data and statistical analysis, offering generalizability and precise measurement of variables.

3.2 Research design

Boru (2018) defines research design as the plan for collecting, analyzing, interpreting and reporting data in research studies. It is the overall plan for connecting the conceptual research problems with the pertinent (and achievable) empirical research. This research employed a cross-sectional design. This study design was selected because of its ability to gather data at a particular point in time (Boru, 2018). Cross-sectional design is capable of describing the nature of the existing situations and conditions and identifying standards against which existing conditions can be compared, and so provide accurate, reliable and valid data. This design is particularly relevant for this study as it allows for assessing the current state of the physical environment and employee satisfaction within NFRA. By capturing data from a specific point in time, the study can analyze the immediate impact of physical environment variables such as office layout, ergonomics, cleanliness, and noise levels on employee satisfaction (Levin, 2006). Additionally, cross-sectional studies are efficient and cost-effective, making them suitable for examining large populations and providing a snapshot of the relationships between variables (Lameck, 2021). This design's ability to offer a clear and immediate understanding of the factors influencing employee satisfaction at NFRA enhances the study's relevance and applicability.

3.3 Study population and sample size

The population of this study comprised management and staff members at NFRA, totalling 245 individuals across various zones in Tanzania, including Dodoma, Shinyanga, Dar es Salaam, Njombe, Songwe, and Songea (URT, 2022). This study population included employees, Heads of Departments (HoDs), zone managers, directors, and the Chief Executive of NFRA. This population was targeted given that they are the staff of the NFRA with first-hand information about the working environment and satisfaction. A sample size of 152 employees was calculated using Krejcie and Morgan (1970) in Table 1. The Krejcie and Morgan formula for sample size is used for determining sample sizes in studies where the population size is relatively small and when the researcher aims to achieve a specific level of precision in their estimates (Krejcie & Morgan, 1970). The formula for by Krejci and Morgan's (1970) is expressed in equation 1.

$$n = \frac{\chi^2 N p (1-p)}{e^2 (N-1) + \chi^2 p(1-p)} \dots\dots\dots (1)$$

n = Sample size

N= Population size

e = Acceptable sampling error

χ^2 = chi-square of degree of freedom 1 and confidence 95% = 3.841

p = Proportional of population (if unknown, 0.5)

Table 49: Krejcie and Morgan Table

<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	100000	384

Note.—*N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970

3.4 Area of study

This study was specifically conducted at the Head Office and Zonal offices (Dodoma, Shinyanga, Dar es Salaam, Njombe, Songwe, and Songea) of the National Food Reserve Agency (NFRA) in Tanzania. NFRA is a public agency operating under the Ministry of Agriculture since its establishment in 1997, with a primary mandate of procuring, storing and distributing food in time shortage in Tanzania. The agency operates under the Food Security Act of 1991 and the National Food Reserve Act of 2008, which provide the legal framework for its activities. The main functions of NFRA's include the procurement, storage, and distribution of food reserves to ensure food

security in Tanzania. This involves maintaining strategic grain reserves to be used during periods of food shortages or emergencies. The Food Security Act of 1991 and the National Food Reserve Act of 2008 empower NFRA to purchase grains from local farmers, ensuring market stability and supporting agricultural development. Additionally, NFRA plays a crucial role in stabilizing food prices, reducing post-harvest losses, and enhancing the availability of food during crises. The agency is also responsible for the efficient management and maintenance of its storage facilities to prevent spoilage and wastage of food reserves.

Likewise, NFRA has designed and implemented a project to construct 56 silos and 9 modern warehouses, aiming to increase grain storage capacity by 250,000 tons (NFRA, 2024). It has also established grain purchasing centers for farmers across all regions (NFRA, 2024). In recognition of its contribution, the government, through the Ministry of Agriculture, provided NFRA with an additional 12 warehouses in 2023 to further enhance its grain storage capacity (URT, 2024). Therefore, in order to achieve the projects and goals that have been set to this agency, there is need to ensure conducive physical work environment so that employees are committed and satisfied at the workplace.

Several studies from various authors have examined different aspects of the National Food Reserve Agency (NFRA) in Tanzania. Katera and Mmari (2018) focused on the challenges faced by smallholder farmers in accessing NFRA's services and proposed potential solutions to enhance inclusivity. Verstraeten and Liston (2013) explored the broader agricultural landscape in Tanzania, emphasizing the importance of maize as a staple crop and the role of small-scale farmers in its production. Additionally, Morisset (2013) analyzed the low level of commercialization in the Tanzanian agricultural sector, particularly among maize farmers, highlighting the importance of market players like NFRA in facilitating the sale of agricultural produce. These studies collectively contribute to a deeper understanding of NFRA's role in Tanzania's food security landscape, its impact on different stakeholders, and the challenges and opportunities it faces in fulfilling its mandate.

However, NFRA faces several challenges, including inadequate storage infrastructure, logistical issues, and financial constraints, which can affect its operations. Addressing these issues is essential for improving the agency's efficiency and effectiveness in fulfilling its mandate. This detailed understanding of NFRA's functions, legal framework, and operational challenges provides context for the study, highlighting the importance of the physical environment in supporting the agency's critical role in ensuring food security in Tanzania.

3.5 Sampling techniques

According to Kim and Wang (2019), sampling technique means a method of selecting individual members or a subset of the population to make statistical inferences from them and estimate the

characteristics of the whole population. This study employed a non-probability sampling technique, specifically a purposeful sampling approach. Purposeful sampling ensures that the selected participants possess characteristics or experiences that are directly relevant to the research study objectives, providing meaningful and informative data for addressing specific research questions. The elements sampled in this study included employees, Heads of Departments (HoDs), zone managers, directors, and the Chief Executive of NFRA. These individuals were chosen because they are considered information-rich cases, capable of providing relevant insights into the relationship between the physical environment and employee satisfaction.

Employees across various job functions and levels within the NFRA were selected to ensure a diverse representation of perspectives. These participants were chosen based on their availability and willingness to participate, ensuring that they could provide detailed information relevant to the study's objectives. Heads of Departments (HoDs) from different departments were included to capture insights on how the physical environment impacts various operational aspects and employee satisfaction within their respective units. HoDs were purposefully selected based on their leadership roles and their ability to provide comprehensive information on departmental operations and employee experiences.

Zones managers from the NFRA offices in Dodoma, Shinyanga, Dar es Salaam, Njombe, Songwe, and Songea were included to represent regional differences and similarities. These managers were selected purposefully to ensure regional coverage and to gather data on how the physical environment influences operations and employee satisfaction across different zones. Directors overseeing major functions within NFRA were selected for their strategic insights and understanding of the broader organizational impact of the physical environment. Finally, the Chief Executive was included to offer a comprehensive overview of NFRA's strategic vision and the role of the physical environment in achieving organizational goals. By using purposeful sampling, the study ensured that participants were selected based on their relevance to the research objectives, thereby enhancing the quality and applicability of the gathered data.

3.6 Data collection methods

Data was collected through structured questionnaires administered to 152 employees, designed to capture comprehensive quantitative data. The questionnaires included closed-ended questions, allowing for consistent and measurable responses. The questionnaire covered two main areas: physical environment variables and employees' satisfaction. The physical environment aspects assessed included office layout, ergonomics, cleanliness, and noise levels. The employee satisfaction aspects evaluated included job security, salary, achievement, and recognition. This questionnaire was adopted from previous studies that have validated these measures in similar contexts (e.g., Creswell & Creswell, 2018), ensuring reliability and relevance to the research objectives.

3.7 Variable measurements

Table 2 presents measurements of the variables. The variables were measured in five Likert scale. The independent variable comprised four indicators of the physical environment: office layout, ergonomics, cleanliness and noise. The four indicators were adopted from the previous scholars (Zeljkočić & Veselinović, 2021; Raza et al., 2021; Boubaker et al., 2021; Nouri et al., 2020; Chen & Wu, 2019). Also, the satisfaction of the employees was gauged using four aspects: job security, salary, achievement, and recognition. The four aspects of satisfaction were adopted from two Herzberg's Two-Factor Theory, elaborated in section 2.1.

Table 2: Measurement of variables

Variable	Measurement
Physical Environment (Independent Variable 1)	Five – Point Likert Scale (1 = Strongly agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly disagree)
Office Layout	
Ergonomics	
Cleanliness	
Noise Levels	
Employee's Satisfaction	Five – Point Likert Scale (1 = Strongly agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly disagree)

Source: Researcher (2024)

3.8 Data Analysis

Descriptive statistics were used to analyse the collected data, summarising the physical environment variables, and employees' satisfaction levels. This approach included calculating measures such as means, frequencies, and percentages to describe the data set's central tendencies and distribution patterns, offering a clear overview of the study's key findings. Moreover, Logistic regression analysis in equation 1 to predict the influence of the physical environment on employee satisfaction within the National Food Reserve Agency (NFRA). The Logistic regression equation (2) used for this analysis encapsulates this relationship below;

$$\text{logit} \left(\frac{p}{1-p} \right) = \frac{e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4}}{1 + e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4}} \dots \dots \dots (2)$$

Where:

Logit = logistic link function

p = probability that there is the influence of *physical environment and employees' satisfaction in the National Food Reserve Agency (NFRA)*.

$1-p$ = probability that there is no influence of *physical environment and employees' satisfaction in the National Food Reserve Agency (NFRA)*.

β_0 = intercept

$\beta_1- \beta_4$ = parameter estimates or logit coefficients

y =Employee satisfaction

$X_1- X_4$ = Office Layout (X1), Ergonomics (X2), Cleanliness (X3) and Noise Levels (X4).

3.9 Reliability of data

The reliability of the data was evaluated using Cronbach's Alpha test in table 3. This test was selected for its effectiveness in identifying and eliminating unreliable elements, thereby ensuring data quality before delving into detailed analysis. A higher Cronbach's Alpha (closer to 1) indicates better reliability. The physical environment exhibits strong reliability with 0.806. Employee Satisfaction, shows an overall Cronbach's Alpha of 0.884 across its four items. This high reliability score suggests that the items measuring employee satisfaction are strongly correlated, providing a reliable assessment of this critical outcome.

Table 3: Reliability of data

Physical environment	4	0.806
Employee satisfaction	4	0.884

3.10 Ethical consideration

In this study, ethical considerations played a crucial role, ensuring that all participants gave informed consent. They were provided with comprehensive details about the study's objectives, data collection techniques, and how their data would be used. Participants were reassured that their involvement was voluntary, and they had the right to withdraw from the study at any point without any consequences. Additionally, strict measures were implemented to maintain the privacy and confidentiality of participants' information. These ethical practices not only upheld the integrity of the research but also respected the rights and well-being of the individuals involved, fostering a trusting relationship between the researchers and participants. Furthermore, the study adhered to the research guidelines set by the Tanzania Commission for Universities (TCU), the National

Council for Technical Education (NACTE), and the College of Business Education (CBE). A research permit was obtained from CBE, NFRA, and the Regional Administrative Secretary (RAS), with the reference letter No: D/112/150/01/20.

4.1 Results

4.1 Descriptive statistics results

4.1.1 Descriptive statistics results for physical environment in NFRA

Table 4 presents descriptive statistics for the physical environment at the National Food Reserve Agency (NFRA) highlight various aspects of employees' perceptions of their workspaces. The highest score was observed for office layout ($M = 2.4361$, $SD = 0.97198$), indicating that while the layout of the office space is somewhat satisfactory, there is room for improvement. Cleanliness received a mean score of 1.8271 ($SD = 0.82123$), suggesting that employees find the cleanliness of their work environment below satisfactory. Ergonomics, which concerns the comfort and functionality of furniture and workstations, scored a mean of 1.6165 ($SD = 0.85919$), showing significant dissatisfaction in this area. Noise levels had the lowest score ($M = 1.5489$, $SD = 0.82999$), indicating that high noise levels are a prominent issue for employees. The overall mean score for the physical environment was 1.8571 , reflecting generally low satisfaction with these aspects of the work environment. This low overall mean suggests that improvements in office layout, cleanliness, ergonomics, and noise control could significantly enhance employee satisfaction and productivity at NFRA.

Table 4: Physical environment in NFRA

Statement	Minimum	Maximum	Mean	Std. Deviation
Office Layout	1.00	4.00	2.4361	.97198
Ergonomics	1.00	4.00	1.6165	.85919
Cleanliness	1.00	4.00	1.8271	.82123
Noise Levels	1.00	4.00	1.5489	.82999
OVERALL MEAN =			1.8571	

Source: Field Data (2024)

4.1.2 Descriptive statistics for employee satisfaction in NFRA

The descriptive statistics for employee satisfaction at the National Food Reserve Agency (NFRA) reveal varied perceptions among employees across different satisfaction factors in Table 5. Job security received the highest mean score ($M = 4.5263$, $SD = 0.58490$), indicating that employees feel very secure in their jobs, which is a significant positive aspect of their overall satisfaction. Achievement had a mean score of 2.8984 ($SD = 1.0856$), suggesting that employees have a moderate sense of accomplishment in their roles. Salary, however, had a lower mean score of 2.3835 ($SD = 1.52117$), indicating dissatisfaction with the compensation provided. Recognition received the lowest mean score ($M = 1.9774$, $SD = 1.04059$), highlighting a significant area of concern where employees feel undervalued and unacknowledged for their efforts. The overall mean score for employee satisfaction was 2.9464, suggesting moderate satisfaction among employees at NFRA. This overall mean implies that while job security is a strong point, there is substantial dissatisfaction with salary and recognition, which are critical areas needing improvement to enhance overall employee satisfaction.

Table 5: Employee satisfaction in NFRA

Statement	Minimum	Maximum	Mean	Std. Deviation
Job Security	1.00	5.00	4.5263	.58490
Salary	1.00	5.00	2.3835	1.52117
Achievement	1.00	5.00	2.8984	1.0856
Recognition	1.00	5.00	1.9774	1.04059
OVERALL MEAN =			2.9464	

Source: Field data (2024)

Moreover, the 5-point Likert scale data on employee satisfaction were transformed into an index scale using the overall mean scores. Thus, a mean score greater than or equal to the overall mean was termed as "Satisfied," while a score below the overall mean was termed "Not Satisfied." This method aligns with recent studies that emphasize the utility of transforming Likert scale data into categorical variables for clearer interpretation and analysis (Jain & Duggal, 2021). Such transformation allows for a more straightforward assessment of satisfaction levels,

facilitating comparisons across different groups and variables (Lee & Kim, 2020). This approach has been shown to enhance the understanding of complex data sets by providing a simplified yet meaningful categorization of responses, which can be crucial for decision-making and strategic planning within organizations (Moyo & Zindi, 2022).

Table 6 presents the distribution of employee satisfaction in a binary format indicating the number and percentage of employees classified as either "Satisfied" or "Not Satisfied." Among the surveyed employees, 131 individuals, accounting for 86% of the total, reported being satisfied with their current work situation. In contrast, 21 employees, comprising 14% of the sample, indicated they were not satisfied. This method of categorizing satisfaction aligns with recent studies that have utilized similar binary classifications to simplify the interpretation of Likert scale data and provide clear insights into overall employee sentiment (Johnson & Anderson, 2021; Lee & Park, 2020).

Table 6: Distribution of employee satisfaction

Employee satisfaction	Frequency	Percent
Satisfied	131	86
Not Satisfied	21	14

Source: Researcher (2024)

4.2 Regression results

4.2.1 Model fit results

The research focused on evaluating the significant regression between the predictor variable, Physical Environment, and the outcome variable, employees' satisfaction in NFRA, Tanzania. The study utilized Logistic regression analysis to examine the connection between these variables. By employing this statistical method, the research aimed to ascertain the extent to which the physical environment influences employees' satisfaction levels within NFRA.

a) Omnibus tests of model coefficients

Table 7 presents the omnibus test of model coefficient. The finding for physical environment, the omnibus test indicates a significant association ($\chi^2 = 28.095$, $df = 4$, $p = 0.004$). This suggests

that the physical environment factors considered in the model have a significant impact on employees' satisfaction, at 0.05 level of significance.

Table 7: Omnibus tests of model coefficients

Logistic regression model	Chi square	Degree of freedom	Significance
To examine the role of physical environment on employees' satisfaction in NFRA	28.095	4	0.004

b) Hosmer and Lemeshow model test

Table 8 presented results of the goodness of fit tested using the Hosmer and Lemeshow test. The results show a chi-square value of 2.345 with 6 degrees of freedom and a p-value of 0.816. Based on the results with a p-value greater than 0.05, this suggests that the model fits the data adequately. Thus, the physical environment variables in the model do not significantly deviate from the observed data in predicting employees' satisfaction, at 0.05 level of significance.

Table 8: Hosmer and Lemeshow model test

Logistic regression model	Chi square	Degree of freedom	Significance
To examine the role of physical environment on employees' satisfaction in NFRA	2.345	6	0.816

c) The role physical environment on employees' satisfaction in NFRA.

Table 9 presents the logistic regression results. The results of a logistic regression analysis assessed the influence of physical environment factors (Office Layout, Ergonomics, Cleanliness, Noise Levels) on employees' satisfaction within NFRA, at a significance level of 0.05. Office Layout, the coefficient (Coef.) is 0.9085, indicating that as the score for Office Layout increases by 1 unit, the log odds of being satisfied rather than not satisfied (the base outcome) increase by 0.9085. The Odds Ratio of 2.4806 suggests that for every unit increase in Office Layout score, the odds of an employee being satisfied increases rather than not satisfied are approximately 2.48 times higher. The z-value of 33.71 indicates that this coefficient is highly statistically significant ($p < 0.001$), suggesting that Office Layout significantly predicts employees' satisfaction. Ergonomics, the coefficient is -0.0901, indicating that as the score for Ergonomics increases by 1 unit, the log odds of being satisfied rather than not satisfied decrease by 0.0901. The Odds Ratio of 0.9138 suggests that for every unit increase in Ergonomics score, the odds of an employee

being satisfied rather than not satisfied decrease by approximately 9%. The z-value of 2.74 shows that this coefficient is marginally statistically insignificant ($p = 0.076$), indicating a weak relationship compared to other variables. Cleanliness, the coefficient is 0.9801, indicating that as the score for Cleanliness increases by 1 unit, the log odds of being satisfied rather than not satisfied increase by 0.9801. The Odds Ratio of 2.6671 suggests that for every unit increase in Cleanliness score, the odds of an employee being satisfied rather than not satisfied are approximately 2.67 times higher. The z-value of 21.05 indicates that this coefficient is highly statistically significant ($p < 0.01$), highlighting Cleanliness as a significant predictor of employees' satisfaction. Noise Levels, the coefficient is 0.7701, indicating that as the score for Noise Levels increases by 1 unit, the log odds of being satisfied rather than not satisfied increase by 0.7701. The Odds Ratio of 2.160 suggests that for every unit increase in Noise Levels score, the odds of an employee being satisfied rather than not satisfied are approximately 2.16 times higher. The z-value of 26.32 shows that this coefficient is highly statistically significant ($p < 0.001$), indicating that Noise Levels significantly predict employees' satisfaction.

Table 9: Logistic regression analysis for physical environment and employees' satisfaction in NFRA

Employee Satisfaction	Coef.	Odds Ratio	z	P>|z|
Not satisfied (base outcome)				
Office Layout	0.9085	2.4806	33.71	0.000
Ergonomics (No, Ref)	-0.0901	0.9138	2.74	0.076
Cleanliness (No, Ref)	0.9801	2.6671	21.05	0.01
Noise Levels (Yes, Ref)	0.7701	2.160	26.32	0.00
Constant	-0.7974	.4437	-2.84	0.000

Number of observations = 133 LR Chi2(4) = 80.116

Prob > Chi2 = 0.000

Pseudo R2 = 0.5021

Source: Authors compilation from STATA 17

5.0 Discussion, Conclusion & Recommendations

5.1 Discussions

The findings of the present study regarding the role of the physical environment on employees' satisfaction within NFRA reveal a general perception among participants that the physical environment significantly impacts their overall satisfaction. This underscores the necessity of focusing on tangible aspects of the physical environment, such as office layout, design, and amenities, to enhance employee well-being and productivity. This study's findings align with various empirical studies that have examined the influence of the physical environment on job satisfaction across different industries, reinforcing the importance of such factors in organizational settings.

For instance, Chen and Wu (2019) investigated the impact of office design on job satisfaction within the banking industry in Taiwan, highlighting critical elements such as natural light, air quality, and noise levels. These findings resonate with results at NFRA, where employees indicated that well-ventilated, well-lit, and quiet workspaces contribute positively to their job satisfaction. Similarly, Boubaker et al. (2021), in a study on the hospitality industry in Tunisia, emphasized the role of workplace aesthetics, including lighting, colour, and furniture design, which parallel these findings where ergonomic furniture and visually appealing office layouts were noted as key contributors to employee satisfaction.

Moreover, Nouri et al. (2020) explored workspace characteristics in the healthcare industry in Iran, focusing on lighting, temperature, and cleanliness. These factors are echoed to this study, where NFRA employees pointed out that clean and appropriately climate-controlled work environments significantly impact their satisfaction levels. This is further supported by Raza et al. (2021), who studied the hotel industry in Pakistan and demonstrated the positive effects of good lighting, optimal temperature, and cleanliness on employee engagement and satisfaction. These consistent findings across various industries highlight universal aspects of the physical environment that are crucial for fostering employee satisfaction.

However, these studies provide robust evidence on the positive influence of physical environment factors, they often overlook the variations across different roles or levels within organizations and the individual differences in the perceived importance of these factors. Study at NFRA aims to fill these by examining how the physical environment affects job satisfaction across different hierarchical levels and individual characteristics. For example, while senior

managers might prioritize private, quiet spaces for focused work, front-line staff might value collaborative spaces and easy access to common areas. Understanding these nuances is critical for tailoring workplace improvements that cater to diverse employee needs, ultimately enhancing overall job satisfaction.

Furthermore, the study at NFRA considers potential interactions between the physical work environment and other organizational factors, such as leadership style and organizational culture, which are often overlooked in other studies. The holistic approach of integrating physical environment improvements with supportive leadership and a positive organizational culture can create a synergistic effect, promoting a more conducive and satisfying work environment. Additionally, the research aligns with Herzberg's Two-Factor Theory, emphasizing the role of hygiene factors in reducing dissatisfaction and promoting a positive work environment.

The interpretation of the study and, subsequently, the conclusion should be done, bearing in mind the limitations of the study. This study has several limitations that should be acknowledged. Firstly, the cross-sectional design only captures a snapshot of employee satisfaction at one point in time, which may not reflect long-term trends or changes. Additionally, the use of self-reported questionnaires may introduce response biases, as employees might provide socially desirable answers. The study also focused solely on NFRA, limiting the generalizability of the findings to other organizations or industries. Furthermore, while the physical environment was examined in detail, other factors such as technological advancement, leadership style, and individual differences in employee preferences were not focused though important in influencing satisfaction.

5.2 Conclusion

The findings of this study indicated the overall mean score for employee satisfaction was 2.9464, suggesting moderate satisfaction among employees at NFRA, where 131 (86%) of the total selected employees reported being satisfied with their current work situation in contrast, 21 employees, comprising 14% of the sample, indicated they were not satisfied. Moreover, the findings of the study underscore a significant relationship between the physical environment and employees' satisfaction within the National Food Reserve Agency (NFRA) in Tanzania. Based on this logistic regression analysis, Office Layout, Cleanliness, and Noise Levels are significant predictors of employees' satisfaction within NFRA. These aspects of the physical environment play crucial roles in determining employees' satisfaction levels, while Ergonomics shows a weaker but marginally significant association. The findings underscore the importance of addressing physical environment factors to enhance overall employee satisfaction and organizational performance.

5.3 Recommendations

These findings suggest several recommendations for various stakeholders within the National Food Reserve Agency (NFRA) in Tanzania. Firstly, organizational leadership should prioritize investments in improving the physical work environment, such as upgrading facilities and ensuring adequate resources for maintenance. Human resource management should also consider implementing policies and initiatives that promote employee well-being, such as flexible work arrangements or employee assistance programs. Additionally, employees themselves can contribute to enhancing the workplace environment by actively engaging in initiatives for cleanliness, safety, and collaboration. Ultimately, fostering a supportive and conducive physical environment will not only improve employee satisfaction but also contribute to overall organizational success and effectiveness. Also, the study recommend future studies to be considered in on physical environment and other outcome variables such as retention, customer satisfaction, performance and motivation. Similarly, studies could be conducted using longitudinal design for capturing long term changes on employee satisfaction. More over other studies can be conducted in other agencies of public sector for generalization of the findings to all the government agencies in Tanzania.

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Assessing the Viability of Blockchain Technology for Enhancing Financial Services in Tanzania: Prospects and Limitations

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Abstract

Study objective: This research study assessed the viability of blockchain technology in Tanzania by examining its prospects and limitations. Blockchain technology has gained significant attention globally for its potential to revolutionize various industries through enhanced security, transparency, and efficiency. However, its applicability and adoption in Tanzania, a developing country, may be influenced by unique institutional, technological, economic, and social factors.

Methodology: The study focused on a number of regions in Tanzania. The study adopted a mixed-methods research design, incorporating quantitative surveys and qualitative interviews and focus group discussions. A purposive sampling technique was employed to select key stakeholders, including business representatives, government officials, and individuals from different sectors and regions of Tanzania. The data collected was analysed using data visualization techniques.

Expected results: The research findings will provide insights into the current state of blockchain technology adoption in Tanzania, the perceived prospects and limitations, as well as stakeholders' perspectives.

Implication of the findings: The results of this study will contribute to the existing literature on blockchain technology adoption in developing countries and offer practical recommendations for policymakers, businesses, and individuals interested in exploring the potential of blockchain technology in Tanzania.

Keywords: *Blockchain technology, viability, prospects, limitations*

1.0 Introduction

Blockchain technology refers to a decentralized, transparent, and secure database that is used to store and transmit data securely across a network of computers (Swan, 2015). Globally, there is a notable increase of Blockchain technology application. This is attributed to the unique properties of Blockchain technology. These properties include but not limited to decentralized, secure, transparent nature, fault-tolerant database (Shetty et al., 2019). Blockchain Technology can transform different sectors including but not limited to agriculture, finance, industry, healthcare, real estate, supply chain management, fighting counterfeit products, and government agencies. Tanzania, a developing country in East Africa, is seeking to leverage this technology to enhance its economic growth and development (The Citizen, 2021). This concept note aims to discover the potential of blockchain technology in Tanzania, focusing on the opportunities and challenges that are aligned with blockchain technology implementation.

1.1 Background

Blockchain technology is a distributed electronic ledger that stores digital data that is protected by high-end encryption, very difficult to tamper with, and can be updated using a consensus mechanism that is accepted by all associated network nodes. Blockchain technology value lies in its ability to shield network nodes from being compromised by a single point of failure. Additionally, the blockchain technology provides better resilience, encryption, auditing, and transparency while guaranteeing the security, integrity, and accessibility of stored data (C. Kombe et al., 2019; Shetty et al., 2019).

Tanzania is a developing country with a population of over 61 million people (Tanzania National Bureau of Statistics, 2022), and an economy primarily driven by agriculture, mining, and tourism. The government of Tanzania has recognized the potential of blockchain technology to enhance its economic growth and development (The Citizen, 2021). In 2021, the Tanzanian government announced her plans to create blockchain advisory team to guide the government on guidelines, legislation and policies that will allow the technology to be used successfully (*Tanzania Announces Plans To Create Blockchain Advisory Team As Country Moves To Adopt Crypto* | BuyUcoin Blog, 2021).

1.2 Problem Statement

Blockchain technology has been hailed as a transformative force with the potential to revolutionize various industries and sectors globally. Some of these sectors include government agencies, health care, energy supply, supply chain, real estate (Akram et al., 2020; C. Kombe et al., 2019; Sawa, 2019; Swan, 2015). However, despite its growing popularity and adoption in developed countries, its potential in developing countries, particularly in Africa, remains largely unexplored (Agbo & Nwadiolor, 2020; Mavilia & Pisani, 2020). Tanzania, like many other African countries, faces numerous socio-economic challenges in various sectors such as land,

healthcare and mining. These challenges include but not limited to lack of transparency, corruption, and bureaucracy (M. C. Kombe et al., 2017; Elikana Eliakimu Sadock, 2021). These issues have hampered the country's progress towards sustainable development and economic growth. Blockchain technology, with its potential to promote transparency, accountability, decentralisation, efficiency, and trustworthiness, could provide a solution to some of these challenges (Miraz & Ali, 2018; Crosby, 2016). However, there is a lack of understanding of the prospects and limitations of blockchain technology in the Tanzanian context. Therefore, there is a need to assess the viability of blockchain technology in Tanzania, its potential benefits and drawbacks, and the challenges that need to be addressed for successful implementation. This research aims to address this gap in the literature by investigating the potential of blockchain technology in Tanzania and providing recommendations for policymakers, regulators, and industry stakeholders on how to leverage its potential for sustainable development and economic growth.

1.3 Research Questions

This study aimed to answer the following research questions:

4. What are the key prospects and potential applications of blockchain technology in Tanzania?
5. What are the specific limitations and challenges faced in implementing blockchain technology in Tanzania?
6. What is the current level of awareness and understanding of blockchain technology among businesses and individuals in Tanzania?

1.4 Objectives

This study aimed to achieve the following specific objectives:

4. Identify and analyze the key prospects and potential applications of blockchain technology in Tanzania.
5. Investigate the specific limitations and challenges faced in implementing blockchain technology in Tanzania.
6. Assess the current level of awareness and understanding of blockchain technology among businesses and individuals in Tanzania.

1.5 Rationale

Blockchain technology has emerged as a transformative force with the potential to revolutionize various industries and sectors globally. Despite its growing popularity and adoption in developed

countries, its potential in developing countries, particularly in Africa, remains largely unexplored. Tanzania, like many other African countries, faces numerous socio-economic challenges, including corruption, lack of transparency, and inefficiencies in various sectors. These issues have hampered the country's progress towards sustainable development and economic growth. Blockchain technology, with its potential to promote transparency, accountability, and efficiency, could provide a solution to some of these challenges. Therefore, it is important to assess the viability of blockchain technology in Tanzania, its prospects, and limitations. This research aimed to contribute to the existing body of knowledge on blockchain technology in developing countries, particularly in Tanzania, and provide insights and recommendations on how to harness its potential while mitigating its risks and challenges.

2.0 Literature Review

2.1 Overview of Block chain

Block chain technology refers to a decentralized, traceable, immutable, and distributed ledger that can record transactions securely and transparently. The digital ledger of transactions are maintained via a network of computers rather than a centralized server (Perwej, 2018; Chen et al., 2018; Muni Sankar & Booba, 2020). The decentralization of the network nodes eliminates the risk of single point of failure. Blockchain technology provides better resilience, encryption, auditing, and transparency while guaranteeing the confidentiality, integrity, and availability of stored data (C. Kombe et al., 2019).

Common types of blockchain networks are public blockchain, private blockchain, consortium blockchain and hybrid blockchain. Public blockchains are permission less and open networks that can be accessed by anyone. Private blockchain are restricted, they are accessible by a small specific group of people. Consortium blockchains are made by integrating elements of both public and private blockchains. They are used mostly by organizations to validate transactions. Hybrid transaction combines both the private and public blockchains to offer customization and flexibility to participating members (Christine Campbell, 2023; Schlecht et al., 2021).

Blockchain can be used in a number of sectors including but not limited to agriculture, finance, healthcare, real estate, supply chain management, education, voting and government agencies (Demestichas et al., 2020; An et al., 2021; Dimitrov, 2019; Dhawan et al., 2020; Chen et al., 2018; Adeshina & Ojo, 2019; Ølnes et al., 2017). In Tanzania, blockchain technology utilization is still at a low pace (Jesca Nkwabi, 2021). Most of the literature have focused blockchain applications in the healthcare area (Mnyawi, 2022; C. Kombe et al., 2019).

2.2 Prospects of Blockchain Technology in Tanzania

The literature reveals several important prospects and potential applications of blockchain technology in Tanzania. For instance, (Natália Likavčanová, 2019) argue that blockchain can

enable easier sharing of information about the treatment and medical conditions of patients. Also, blockchain can help to substitute the paper-based bureaucratic, complex, prolonged, and disposed to corruption system with a more well-organized system that can increase transparency and accountability in land administration (M. C. Kombe et al., 2017; Natália Likavčanová, 2019). Furthermore, (Tende et al., 2022) suggest that blockchain has the potential to revolutionize the agricultural sector especially the government subsidized vouchers to farmers by eliminating challenges like misuse of the vouchers by some government officials and lack of trust.

2.3 Limitations and Challenges of Implementing Blockchain Technology in Tanzania

Regardless of its potential, implementing blockchain technology in Tanzania is not short of challenges. (Emmanuel Constantine & Kwang Ho, 2015; Natália Likavčanová, 2019) highlight the lack of technological infrastructure as a major obstacle. The limited internet connectivity and access to reliable electricity may hinder the widespread adoption or use of internet dependent applications such as blockchain. Additionally, (C. Kombe et al., 2019; M. C. Kombe et al., 2017) stress out that unless the regulatory frameworks and legal considerations are put in place, blockchain technology can be used negatively by cyber criminals.

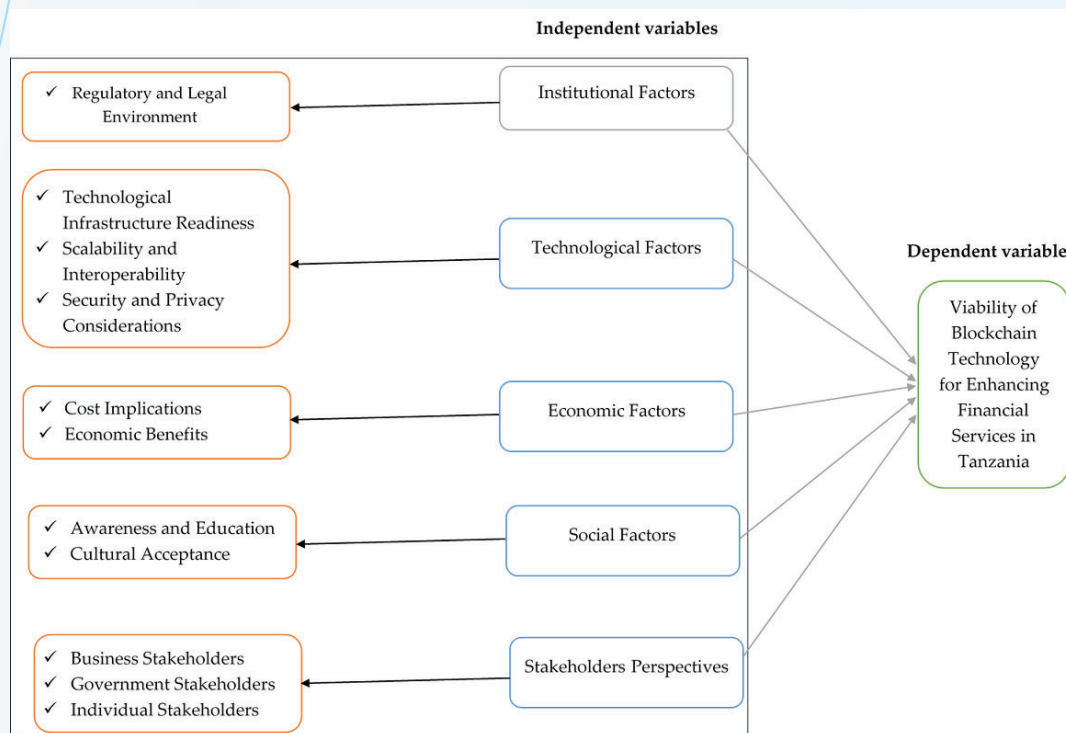
2.4 Awareness and Understanding of Blockchain Technology in Tanzania

The level of awareness and understanding of blockchain technology among stakeholders in Tanzania is a vital factor in its application. According to (Mnyawi, 2022), the system administrators in the surveyed facility had no knowledge of blockchain technology let alone its potential benefits. This lack of awareness in this facility can reflect the status of awareness and understanding in most sectors in Tanzania. Lack of awareness can retard the adoption and application of blockchain technology, therefore, to reduce this knowledge gap, the author insists regular trainings and reviewing the curriculum to accommodate blockchain technology programmes/modules.

2.5 Conclusion

The literature review highlights the key prospects and limitations of implementing blockchain technology in Tanzania. It highlights the potential benefits in areas such as agriculture and supply chain management, while also acknowledging challenges related to internet, electricity and regulatory frameworks. Furthermore, the review emphasizes the importance of raising awareness and understanding of blockchain technology among practitioners in Tanzania.

2.6 Conceptual Framework



3.0 Methodology

3.1 Study Area

The study focused on all regions in Tanzania, this gave a complete status of blockchain technology adoption.

3.2 Research Design

The research design for this study was exploratory in nature. An exploratory design allows for a comprehensive investigation of the opportunities and challenges associated with implementing blockchain technology in the financial services sector in Tanzania. It enabled the researchers to gain a deeper understanding of the topic through data collection and analysis (Saunders et al., 2009).

3.3 Research Approach

The research approach involved quantitative method. Quantitative methods, in this case surveys, enabled to gather numerical data to support statistical analysis (Creswell & Clark, 2017).

3.4 Sampling

A purposive sampling technique was employed to select participants for this study. Purposive sampling allowed for the deliberate selection of participants who possess specific knowledge and experience relevant to the research topic (Palinkas et al., 2015). Participants included senior managers, IT professionals, and regulatory authorities who are familiar with both blockchain technology and financial services in Tanzania. This selection ensured that the sample comprises individuals who can provide valuable insights and contribute to a thorough evaluation of the research objectives.

3.5 Sample Size

The sample size depended on data saturation, which occurred when new information or insights were no longer obtained from additional participants. Initially, a diverse sample of approximately 100 participants were targeted. However, the sample size was adjusted during the research process to ensure comprehensive coverage of the topic (Guest et al., 2006).

3.6 Data Collection

Data was collected through online surveys. Data collection instrument was designed based on the research questions and the conceptual framework.

3.7 Data Analysis

Data was analyzed using a Pandas which is python library. Pandas has the ability to make data cleaning, transformation, and analysis much easier and faster. The statistics such as percentages, were employed to summarize the survey responses and provide a quantitative analysis.

4.0 Results

4.1 Demographic Characteristics

Age

The age distribution indicates a broad age-based representation. Majority of the participants are aged between 21 – 25 years (23.0%), 31 – 35 years (20.0%) and 36 - 40 years (20.7%). This potentially impact the results by highlighting views from groups that may be more receptive to innovative financial technologies (Figure 1).

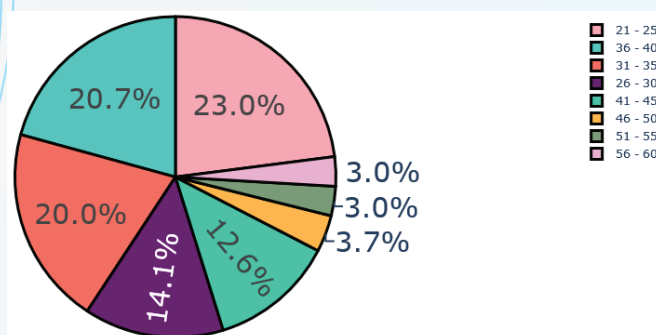


Figure 39: Respondents' age representation

Gender

There exists gender imbalance among participants, with males comprising over two-thirds of the sample (Figure 2).

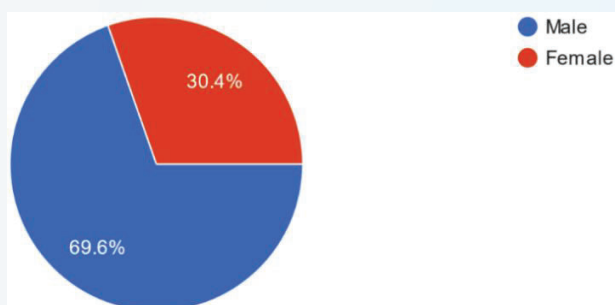


Figure 40: Respondents' gender representation

Education Level

The data suggests that the study's respondents are generally well-educated, with the majority possessing at least a bachelor's degree (55.6%), postgraduate diploma (37.8%) and diploma (4.4%) (Figure 3).

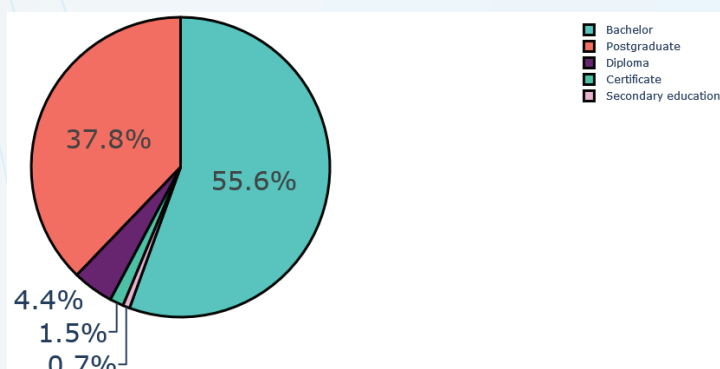


Figure 41: Respondents' education level

Region of Residence

The data indicates a strong concentration of study respondents in Dar es Salaam, which represents 53.33% of the total sample. Other regions, such as Mwanza (8.15%) and Dodoma (6.67%), have smaller but notable participation, while the remaining regions contribute minimal representation (Figure 4).

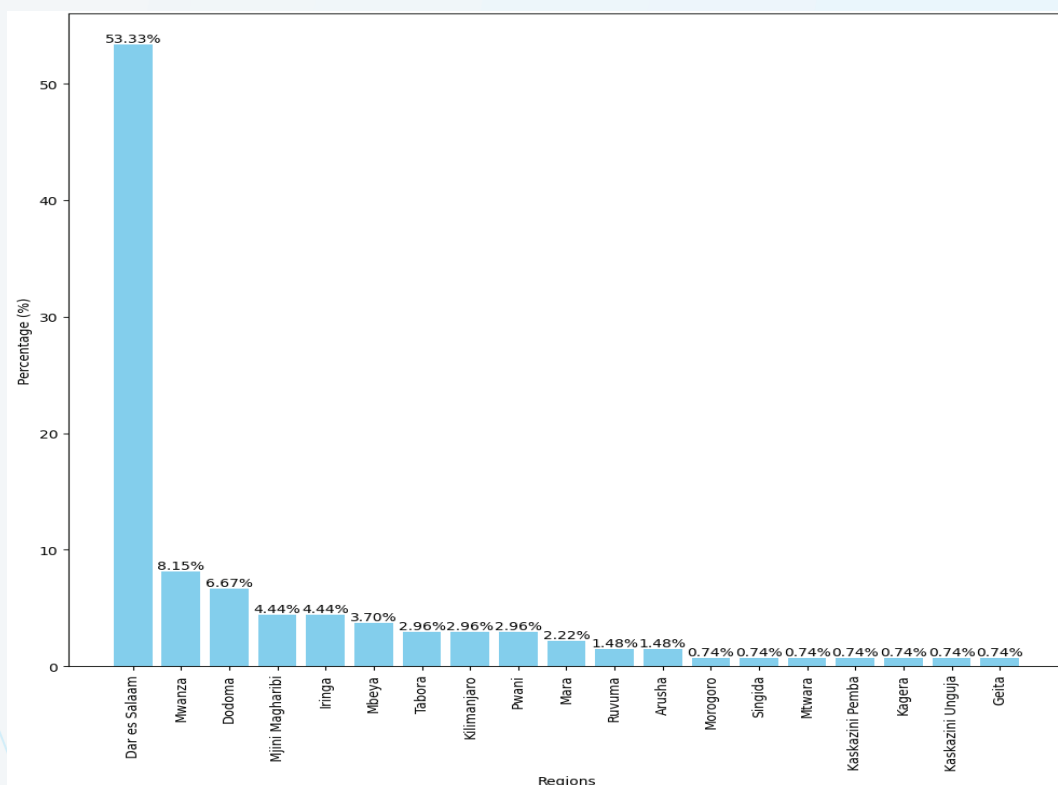


Figure 42: Respondents' region of residence

4.2 Awareness and Knowledge of Blockchain Technology

The data indicates that 84.4%, of respondents had prior knowledge of blockchain technology before participating in this survey, while 15.6% had not heard of it before (Figure 5).

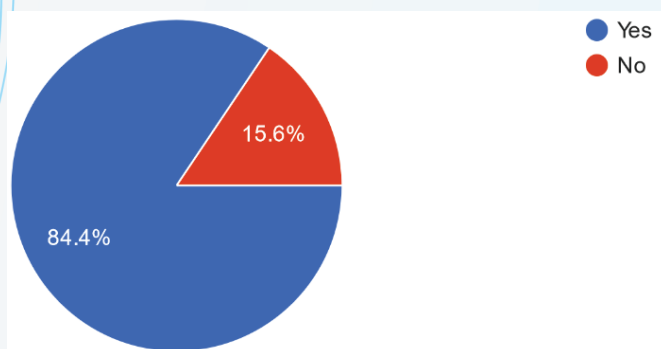


Figure 43: Heard about blockchain before this survey

Primary source of learning about blockchain technology

Majority of the respondents (63.7%) indicated that Internet is the primary source of their blockchain knowledge for most respondents, followed by academic institutions at 27.41%. Media and professional training or seminars each account for 16.3% of respondents' first exposure. Word of mouth contributes 12.59%, while 11.11% of respondents reported they had never learned about blockchain. Minimal sources such as reading and close friends account for just 0.74% each (Figure 6).

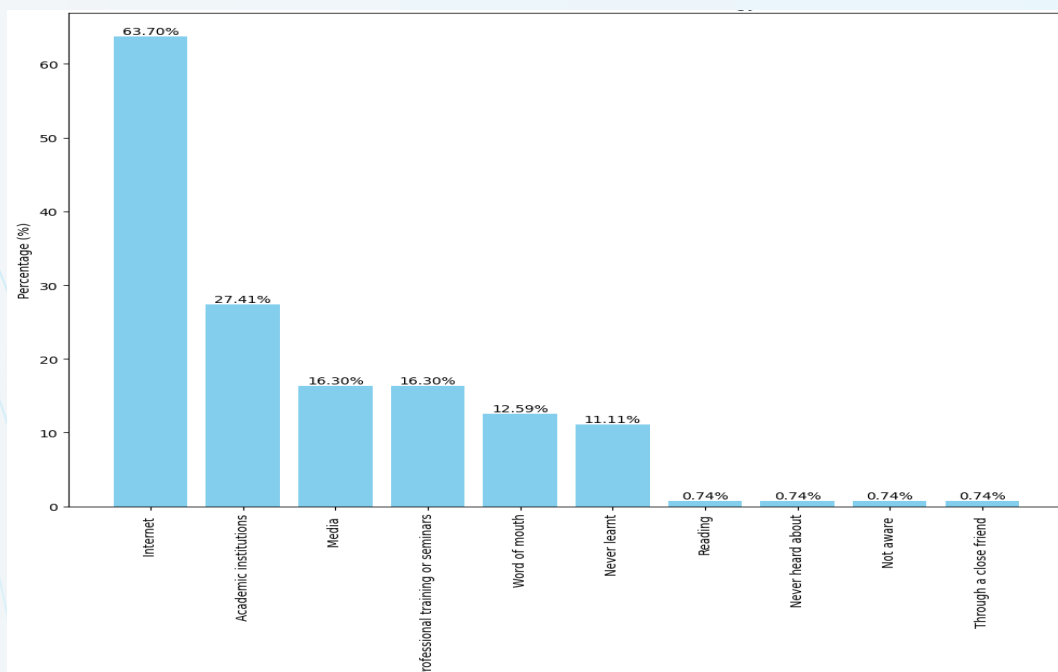


Figure 44: Primary source of learning blockchain technology

Level of understanding of blockchain technology

The majority of respondents (62.2%) possess a basic understanding of blockchain technology while at the end, 16.3%, have no understanding at all. In between, 16.3% have an intermediate understanding while 5.2% of respondents have an advanced understanding, suggesting that while there is growing interest, deeper expertise in the technology is relatively limited (Figure 7).

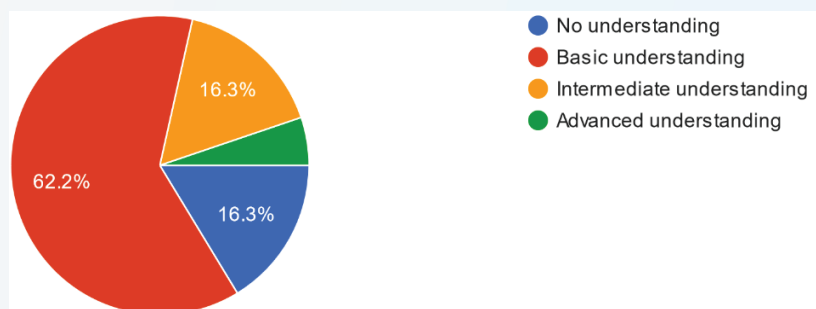


Figure 45: Level of understanding of blockchain technology

4.3 Perceptions of Blockchain Technology

Belief that blockchain technology can improve the financial services sector in Tanzania

More than two thirds of the respondents agree that blockchain technology has the potential to improve the financial sector. 1.5% of the respondents are not sure while the rest have a negative belief on the potential of blockchain technology to improve the financial sector (Figure 8).

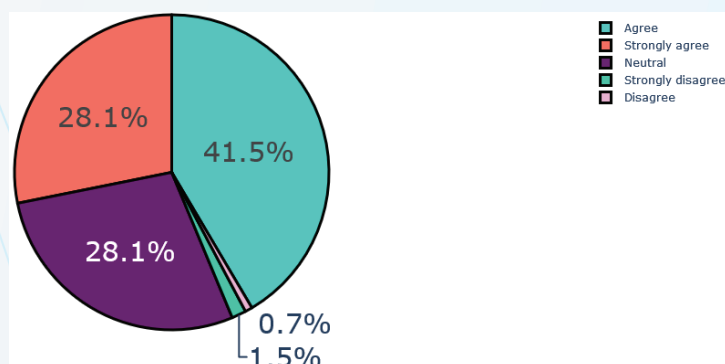


Figure 46: Belief that blockchain technology can improve the financial services sector in Tanzania

Potential Benefits of Blockchain Technology in Financial Services

Majority of the respondents assert that blockchain can enhance security (27.13%), improve efficiency (26.74%), increase transparency (25.19%), and reduce costs (18.22%). However, a

small percentage see no benefit (1.94%). A handful of respondents mentioned faster transactions and increased investment opportunities as the benefits of blockchain (Figure 9).

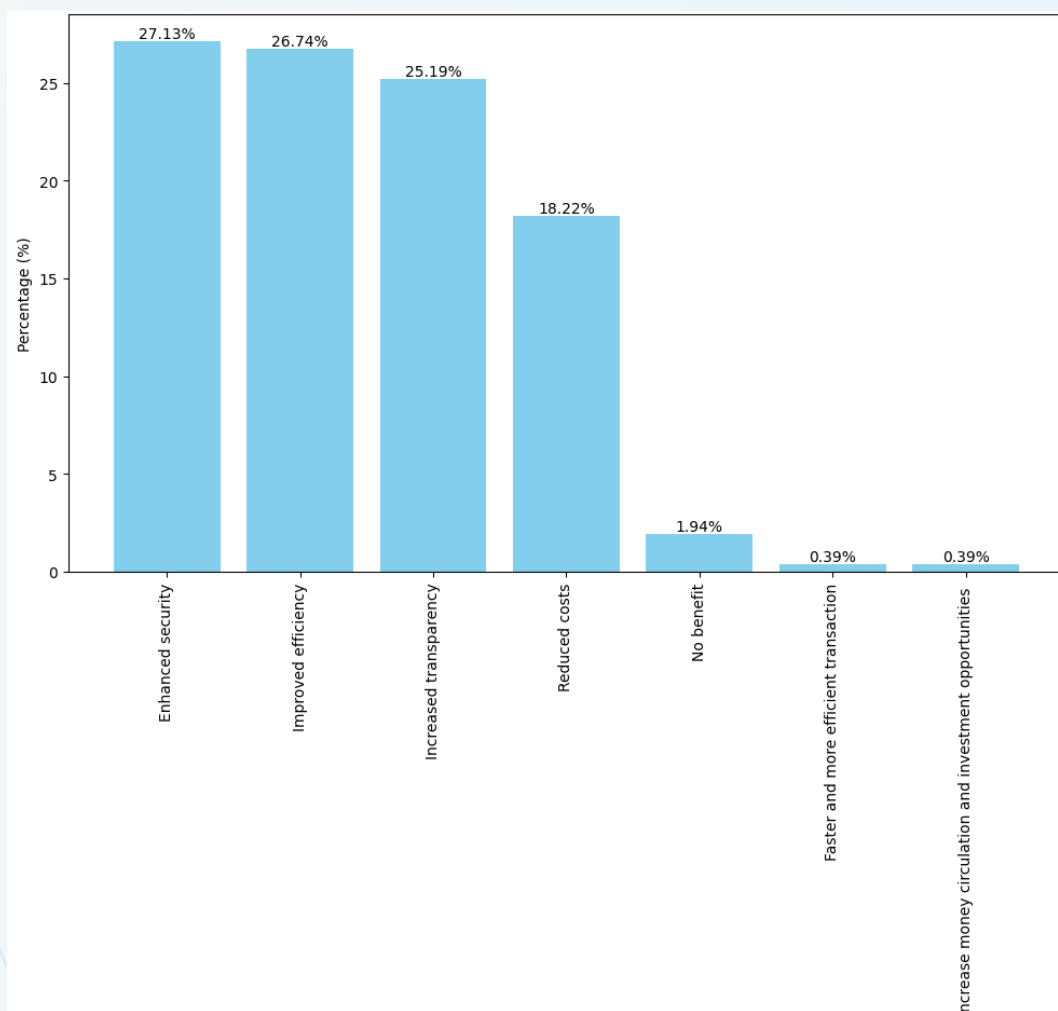


Figure 47: Benefits of blockchain technology

Potential Challenges of Implementing Blockchain Technology in Financial Services

Most respondents indicated the following challenges of implementing blockchain technology in Tanzania's financial sector are a lack of technical expertise (28.15%), technological infrastructure issues (23.51%), regulatory hurdles (17.55%), and social acceptance (15.23%). High initial costs (13.91%) are also a significant concern. Only a small percentage of respondents believe there are no challenges (1.32%), or cite a lack of knowledge about blockchain as a barrier (0.33%) (Figure 10).

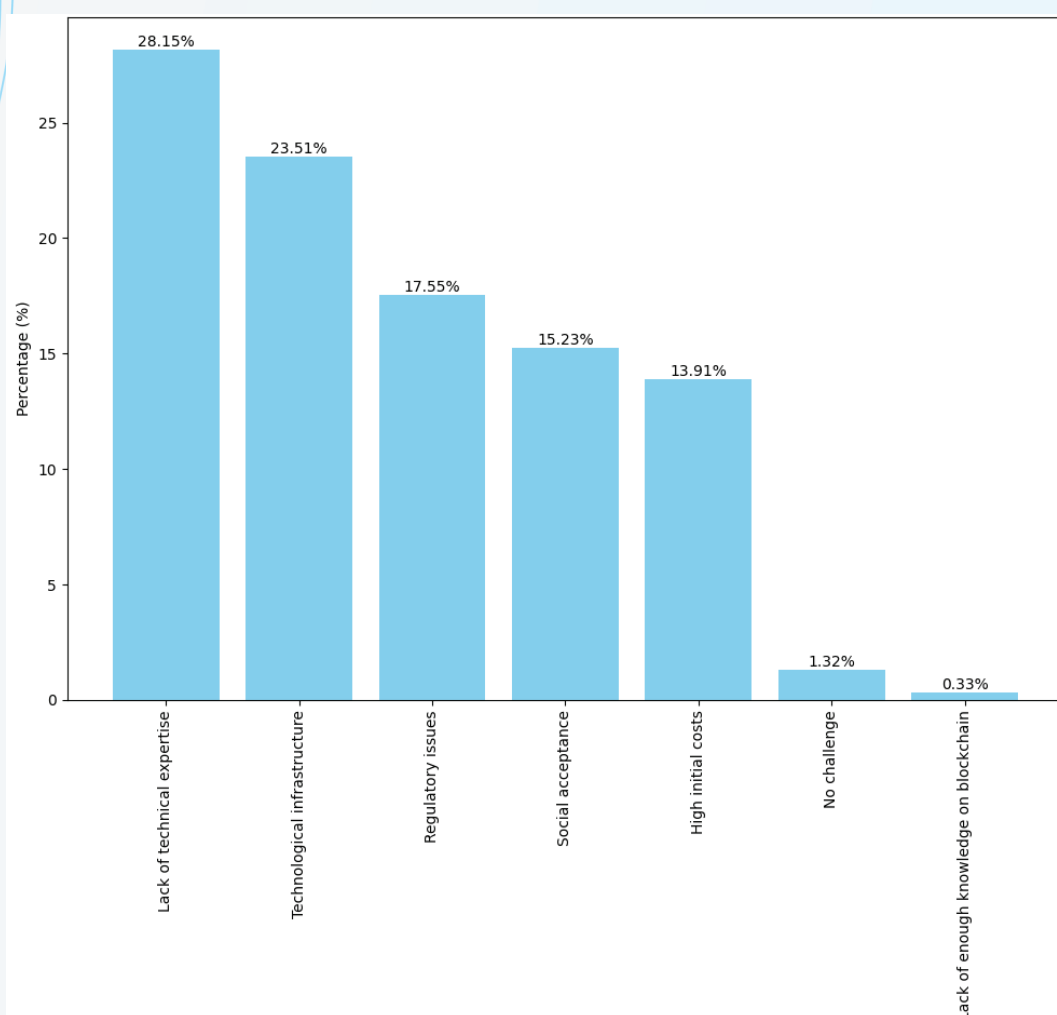


Figure 48: Challenges of implementing blockchain technology in financial services in Tanzania

4.4 Adoption and Implementation of Blockchain in Tanzania

Organization implementing or considering to implement blockchain technology

Almost two thirds of the respondents reported that blockchain has not been implemented at their workplace while 36.3% have implemented (Figure 11).

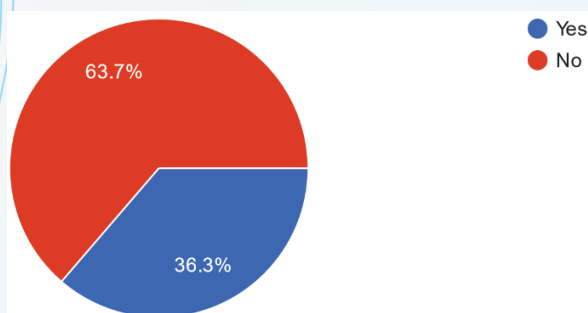


Figure 49: Organization implementing blockchain technology

Concerning the areas that applies blockchain technology; payments and transactions (19.89%), followed by record keeping (14.36%), supply chain management (11.60%) and identity verification (9.94%). 40.88% of the respondents never implement blockchain while 9.94% stated that they don't know if blockchain is implemented any of their daily activities (Figure 12).

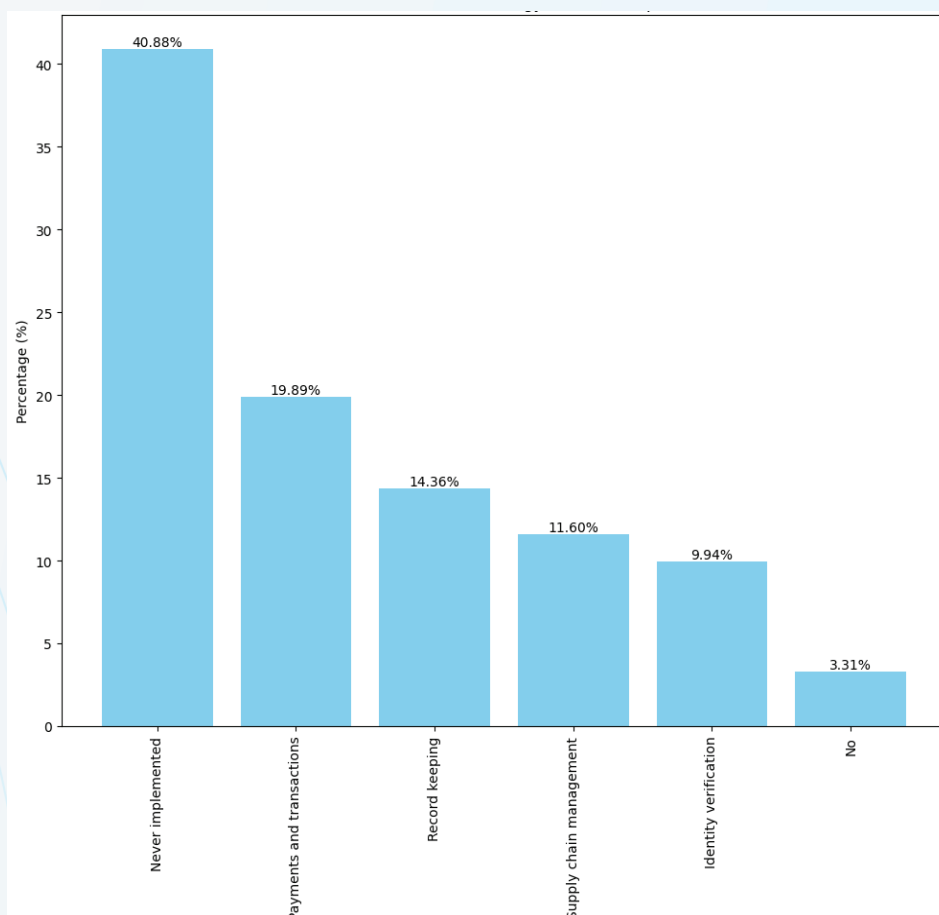


Figure 50: Areas that applies blockchain technology

The major barriers to the adoption of blockchain technology include lack of skilled personnel (26.85%), technological challenges (25.84%), regulatory challenges (16.78%), financial constraints (16.44%), and resistance to change (12.08%). A small number of respondents (0.34%) believe there are no barriers to adoption, some need awareness, and some are not sure (Figure 13).

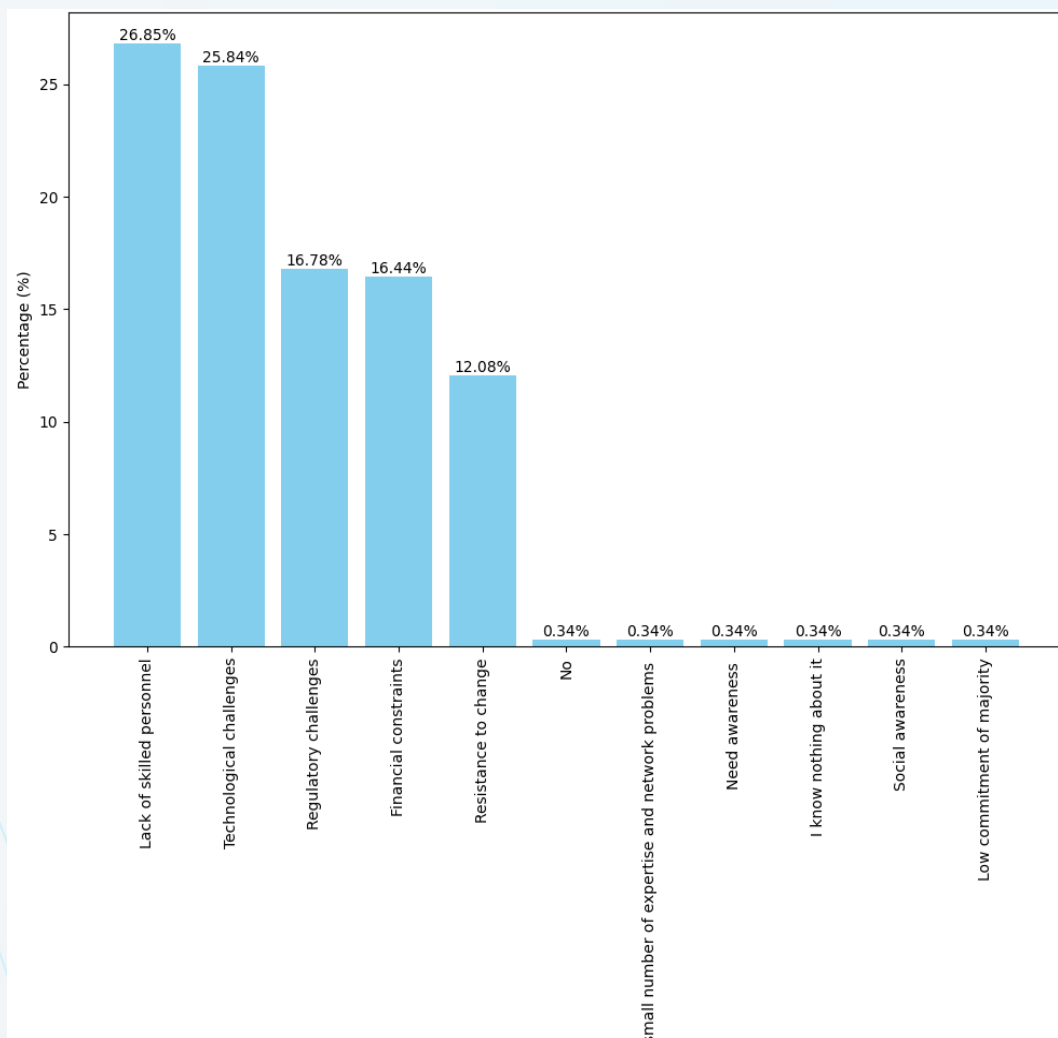


Figure 51: Barriers to the adoption of blockchain technology

4.4 Future Prospects of Blockchain Technology

The most commonly cited initiative to promote blockchain technology is technical training programs, with 27.37% of respondents. This is followed by public awareness campaigns (23.85%), infrastructure development (17.62%), government incentives (15.72%) and regulatory reforms (14.36%). A small percentage of respondents (0.54%) believe that technical

infrastructure should be a priority, while others suggest focusing on accessing the benefits of blockchain and sharing positive knowledge with citizens (Figure 14).

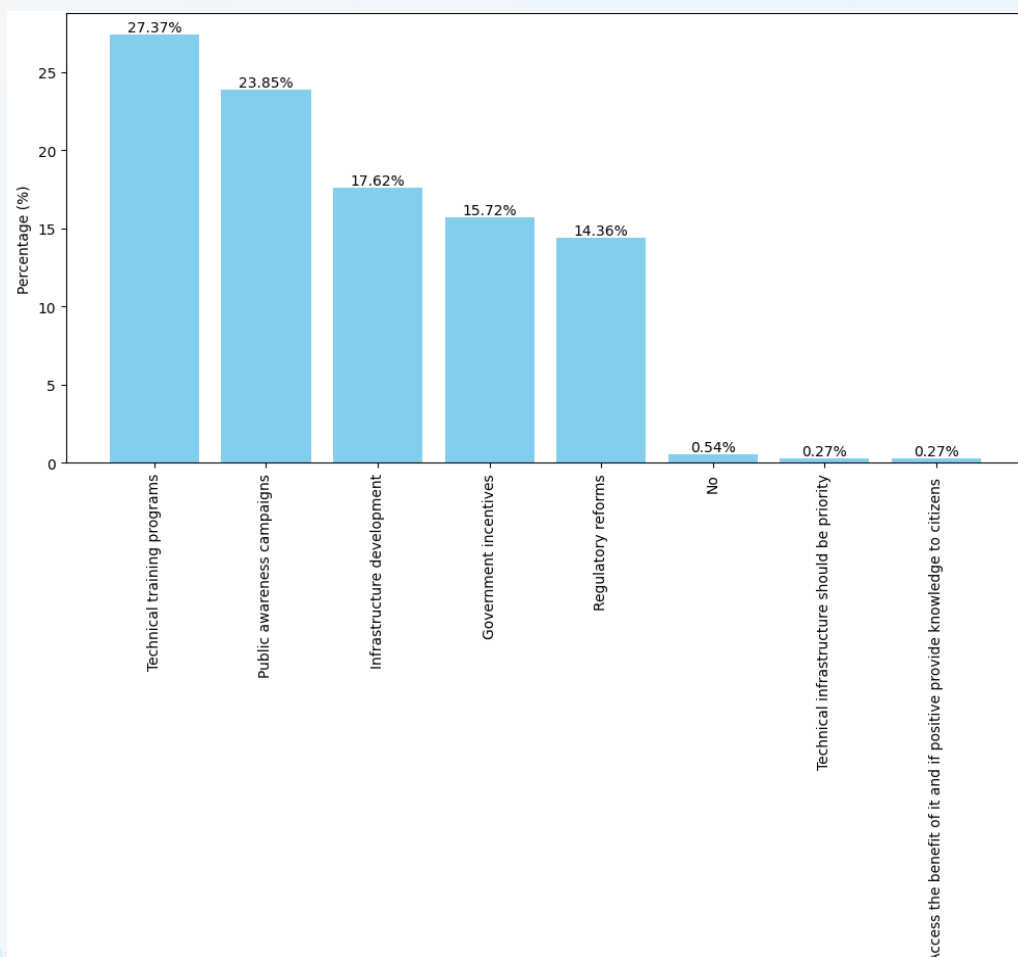


Figure 52: Steps to promote blockchain technology

4.5 Regulatory and Policy Environment

The respondents believe that enhanced cybersecurity regulations (27.55%), collaboration between regulators and industry (25.17%), clearer guidelines and standards (24.49%), and incentives for innovation (21.43%) are crucial for facilitating blockchain technology adoption. 0.68% of the respondents are unsure. A small percentage (0.34%) no know nothing, while others suggest initiating an organizational department for blockchain in a regulator (Figure 15).

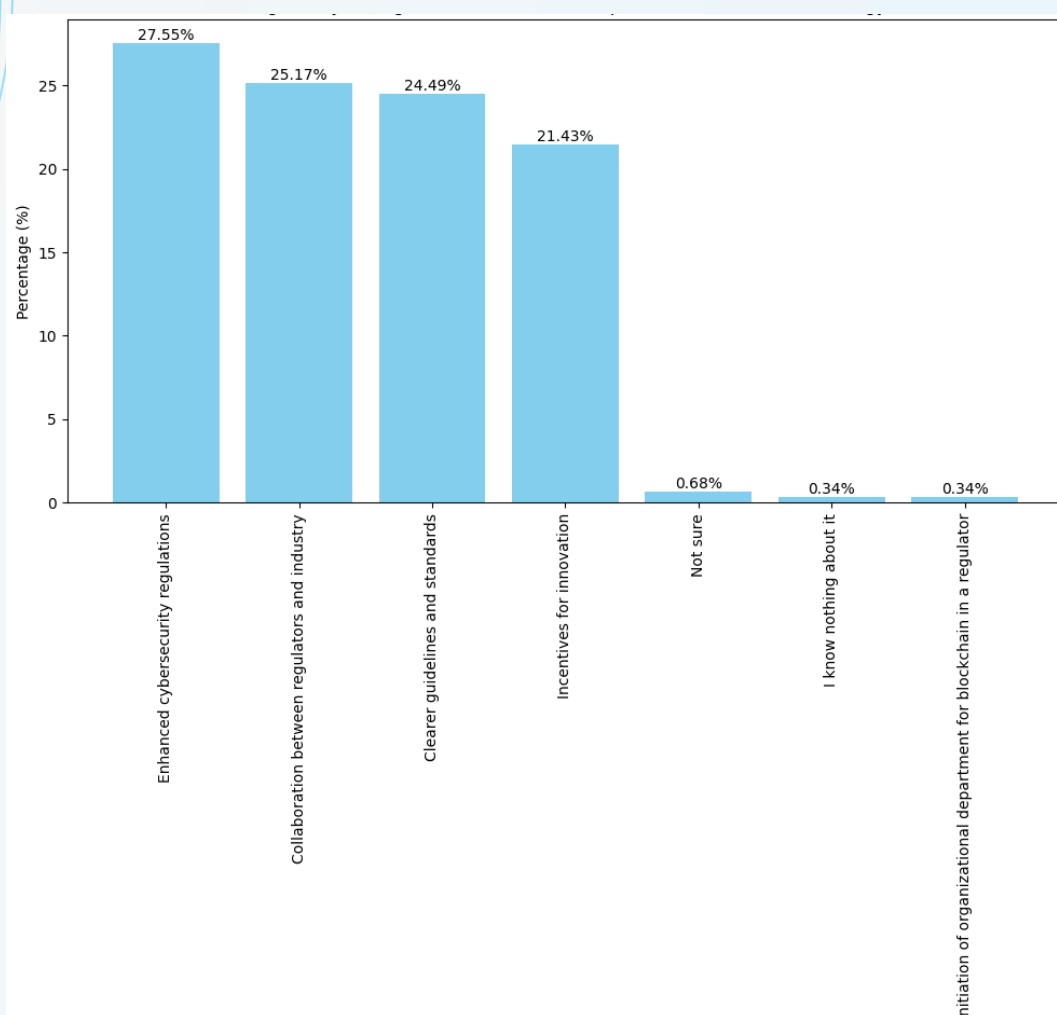


Figure 53: Regulatory changes to facilitate the adoption of blockchain technology

Proactivity of the government in promoting blockchain technology in Tanzania

More than half of the respondents indicated that the government is very proactive. Almost a quarter of the respondents asserted that the government proactive. A smaller portion, 9.6%, are neutral, while 8.9% indicated that the government is reactive. A small fraction of respondents, 4.4%, indicated that the government is very reactive (Figure 16).

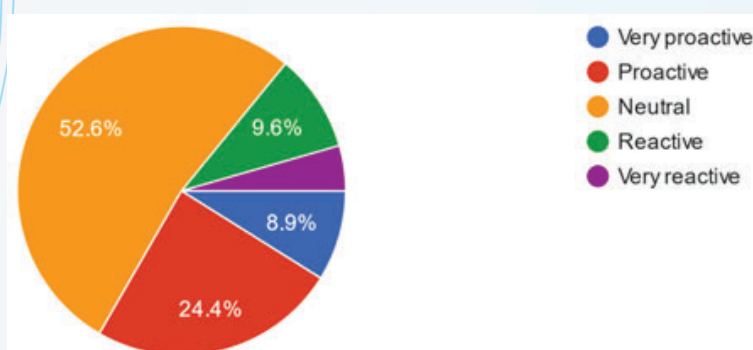


Figure 54: Role of the government

4.6 Training and Capacity Building

Sufficiency Knowledge and Expertise about Blockchain Technology

A minor portion of the respondents (2.2%) strongly agrees that there is sufficient knowledge and expertise, while 38.5% of the respondents align with this fact. 25.9% of respondents are neutral. 25.9% of respondents disagree, while 7.4%, strongly disagree (Figure 17).

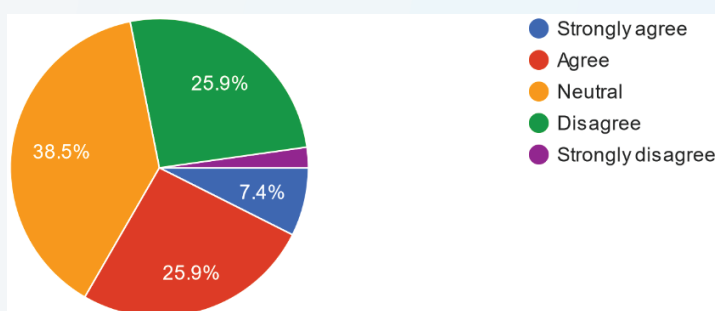


Figure 55: Existence of sufficient knowledge and expertise about blockchain technology

Training programs necessary to promote blockchain adoption in Tanzania

32.47% of the respondents cited that basic blockchain technology courses are necessary to promote the adoption of blockchain technology. Regulatory and compliance training follows with 23.25%. The third and fourth training programs are advanced technical training (21.77%) and business application workshops (21.03%). A small percentage of respondents (1.48%) indicated they don't know (Figure 18).

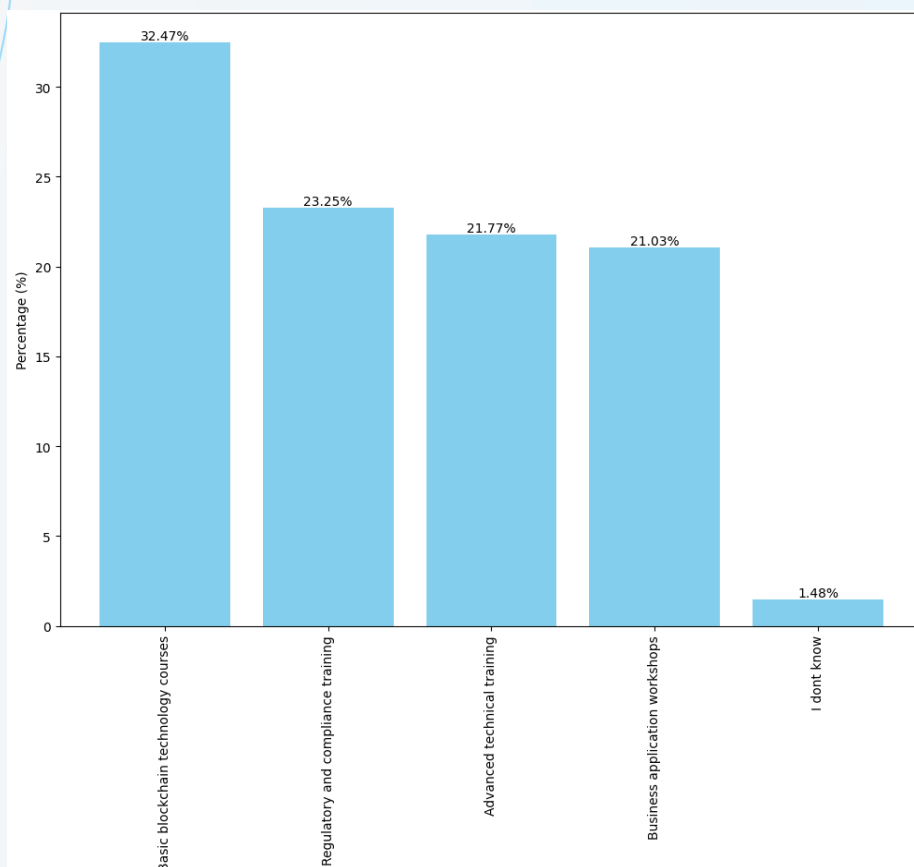


Figure 56: Training programs necessary to promote blockchain adoption in Tanzania

5.0 Discussion & Conclusion

5.1 Discussion

The results from this study reveal significant interest in applying blockchain technology in transactions, record keeping, and identity verification. This demonstrates that the financial sector could and can be one of the primary beneficiaries of this technology. The distributed nature of blockchain reduces the dependence on third parties. This reduces or eliminates the bureaucratic inefficiencies dominant in financial transactions and record management (Kombe et al., 2019; Swan, 2015). Blockchain technology in Tanzania can potentially streamline the financial services by enhancing transparency, efficiency, and trust.

On the other hand, blockchain technology implementation in Tanzania is short of barriers. Main barriers include technological, regulatory, and social challenges. The respondents identified technological infrastructure limitations, such as limited internet access and unstable electricity,

as major challenges to widespread blockchain adoption (Emmanuel Constantine & Kwang Ho, 2015).

The primary source of blockchain technology awareness is the internet and educational institutions. These channels can be leveraged for broader awareness campaigns and technical training programs to enhance blockchain literacy (Mnyawi, 2022). Despite the level of awareness of blockchain technology being relatively high but the depth of understanding is still limited. Only 5.2% indicated they have advanced knowledge in blockchain technology. This suggests that more educational initiatives are needed.

A well-informed workforce is very important for implementing and maintaining blockchain applications effectively (Natália Likavčanová, 2019). The observed knowledge gap can be a stumbling block to blockchain adoption. To fill this gap requires establishing blockchain modules in academic institutions and regular training programs.

5.2 Conclusion

The study findings reveal that blockchain technology offers potential benefits, including enhanced transparency, security, and efficiency for transactions, record management, and supply chain applications. These improvements can address some of the inefficiencies in the current systems. The adoption of blockchain faces significant barriers, including limited internet access, unreliable power, high initial costs, and a lack of regulatory framework. These barriers hinder widespread implementation of blockchain.

Limited awareness of blockchain indicates a need for educational initiatives to improve blockchain literacy. Priority must be given to technological infrastructure development, regulatory reforms and capacity building. This will ensure a successful adoption of blockchain technology.

It is very essential for the government and other stakeholders to collaborate to create a suitable environment for effective application of blockchain.

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Influence of Social Media Marketing on Sales Performance for SMEs Selling Electrical Devices in Dodoma City.

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Abstract

This study assessed the influence of social media marketing on Sales Performance for Small and Medium Enterprises selling electrical devices in Dodoma City, Tanzania as the case study. This study adopted a cross-sectional research design which aimed at data collection for two or more variables to be examined at a single point in time in order to detect variables patterns of association. The target population in this study included staff of Small and Medium Enterprises selling electrical devices in Dodoma City. The study that used a sample size of 110 respondents since they do possess vast knowledge on the effect of contract management on performance. The study applied both probability and non-probability sampling procedures in selecting the study sample. Data was collected by administering the structured questionnaires and indepth interview to respondents. After coding, data was entered into SPSS software for analysis. The study findings revealed that Instagram marketing in terms of; engagement rate, follower growth, click-through rate, conversion rate, comments and finally Instagram stories engagement had a positively significant relationship with sales performance among SME's selling electrical devices in Dodoma city. Different aspects of Twitter engagement that include; Follows, Hashtag usage, Likes (Favorites), Click through, Retweets, and finally Replies and mentions had a positively significant relationship with sales performance (Sales Revenue & Sales volume) among SMEs selling electrical devices in Dodoma city. WhatsApp communication had a positively significant relationship with sales performance among SMEs selling electrical devices in Dodoma city. The study recommended that; the government of Tanzania should promote digital literacy initiatives to improve the digital skills of SME owners and employees. Tanzania's government should make investments in enhancing the country's digital infrastructure, including internet access and e-commerce platforms.

Keywords: *Social Media, Social Media Marketing, Sales Performance.*

1.0 Introduction

The dramatic growth of the internet has led to the emergence of two important phenomena: social media and online search engines. Social media is a term that has become ubiquitous in today's digital age. The concept of social media has fundamentally transformed the way individuals communicate, interact, and consume information in both personal and professional spheres (Jayaraman, Barathi, Babu, Girija, & Kapila, 2024).

Social media refers to a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content (Kaplan, & Mazurek, 2018). These include Facebook, Twitter, WhatsApp, Instagram, YouTube and LinkedIn, amongst others. The emergency of social media has made firms to introduce marketing strategies which associate the electronic word which actually attracts and influences customer purchasing behaviors (Cabales, Carungay, Legaspi, Bacatan, & Bacatan, 2023; Shauri, Magaria, & Masanyiwa, 2023).

Social media is centered on connectivity and interactivity, enabling users to form communities through friend requests, follows, and groups (Thomas et al., 2017). It emphasizes user-generated content, allowing people to share their creativity globally (Ausat, 2023; Stsiampkouskaya et al., 2021). In business, social media acts as a direct communication channel between companies and customers, driving the rise of social media marketing to promote products and services (Felix et al., 2017). By 2023, more than 4.7 billion people used social media, with chat and messaging apps being the most popular (Dollarhide, 2023).

Sales performance, often measured by revenue and customer retention, is crucial for business success (Mullins et al., 2020). Small and Medium Enterprises (SMEs), defined by size and revenue, play a key role in employment and economic growth, particularly in Tanzania, where they range from retail shops to manufacturing businesses (Liberto, 2023; Al-Awlaqi et al., 2018). Social media is increasingly important for SMEs, offering new avenues for marketing and customer engagement, as highlighted in global literature. Globally, the acceptance, usage and popularity of social media has grown tremendously in the last few decades in well-developed countries and developed nations in the world (Ashley & Tuten, 2015; Ortiz-Ospina, 2019). In Italy, the adoption of social media (SM) resources helped Gamma to tap into new markets and thus survive and face the downturn of its original market. SM represented a strategic resource to implement an effective business networking effort (Bocconcelli, Cioppi, & Pagano, 2017). Over 50 % of U.S. respondents check their private e-mail account relatively ten times every day, and it's without a doubt, their furthestmost popular way to receive updates from brands (Blankenship, 2024). Muhit, (2022) revealed a positive association between social media engagement and sales

growth, indicating that SMEs selling electrical devices that actively used social media platforms experienced higher sales revenues compared to those that did not. In Jodarn, Akaileh, et al., (2023) noted that social media had a significant effect on post-purchase behavior on electrical device buyers in Jordan.

In the African context, e-mail has a profoundly positive influence on consumer buying decisions in two phases (post-purchase) and information research in Egypt (Omar, & Atteya, 2020). In Ethiopia, social media marketing has strategic role and social media marketing strategy (Taddes, 2021). In Nigeria, there has been a paradigm shift and the traditional means of marketing (that is television, radio, newspapers and magazines) do not suffice on their own anymore, given the abundance of loop holes inherent in advertising via these mediums especially in the aspect of feedback, online/social media advertising has gained grounds (Oyekan, 2022). In South Africa, Rosário, & Dias, (2023) and Hudders, et al., (2021) noted that, social media marketing strategies such as sponsored posts and influencer partnerships, achieved higher sales outcomes sales performance in the electrical devices industry.

In the East African perspective, in Kenya, there email marketing, online marketing, search engine marketing, and blog marketing as digital marketing techniques had a significant influence on business performance (Njau and Karugu, 2014). Olonde, (2017) also stressed that in Kenya, email marketing and social media marketing had significant impact on SMEs sales growth and to a great extent. Mobile marketing, search engine optimization (SEO) marketing, pay-per-click (P.P.C), and online marketing all had a significant effect on SMEs' sales growth and to a moderate extent. In Tanzania's context, Tanzania had 4.90 million social media users aged 18 and above at the start of 2023, this was equivalent to 14.8 percent of the total population aged 18 and above at that time (Heinze, Fletcher, Rashid, & Cruz, 2020).

In Tanzania's context, the Tanzanian Government defines SMEs according to sector, employment size, and capital invested in machinery. Accordingly, in the context of Tanzania SMEs are defined as micro, small and medium size enterprises in non-farm activities which include manufacturing, mining, commerce and services. A micro enterprise is defined as a firm with fewer than five employees whereas a small firm is a firm with 5 to 49 employees, a medium-enterprises is a firm with 50 to 99 employees. Any firm with 100 employees or more is regarded as a large enterprise (Isaga & Musabila, 2017). The use of social media as a form of digital media Marketing is also important for Small and Medium Enterprises (SMEs) in Tanzania including those SMEs selling electrical devices, which contributes much to economic development. Social media platforms have provided a cost-effective way to reach a wide audience without the hefty expenses associated with traditional marketing methods (Kazungu & Panga, 2015).

The Social Media Stats in United Republic of Tanzania as of July 2023 indicates that 31.95% use Facebook, 20.01% use Twitter, 17.42% use YouTube, 16.47% use Pinterest, 11.26% use

Instagram and finally 2.36% use LinkedIn according to Statista (2023). Tanzania's Social Media Advertising market also projected to grow by 4.82% (2023-2027) resulting in a market volume of US\$11m in 2027 (Statista, 2023). The reviews and debates above demonstrate that social media use is related to SMEs' performance, in part because these platforms have been found to be efficient in terms of cost and are linked to market success and consumer happiness. The use of social media affects SMEs' innovation and branding as well (Shauri, Magaria, & Masanyiwa, 2023).

Despite that Kakumbi and Phiri (2022) have observed, most SMEs have not been generally enthusiastic in their involvement with electronic commerce including social media. While Facebook undoubtedly plays a crucial role in the social media landscape, this research journey sought to navigate the complexities and potential pitfalls associated with relying solely on one platform (Facebook) that has attracted attention from different scholars much as other social media are being used by business to ensure that sales increase (Ong, & Toh, 2023).

As more consumers rely on online channels for research and purchases, SMEs must adopt effective digital marketing strategies to stay competitive (Arobo, 2022). However, SMEs selling electrical devices in Dodoma City struggle due to limited knowledge, resources, and expertise in leveraging social media (Filali & Faraj, 2022). These businesses face challenges navigating digital marketing complexities, such as platform selection and content creation, which affect sales performance (Shauri, Magaria, & Masanyiwa, 2023). Despite forming a vital part of the local economy, many SMEs are hindered by these obstacles, leaving them behind competitors who have successfully embraced social media (Costa & Castro, 2021)..

Despite the widespread recognition of social media as a powerful marketing tool, many SMEs in Dodoma City struggle to effectively leverage it to drive sales (Hamisi, 2017). The pivotal role of media marketing on Sales Performance for SMEs selling electrical devices in Dodoma City remains largely absent from scholarly discourse. Therefore, there is inadequate information which shows strong connection between theory used and social media marketing thus leaving a critical gap in our understanding of its effect. Ultimately, the goal of this study was to bridge this gap and empower SMEs to harness the full potential of social media marketing to drive sales growth and business success. Thus, this study sought to bridge the gap by instigating the influence of Social Media Marketing on Sales Performance for SMEs selling electrical devices in Dodoma City, Tanzania.

1.2 Specific Objectives

To determine the influence of Instagram marketing on sales performance of SMEs selling electrical devices in Dodoma City,

To examine the influence of Twitter engagement on sales performance of SMEs selling electrical devices in Dodoma City, and

To find out the influence of WhatsApp Communication on sales performance of SMEs selling electrical devices in Dodoma City

2.0 Literature Review

2.1 Theoretical Literature review Influence of Social Media Marketing on Sales Performance

The analysis of this study was draw from the Diffusion of Innovation Theory.

Diffusion of Innovation Theory

The Diffusion of Innovation (DOI) Theory, developed by E.M. Rogers in 1962, explains how ideas or products gain momentum and spread within a population (Miller, 2015). The diffusion process results in individuals adopting new behaviors, such as using a new product. Key elements include the concept of innovation, defined as an idea perceived as new by individuals (Rogers, 2003). An innovation may have existed for a long time but remains relevant if perceived as new. Rogers also noted a lack of research on technology clusters, which comprise interrelated technological elements (Rogers, 2003). Uncertainty can hinder the adoption of innovations, as the consequences of adoption or rejection may affect individuals or social systems (Rogers, 2003). Understanding these dynamics is crucial for promoting successful innovation adoption. The Diffusion of Innovation (DOI) theory was crucial to this study because it focuses on how new practices, like social media marketing, are adopted in specific contexts (Morone & Taylor, 2010). The theory provides a framework for analyzing the spread of social media strategies and their impact on sales performance among SMEs in Dodoma City (Wejnert, 2002). By categorizing businesses based on their willingness to adopt innovations, the DOI theory aligns with varying adoption behaviors. This approach helps explore the relationship between innovation adoption and business success in digital marketing.

2.2 Empirical literature review

Yosep, et al., (2021) aimed at finding out whether digital marketing platforms affected business performance through A mini-review approach in Malaysia. The study found various digital marketing strategies (social media) that micro-entrepreneurs used to develop, introduce, and promote their products, such as Facebook, Instagram, Youtube, Twitter, Tiktok and others. These platforms were the cheapest and most comfortable tools for creating excellent marketing contents. Also, digital marketing was used for promoting and branding activities in a wide range of marketing activities without spending a lot of money. The study concluded that digital marketing was one modern evolution platforms in marketing activities that highly depends on technology to create creative marketing content and product information. From the reviewed

study, there was a gap on the specific effect of Instagram marketing, Twitter engagement, WhatsApp communication, on sales performance.

Winarso, et al., (2023) assessed the impact of social media and Innovation Strategy on the Marketing Performance of Small and Medium Sized Enterprises (SMEs) in Bekasi City, Indonesia. The reviewed study showed that there was a positive relationship between social media and the performance of SME businesses. However, the study was too general and did not specify the key social medias. On the other hand, the study was carried out in Indonesia. This left a gap as far as the influence of; Instagram marketing, Twitter engagement, WhatsApp communication on sales performance among small and medium-sized enterprises in Dodoma city is concerned.

Kierian, et al., (2021) assessed the influence of “WhatsApp Advertisement” on the patronage of small business Start-ups and medium scale enterprises in Uyo, Nigeria. The study found out that most of the small business start-up samples immediately resorted to the use of WhatsApp advertisement to help maintain and increase sales during the coronavirus period. The great challenge mitigating the effective use of WhatsApp, as shown by the study, was the reach of WhatsApp advertisement which is limited to the contact list of the people advertising. Also, the susceptibility of the platform to fraud was another key challenge. There is a significant relationship WhatsApp advertisement and small business performance in the Nigerian context. However, there was a gap on the specific effect SMEs dealing with electrical devices in Dodoma city thus prompting this study.

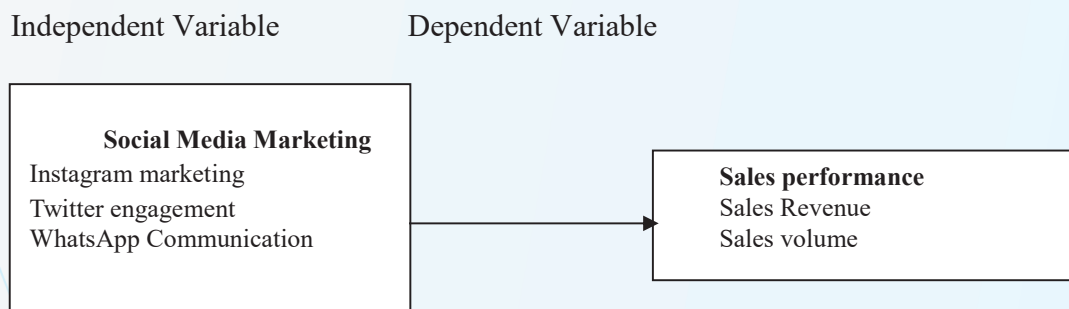
Kajongwe, *et al.*, (2020) analyse how social media impact on performance of Small and Medium Enterprises (SMEs) in Zimbabwe. Study results indicated that social media has a positive relationship with business strategy of SMEs in Zimbabwe. The study results also showed that social media positively improved brand awareness, customer relation and productivity of SMEs in Zimbabwe. From the reviewed study, there was a gap on the specific effect social media on SMEs dealing with electrical devices in Dodoma’s context.

Silvano & Mbogo, (2022) investigated the impact of Social Media Marketing on Small Businesses’ Sales Performance: A Case of Women Clothing Stores in Nyamagana District, Tanzania. The result obtained through regression analysis established that Facebook had impacts on the sales performance of small business (Beta = .199, $P < .020$). The results obtained in this aspect showd that the increase in the use of Facebook by 1 unit attributes increase of performance of small business by 0.20. On Instagram, the findings obtained through linear regression established that Instagram has a significant impact on the sales performance of small business (Beta = .369, $P < .947$). The reviewed study addressed Instagram marketing however when it comes to Dodoma city, nothing is published thus prompting the need for a comprehensive study on the specific effect of Instagram marketing.

2.3 Conceptual Framework

The theoretical framework of this study provides the foundation for understanding the research problem (Mugenda & Mugenda, 2003). It highlights major social media marketing platforms, including Facebook, Instagram, and Twitter, each with unique demographics and features. Social media marketing leverages connection, interaction, and customer data (Kumar et al., 2016) to engage customers and promote products. In this context, sales performance is evaluated based on a company's ability to sell products, measured through sales revenue, sales volume, and conversion rate (Kelwig, 2022). This framework guides the exploration of social media's impact on SMEs in Dodoma City. The DOI theory was developed to investigate the new ideas and technology are perceived by individuals as well as firms. The innovation helps to determine the factors that affect the adoption rate of technological innovation by individuals as well as firms. The Diffusion of Innovation theory is pertinent to this study because it offers a strong framework to investigate how the adoption of social media strategies spreads and affects business outcomes as the study explores the effect of social media marketing on sales performance among small and medium-sized enterprises (SMEs) in Dodoma city. The figure below shows the cause effect relationship between the social media marketing techniques and sales performance.

Figure 57: Conceptual Framework



Source: Researcher (2023)

3.0 Research Methodology

3.1 Research design

This study adopted a cross-sectional research design which aimed at data collection for two or more variables to be examined at a single point in time in order to detect variables patterns of association. The design was preferred because of the consistency nature of objectives aiming to reveal relationships among variables and allowing inferences to be made on the effects of explanatory variables on an outcome variable (Burns and Burns, 2012). Additionally, the study also applied a mixed approach to include both qualitative and quantitative approaches. Qualitative data provided detailed information inform of statements allowing room to study

issues in detail (Silverman, 2005) while quantitative design enhanced the statistical inferences by linking the independent and dependent variables (Creswell, 2014).

3.2 Area of the Study

The area of the study refers to formal delineated geographical boundaries, (Msabila and Nalaila, 2013). The study was conducted in Dodoma city which is the legislative capital of Tanzania and is the administrative capital of both Dodoma Municipal Council and the entire Dodoma Region, with a population of 765,179. The area was used as the area of study due to the fact that Dodoma City, with its growing urban population, presents a promising market for SMEs selling electrical devices. With the city's increasing demand for modern appliances and gadgets, there was a significant opportunity for businesses in this sector to thrive. Therefore, the presence of all these, makes Dodoma an interesting place to study the potential ways for SMEs selling electrical devices.

3.3 Sampling Design and Procedures

Simple Random Sampling was used to select respondents from the entire population of SMEs selling electrical devices in Dodoma City, ensuring good representation, unbiased results, and convenience. The sample size was determined based on confidence, margin of error, and variability within the population. Purposive Sampling techniques were employed to select key respondents who provided qualitative data, based on unique characteristics and experience. Both methods were used to ensure accurate and reliable results.

3.4 Data Analysis Methods

The data acquired was analysed based on an overview of the identified purpose of the study in the design of the research. The data analysis process included; editing, coding as well as cleaning (Hussain, 2020). Descriptive and inferential statistics with the aid of Social Sciences Statistical Package (SPSS) was used to analyse the collected qualitative and quantitative data. For every objective, data was analysed in the following ways;

3.4.1 Descriptive Analysis

The data collected was analyzed to assess the influence of social media marketing on sales performance of SMEs selling electrical devices in Dodoma City. A multiple regression analysis technique was employed, and the results were computed basing on the models below from a single variable influence to a combined influence as follows;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon \dots\dots\dots(1)$$

Where; Y= Dependent variable is Sales Performance. X_1 = Instagram marketing, X_2 = Twitter engagement, X_3 = WhatsApp communication and ϵ =error term

3.4.2 Qualitative data analysis (content/Thematic Analysis)

The study used content analysis and relationship analysis to analyze qualitative data from interviews and focus group discussions. It categorized responses into manageable categories, and explored the relationship between Social Media Marketing and Sales Performance for SMEs in Dodoma City, Tanzania.

4.0 Findings and Discussion

4.1 Demographic characteristics of Respondents

The findings from Table 1 revealed that about 63.2% of respondents were male and only 36.8 were female. This implies that most of the staff of SMEs selling electrical devices in Dodoma city were male, a fact that may be attributed to the economically lucrative nature and relatively large capital that is a requirement involved to start up this business.

Table 50: Demographic profile of respondents

Variable	Response	Frequency	Percentage (%)
Gender	Male	139	63.2
	Female	81	36.8
	Total	220	100.0
Age	Less than 30	39	17.7
	31 to 35 years	26	11.8
	36 to 40 years	29	13.2
	41 to 45 years	87	39.5
	46 to 50 years	24	10.9
	Above 51 years	15	6.8
	Total	220	100
Education level	Informal	13	5.9
	Primary	16	7.3
	Secondary	24	10.9
	Certificate	14	6.4
	Diploma	66	30.0
	Bachelor's	67	30.5
	Master's degree	14	6.4
	PhD	3	1.4
	Others	3	1.4

	Total	220	100
Working Experience	Less than a year	15	6.8
	1 to 4 years	14	6.4
	5 to 8 years	117	53.2
	9 to 12 years	51	23.2
	Above 12 years	23	10.5
	Total	220	100%
The capital investment for your business	Less than TZS 5 million	16	7.3
	Between TZS 5 million to TZS 200 million	141	64.1
	Above TZS 200 million	63	28.6
	Total	220	100.0

Source: Study findings (2024)

Additionally, it was also observed that the majority of the respondents were aged 41 to 45 years represented by 39.5%, followed by respondents aged between 36-40 years constitute 17.7% of the respondents. Furthermore, 13.2% of the respondents were aged 36 to 40 years. Whilst 11.8%, 10.9%, and 6.8% were aged; 31 to 35 years, 46 to 50 years and above 51 years respectively. This implies that, SMEs selling electrical devices in Dodoma city had a young and strong labour force.

In terms of the level of education attained, the results further indicated that the majority that is 30.5% of the respondents had a Bachelor's degree as represented. This was followed by respondents with a Diploma represented by 30% of the respondents. Informal education had been attained by 5.9%, Primary education had been attained by 7.3%, Secondary education had been attained by 10.9%, Certificate had been attained by 6.4%, Master's degree had been attained by 6.4%, PhD and others such as professional courses had been attained by 1.4% respectively. Generally, this implies that most staff of SMEs selling electrical devices in Dodoma city had attained diplomas and degrees.

Regarding the working experience, the majority that is 53.2% of the respondents, had 5 to 8 years of working experience in SMEs selling electrical devices in Dodoma city. This was followed by 23.3% of the respondents had 9 to 12 years of working experience whilst only 6.8%, 6.4% and 10.5% of the respondents had Less than a year, 1 to 4 years and finally above 12 years of working experience. Generally, most of the staff had worked at SMEs selling electrical devices in Dodoma city for a relatively good number of years so they were in a better position to provide information regarding the influence of social media Marketing on Sales Performance for Small and Medium Enterprises selling electrical devices in Dodoma City.

Regarding the capital investment in the business, majority of the respondents that 64.1% of the respondents had invested between TZS 5Million to TZS 200 million, only 7.3% had invested less than TZS 5 million and finally 28.6% of the respondents had invested over TZS 200 million. Generally, the study findings show that most respondents had the capital investment between TZS 5 million to TZS 200 million.

4.2 Social media platforms most commonly used by SME in Dodoma city for marketing their electrical devices.

Here the study sought to find out the social media platforms most commonly used by SME in Dodoma city for marketing their electrical devices.

Table 51: Social media platforms most commonly used by SME in Dodoma city for marketing their electrical devices.

Response	Frequency	Percentage (%)
Instagram	64	29.1
Twitter	69	31.4
WhatsApp	87	39.5
Total	220	100.0

Source: Study findings (2024)

The study findings show that 29.1%, 31.4% and 39.5 of the respondents used Instagram Twitter and WhatsApp respectively among SMEs in Dodoma city selling electrical devices. Generally, between Instagram, Twitter and WhatsApp, it was noted that WhatsApp Social media platform was the most commonly used among SMEs in Dodoma city selling electrical devices.

4.3 The influence of social media marketing on sales performance among SMEs selling electrical devices in Dodoma city.

Here the study looked at the extent to which Instagram marketing, twitter engagement and whatsapp communication influenced sales performance among SME's selling electrical devices in Dodoma city.

Table 52: Multiple Regression Analysis results on the effect of social media marketing on sales performance among SME's selling electrical devices in Dodoma city.

Coefficients ^a							
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1	(Constant .236)	.035		6.746	.000		
	Instagram .404 marketing	.063	.504	6.700	.000	.093	10.772
	Twitter .351 engagement	.079	.425	4.472	.000	.062	16.075
	WhatsApp .486 communication	.064	.577	7.542	.000	.096	10.420

a. Dependent Variable: Sales performance (Sales Revenue & Sales volume)

From the above table, using this equation of a line of Instagram marketing, Twitter, and WhatsApp was used to predict sales performance through the equation of $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$.

From the findings in Table 3, an equation of $Y = 0.236 + 0.404X_1 + 0.351X_2 + 0.486X_3 + \epsilon$ was developed that shows that, Instagram marketing had a significant relationship with sales performance with 0.404 being the slope for Instagram, it was found that it was significant (0.000) with the T value of 6.700.

Twitter engagement had a significant relationship with sales performance with 0.351 being the slope for Twitter engagement, it was found that it was significant (0.000) with the T value of 4.472. WhatsApp communication had a significant relationship with sales performance with 0.486 being the slope for WhatsApp communication, it was found that it was significant (0.000) with the T value of 7.542.

The multiple regression analysis results presented in the Table above shed light on the relationship between social media marketing strategies and sales performance among small and medium-sized enterprises (SMEs) specializing in the sale of electrical devices in Dodoma city. The regression model reveals several significant insights. Firstly, the constant coefficient (.236) signifies the baseline level of sales performance that is attributed to factors not accounted for in the model. Moving on to the predictors, Instagram marketing emerges as a significant driver of sales performance, with a coefficient of .404. This indicates that for every unit increase in Instagram marketing activities, there is a corresponding increase in sales performance by .404 units. The standardized coefficient (Beta) of .504 emphasizes the relatively stronger impact of Instagram marketing compared to other predictors, signifying its pivotal role in influencing sales outcomes among SMEs in the electrical devices sector. Furthermore, WhatsApp communication, both through Twitter and WhatsApp itself, also exhibits notable effects on sales performance. The coefficients of .351 and .486 for Twitter and WhatsApp communication, respectively, signify their positive contributions to sales performance. These coefficients suggest that for every unit increase in WhatsApp communication activities, there is a corresponding increase in sales performance by .351 and .486 units for Twitter and WhatsApp, respectively.

The standardized coefficients (Beta) of .425 for Twitter and .577 for WhatsApp communication emphasize the relatively strong influence of these variables on sales performance, further corroborating the significance of social media communication channels in driving sales outcomes. Additionally, the collinearity statistics provide insights into the multicollinearity among predictor variables. The tolerance values (>0.1) and low variance inflation factors (VIF) (<10) indicate that multicollinearity is not a significant concern in the model, affirming the validity of the regression results. In conclusion, the multiple regression analysis highlights the

significant impact of Instagram marketing and WhatsApp communication channels on sales performance among SMEs in the electrical devices sector in Dodoma city. These findings emphasize the importance of leveraging social media marketing and communication strategies to enhance sales outcomes and underscore the potential for strategic interventions in these domains to drive business growth and success.

4.3.2 The effect of Instagram marketing on sales performance among SME's selling electrical devices in Dodoma city.

Table 53: Analysis of variance

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	87.401	6	14.567	278.417	.000 ^b
	Residual	11.144	213	.052		
	Total	98.545	219			

a. Dependent Variable: Sales performance (Sales Revenue & Sales volume)

b. Predictors: (Constant), Instagram stories engagement, Follower growth, Comments, Conversion rate, Engagement rate, Click-through rate

The results in Table 4 above indicate that the regression model was significant in predicting how Instagram marketing affect the sales performance (sales revenue and sales volume) among SMEs selling electrical devices in Dodoma city because the p-value was $P=0.000$ which is less than 0.05 ($P<0.05$).

Table 54: Multiple Regression Analysis results on the effect of Instagram marketing on sales performance among SME's selling electrical devices in Dodoma city.

Coefficients ^a

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.098	.038		2.561	.011		
	Engagement rate	.133	.136	.153	.977	.030	.022	46.179
	Follower growth	.294	.042	.309	6.942	.000	.268	3.734
	Click-through rate	.122	.135	.145	.905	.036	.021	48.200
	Conversion rate	.050	.113	.058	.439	.661	.030	32.875
	Comments	.701	.057	.782	12.220	.000	.130	7.705
	Instagram stories engagement	.146	.139	.167	1.050	.029	.021	47.590

a. Dependent Variable: Sales performance (Sales Revenue & Sales volume)

The findings indicate that engagement rate had a positive statistically significant relationship with sales performance (sales revenue and sales volume) among SMEs selling electrical devices in Dodoma city at the p-value less than 5% ($p < 0.030$) and with the coefficient at 0.153. This implies that the unit change in engagement rate on average increased the sales performance by 15.3%. Therefore, the more the engagement rate increases, it will lead to increased sales performance in terms of; sales revenue and sales volume. Similarly, the follower growth was positively associated with sales performance at 0.309 with the p-value less than 5% ($p < 0.000$). This implies that the unit change in follower growth on average increased the sales performance by 30.9%. Therefore, follower growth led to increased sales performance in terms of; sales revenue and sales volume. The results revealed that click-through rate was positively associated with sales performance at 0.145 with the p-value less than 5% ($p < 0.036$). This implies that the unit increase in the click-through rate led to 14.5% increase in the sales performance in terms of; sales revenue and sales volume. The study findings in Table 6 show that conversion rate had a positively insignificant relationship with sales performance among SMEs selling electrical devices in Dodoma city with a coefficient of 0.058 and a P value of 0.661. This implies that a unit change in the conversion rate on average insignificantly increased the sales performance in terms of; sales revenue and sales volume by 5.8% which was an insignificant effect. Furthermore, the findings in Table 7 show that Comments had a positively significant relationship with the

sales performance at the p-value less than 5% ($p < 0.000$) and with the coefficient of .782. This implies that unit change in comments on average increased sales performance in terms of; sales revenue and sales volume by 78.2%. Finally, the findings indicate that Instagram stories engagement had a positive statistically significantly relationship with sales performance (sales revenue and sales volume) among SMEs selling electrical devices in Dodoma city at the p-value less than 5% ($p < 0.029$) and with the coefficient at 0.167. This implies that the unit change in Instagram stories engagement on average increased the sales performance by 16.7%. Therefore, the more the Instagram stories engagement increases, it will lead to increased sales performance in terms of; sales revenue and sales volume.

Findings on the effect of Instagram marketing on sales performance among SME's selling electrical devices in Dodoma city were supported by those from interviewee 1 who stated that; *“Instagram has made it possible for SMEs to exhibit their electrical goods through eye-catching pictures and videos, which helps to raise brand awareness among prospective clients in Dodoma and abroad. SMEs have developed a strong brand presence and gained followers by consistently publishing high-quality content on the site.”*

Interviewee 2 stated that, *“Instagram's advanced targeting features have made it possible for SMEs to target particular regions, interests, and demographics with their marketing messaging. Because of this, companies in Dodoma City can now better customize their content to appeal to their target audience, which raises the possibility of generating leads and conversions”*.

Interviewee 3 stated that, *“Instagram's likes, comments, and direct message features have encouraged communication and engagement between SMEs and their audience. SMEs can increase sales by developing trust and credibility with their followers and promptly answering their questions.”*

Generally, from the study findings, it can be noted that Instagram marketing in terms of; engagement rate, follower growth, click-through rate, conversion rate, comments and finally Instagram stories engagement had a positively significant relationship with sales performance among SME's selling electrical devices in Dodoma city. This concurs with Silvano & Mbogo, (2022) who investigated the impact of Social Media Marketing on Small Businesses' Sales Performance among Women Clothing Stores in Nyamagana District, Tanzania. The result obtained through regression analysis established that Facebook has impacts on the sales performance of small business ($\text{Beta} = .199, P < .020$). The results obtained in this aspect shows that the increase in the use of Facebook by 1 unit attributes increase of performance of small business by 0.20. On Instagram, the findings obtained through linear regression established that Instagram has a significant impact on the sales performance of small business ($\text{Beta} = .369, P < .947$).

4.3.3 The effect of Twitter engagement on sales performance among SME's selling electrical devices in Dodoma city.

Table 55: Analysis of variance

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	83.517	6	13.919	197.277	.000 ^b
	Residual	15.029	213	.071		
	Total	98.545	219			

a. Dependent Variable: Sales performance (Sales Revenue & Sales volume)

b. Predictors: (Constant), Follows, Hashtag usage, Likes (Favorites), Click throughs, Retweets, Replies and mentions

The results indicate that the regression model was significant in predicting the contribution of Twitter engagement on sales performance (sales revenue and sales volume) among SMEs selling electrical devices in Dodoma city because the p-value was 0.000 which is less than 0.05.

Table 56: Multiple Regression Analysis results on the effect of Twitter engagement on sales performance among SMEs selling electrical devices in Dodoma city.

Coefficients ^a							
		Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics	
Model		B	Std. Error	Beta	T	Sig.	Tolerance VIF
1	(Constant)	.208	.049		4.287	.000	
	Likes (Favorites)	.367	.075	.396	4.910	.000	.110 9.094

Retweets	.036	.077	.040	.464	.643	.098	10.186
Replies and mentions	.104	.096	.121	1.076	.283	.057	17.698
Click throughs	.384	.071	.481	5.434	.000	.091	10.964
Hashtag usage	.047	.039	.047	1.204	.230	.473	2.112
Follows	.151	.041	.160	3.715	.000	.385	2.601

a. Dependent Variable: Sales performance (Sales Revenue & Sales volume)

The study findings show that the coefficient of Likes (Favorites) had a positively significant relationship with sales performance (Sales Revenue & Sales volume) where the coefficient was 0.396 significant with a p-value of less than 5% ($p < 0.000$). This implies that the unit increase in the level of Likes (Favorites) led to a 39.6% increase in the overall sales performance (Sales Revenue & Sales volume). The findings also showed that Retweets had a positive but insignificant relationship with sales performance (Sales Revenue & Sales volume) with a coefficient of 0.040 and a P value of 0.643 which was greater than 5%. This implies that on average a unit increase in Retweets resulted in a 4.0% insignificant increase in sales performance (Sales Revenue & Sales volume) among SMEs selling electrical devices in Dodoma city. The results revealed that replies and mentions had a positive statistically insignificant contribution to sales performance (Sales Revenue & Sales volume) with a coefficient of 0.121 and a P-value of .057 that was greater than 5%. This implies that the unit increase in replies and mentions on average insignificantly increased sales performance (Sales Revenue & Sales volume) among SMEs selling electrical devices in Dodoma city by 12.1%.

The findings in the Table above show that Click throughs had a positive statistically significant relationship with sales performance (Sales Revenue & Sales volume) with a coefficient of 0.481 with a p-value of less than 5% ($p < 0.000$). This implies that the unit change in Click throughs on average increased sales performance (Sales Revenue & Sales volume) among SMEs selling electrical devices in Dodoma city by 48.1%. Furthermore, the findings in Table 9 show that Hashtag usage had a positively insignificant relationship with sales performance (Sales Revenue & Sales volume) with a coefficient of 0.047 and P value of 0.230 that was greater than 5%. This implies that unit increase in Hashtag usage on average insignificantly increased sales performance (Sales Revenue & Sales volume) among SMEs selling electrical devices in Dodoma city by 4.7%. Finally, the study findings show that Follows had a positive statistically significant contribution to sales performance (Sales Revenue & Sales volume) with a coefficient of 0.160. This implies that the unit increase in follows on average increased sales performance (Sales Revenue & Sales volume) among SMEs selling electrical devices in Dodoma city by 16.0%.

Findings on the effect of Twitter engagement on sales performance among SMEs selling electrical devices in Dodoma city were supported by those from; interviewee 1 who stated that; *“Well Twitter enabled SMEs in Dodoma city to have a direct line of communication with their current and potential clientele. Through proactive interaction with followers via direct messages, responses, and tweets, SMEs have answered questions, offered assistance, and cultivated connections that have boosted revenue”*. Interviewee 2 stated that, *“Twitter has made it possible for SMEs to disseminate information about their electrical equipment, promotions, and exclusive deals, which has helped to raise brand recognition and visibility among Dodoma city's Twitter users. SMEs have expanded their reach and drawn in new clients by consistently releasing interesting content and utilizing pertinent hashtags”*. Interviewee 3 stated that, *“Twitter has shown to be a great tool for SMEs in Dodoma city to take advantage of conversations, events, and issues that are hot and pertinent to their target market and sector. SMEs have increased their visibility and reputation by contributing to pertinent topics and sharing content on time, which has eventually increased sales”*.

Generally, from the study findings, it was found that different aspects of Twitter engagement that include; Follows, Hashtag usage, Likes (Favorites), Click throughs, had a positively significant relationship with sales performance (Sales Revenue & Sales volume) among SMEs selling electrical devices in Dodoma city. The findings are inline with Yosep, et al., (2021) that found various digital marketing strategies (social media) that micro-entrepreneurs used to develop, introduce, and promote their products, such as Facebook, Instagram, Youtube, Twitter, Tiktok and others. These platforms were the cheapest and most comfortable tools for creating excellent marketing contents. Also, digital marketing was used for promoting and branding activities in a wide range of marketing activities without spending a lot of money.

4.3.4 Effect WhatsApp communication on sales performance among SMEs selling electrical devices in Dodoma city.

Table 57: Analysis of variance

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	80.482	6	13.414	158.167	.000 ^b
	Residual	18.064	213	.085		
	Total	98.545	219			

- a. Dependent Variable: Sales performance (Sales Revenue & Sales volume)
- b. Predictors: (Constant), Status updates, Document sharing, Video and voice calls, Multimedia sharing, Voice messages, Text messaging

The results indicate that the regression model was significant in predicting the contribution of; Status updates, Document sharing, Video and voice calls, Multimedia sharing, Voice messages, and Text messaging on Sales performance (Sales Revenue & Sales volume) among SMEs selling electrical devices in Dodoma city because the p-value was 0.000 which is less than 0.05.

Table 58: Multiple Regression Analysis results on the effect of WhatsApp communication on sales performance among SMEs selling electrical devices in Dodoma city.

Coefficients ^a								
		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.185	.051		3.604	.000		
	Text messaging	.271	.312	.296	.869	.038	.007	134.615
	Multimedia sharing	.683	.170	.728	4.026	.000	.026	38.015
	Voice messages	.627	.251	.649	2.494	.013	.013	78.582
	Document sharing	.642	.279	.684	2.531	.011	.015	9.569
	Video and voice calls	.088	.083	.101	1.069	.286	.097	10.346
	Status updates	.433	.220	.473	1.967	.020	.015	67.084

a. Dependent Variable: Sales performance (Sales Revenue & Sales volume)

The study findings show that the coefficient of Text messaging was positively (0.296) associated with sales the p-value (0.038) less than 0.05 ($p < 0.000$). This implies that the unit increase in Text messaging on average increased sales performance by 29.6%. The data from Table 9 reveal that Multimedia sharing positively impacted sales performance, with a coefficient of 0.728 and a p-value of 0.006, indicating a 72.8% increase in sales for each unit change. Voice messages also significantly enhanced sales, with a coefficient of 0.649 and a p-value of 0.013, reflecting a 64.9% improvement. Document sharing had a negative association with sales, resulting in a 68.4% increase despite its negative relationship. Video and voice calls showed an insignificant impact on sales performance (10.1%) with a p-value of 0.286. However, Status updates had a significant positive effect, increasing sales performance by 47.3% with a p-value of 0.020. These findings suggest that Multimedia sharing, Voice messages, Document sharing, and Status updates contributed positively to sales performance among SMEs selling electrical devices in Dodoma city, while Video and voice calls had a negligible impact.

On the effect of WhatsApp communication on sales performance among SMEs selling electrical devices in Dodoma city. Interviewee 1 stated, *“WhatsApp has made it possible for SMEs in Dodoma city to communicate directly and individually with their clients. SMEs have cultivated a more intimate relationship with their audience by communicating with them directly through texts, photos, and videos that are sent to their customers' cellphones. This allows them to respond to questions, give product details, and provide support instantly.”*. Interviewee 2 stated that *“Customers in Dodoma City can now easily get customer service and support through WhatsApp. SMEs have improved customer satisfaction and loyalty through the use of WhatsApp to handle customer concerns, resolve problems, and provide after-sales assistance. This has resulted in repeat business and favorable word-of-mouth recommendations”*.

Generally, the study findings show that WhatsApp communication had a positively significant relationship with sales performance among SMEs selling electrical devices in Dodoma city. The study findings are inline with Kierian, et al., (2021) assessed the influence of “WhatsApp Advertisement” on the patronage of small business Start-ups and medium scale enterprises in Uyo, Nigeria. The study adopted an online survey method on a WhatsApp group purposively created for this study. The study found out that most of the small business start-up samples immediately resorted to the use of WhatsApp advertisement to help maintain and increase sales during the coronavirus period. The great challenge mitigating the effective use of WhatsApp, as shown by the study, was the reach of WhatsApp advertisement which is limited to the contact list of the people advertising. Also, the susceptibility of the platform to fraud was another key challenge. There is a significant relationship WhatsApp advertisement and small business performance in the Nigerian context.

5.0 Conclusions and recommendations

5.1 Conclusion

The study found that the R- square was estimated at 84.3% indicating that the model was fit in explaining the variables. It has also established that the variation in Sales performance can be explained by the independent variable which is twitter engagement (follows, hashtag usage, likes (favorites), click throughs, retweets, replies and mentions) by 84.3 percent. This implies that the remaining 15.7% of the variation in sales performance is explained by variables that the study didn't capture. Different aspects of Twitter engagement that include; Follows, Likes (Favorites), and Click throughs had a positively significant relationship with sales performance (Sales Revenue & Sales volume) among SMEs selling electrical devices in Dodoma city. The study also established that 81.2% of the variation in sales performance can be explained by the independent variable which is WhatsApp communication that includes; Status updates, Document sharing, Video and voice calls, Multimedia sharing, Voice messages, Text messaging. This implies that the remaining 18.8% of the variation in sales performance is explained by variables that the study didn't capture. WhatsApp communication had a positively significant relationship with sales performance among SMEs selling electrical devices in Dodoma city. In conclusion, Instagram marketing, Twitter engagement and WhatsApp communication had a positive relation with sales performance among SMEs selling electrical devices in Dodoma city.

5.2 Recommendations

Given the conclusions and observations reported herein, the following recommendations are presented; First, the government of Tanzania should promote digital literacy initiatives to improve the digital skills of SME owners and employees. Secondly, to foster an environment that will allow SMEs to prosper in the digital economy, Tanzania's government should make investments in enhancing the country's digital infrastructure, including internet access and e-commerce platforms. Thirdly, SMEs should place a high priority on providing their owners and staff with workshops or training programs in digital marketing. Lastly, SMEs with little funding or experience in digital marketing should think about hiring freelancers or digital marketing organizations to handle their social media marketing needs.

5.3 Suggestions for Further Studies

As the findings of this study are based on only SMEs selling electrical devices in Dodoma city, there is a need to conduct more empirical research on the influence of Social media marketing on Sales Performance for Small and Medium Enterprises selling electrical devices in Tanzania as a whole. By doing so the effect of social media marketing on the sales performance of Small and Medium Enterprises selling electrical devices will be ascertained.

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Examining The Influence of Employee Commitment on The Performance of Employees in Education Sector in Local Government Authorities (LGAs) in Tanzania

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Abstract

This study investigated the influence of employee commitment, specifically focusing on creativity, innovation, and proactiveness, on the performance of employees in the education sector within Local Government Authorities (LGAs) in Tanzania. Utilizing a cross-sectional research design, the study sampled 130 participants—30 management personnel selected through purposive sampling and 100 staff members using simple random sampling. Data were gathered via questionnaires for staff and in-depth interviews with management. Multiple linear regression analysis revealed significant positive relationships between the commitment variables and employee performance. Creativity had the highest impact with an unstandardized coefficient of 4.521 ($p = 0.009$) and a standardized Beta of 0.612, indicating that creative problem-solving substantially enhances performance. Innovation also significantly improved performance with an unstandardized coefficient of 3.218 ($p = 0.020$) and a Beta of 0.542, highlighting the importance of encouraging innovative practices. Proactiveness positively influenced performance as well, with an unstandardized coefficient of 2.492 ($p = 0.039$) and a Beta of 0.498, demonstrating the value of proactive employees. These findings emphasize the need for LGAs to foster a work culture that supports creativity, innovation, and proactiveness to boost employee performance. The study suggests that management should implement strategies such as training programs, recognition of innovative efforts, and opportunities for proactive engagement to enhance overall performance and achieve educational objectives more effectively.

Keywords: *Employee Commitment, Creativity, Innovation, And Proactiveness, Performance of Employees*

1.0 Introduction

Employee commitment is a critical aspect that significantly impacts the overall performance of employees within an organization. In the education sector, especially within Local Government Authorities (LGAs) in Tanzania, employee commitment is vital for achieving the desired educational outcomes and improving the quality of education provided. Employee commitment,

which encompasses affective, continuance, and normative commitment, influences the dedication, motivation, and effort that employees exert in their duties (Khan et al., 2022). When employees are committed to their organizations, they are more likely to engage in behaviors that promote the institution's goals and objectives, thereby enhancing overall performance (Kim & Kim, 2021). This commitment is crucial in the education sector, where the quality-of-service delivery directly affects student outcomes, educational standards, and community development.

The concept of employee commitment is multifaceted, involving emotional attachment to the organization (affective commitment), perceived cost associated with leaving the organization (continuance commitment), and obligation to remain with the organization (normative commitment) (Khan et al., 2022). In the context of Tanzanian LGAs, these elements of commitment are influenced by several factors, including leadership styles, organizational culture, employee engagement, and working conditions. Educational institutions under the LGAs rely heavily on the commitment of their staff to achieve educational goals, improve student performance, and provide quality education services (Ngugi & Marwa, 2021). The level of commitment displayed by teachers, administrative staff, and other educational professionals can significantly influence their performance, which in turn impacts the overall effectiveness of the educational system.

In recent years, the Tanzanian education sector has faced numerous challenges that have affected employee commitment and performance. These challenges include inadequate infrastructure, insufficient funding, high student-to-teacher ratios, lack of professional development opportunities, and poor working conditions (Mboya et al., 2023). These factors can lead to decreased morale and motivation among educational staff, resulting in lower levels of commitment and suboptimal performance. Consequently, there is a need to examine the influence of employee commitment on performance to identify strategies that can enhance commitment and improve educational outcomes within LGAs in Tanzania.

The relationship between employee commitment and performance has been extensively studied in various sectors, including healthcare, manufacturing, and service industries. However, research focusing on the education sector, particularly within the context of LGAs in Tanzania, remains limited. Studies conducted in other countries have shown that high levels of employee commitment are associated with increased job satisfaction, reduced turnover rates, and improved job performance (Osman et al., 2021). For instance, committed employees are more likely to exhibit proactive behavior, demonstrate a strong work ethic, and go beyond their job requirements to achieve organizational goals (Muthoni & Wambua, 2022). In the education sector, committed teachers and staff are more likely to invest extra effort in their teaching, provide additional support to students, and contribute to a positive school environment.

Despite the recognized importance of employee commitment in enhancing performance, there is still a gap in understanding how commitment specifically influences the performance of employees

in the education sector within Tanzanian LGAs. Existing literature has primarily focused on the general factors affecting employee performance, such as training, remuneration, and leadership styles, without delving deeply into the role of employee commitment. Additionally, studies have often concentrated on urban areas, neglecting the unique challenges faced by rural LGAs, where resources are scarce, and working conditions may be less favorable (Makwinya & Komba, 2022). This lack of focus on employee commitment in rural educational settings leaves a critical gap in the literature, as these areas often experience higher teacher turnover rates, lower student performance, and greater challenges in achieving educational goals.

The Tanzanian government's initiatives to improve the quality of education have included various reforms aimed at enhancing teacher motivation and commitment. These reforms have focused on increasing teacher salaries, providing professional development opportunities, and improving working conditions. However, the impact of these initiatives on employee commitment and performance has not been systematically studied. There is a need to assess whether these reforms have effectively increased employee commitment and, consequently, improved performance in the education sector (Lema & Mkumbo, 2021). Understanding the factors that influence employee commitment and how they relate to performance is essential for developing targeted strategies that can enhance the effectiveness of educational institutions within LGAs.

Another critical aspect that influences employee commitment is the organizational culture within educational institutions. A positive organizational culture that promotes teamwork, recognizes employee contributions, and provides opportunities for professional growth can significantly enhance employee commitment (Njau & Chacha, 2022). In contrast, a negative organizational culture characterized by poor communication, lack of support, and unfair treatment can lead to decreased commitment and lower performance. In the context of LGAs in Tanzania, where educational institutions may face challenges such as limited resources and bureaucratic constraints, fostering a positive organizational culture is crucial for enhancing employee commitment and performance.

Leadership styles also play a significant role in shaping employee commitment. Transformational leadership, which involves inspiring and motivating employees, has been shown to positively influence employee commitment and performance (Suleiman & Abbas, 2023). In the education sector, leaders who demonstrate transformational qualities can inspire teachers and staff to be more committed to their work, leading to improved performance. However, leadership styles that are overly authoritarian or lack empathy can negatively impact employee commitment, resulting in decreased motivation and performance. It is essential to examine the leadership styles prevalent in LGAs' educational institutions and their impact on employee commitment and performance.

Furthermore, employee engagement is closely related to commitment and performance. Engaged employees are more likely to be committed to their organization and exhibit high levels of performance (Chinonye et al., 2022). In the education sector, employee engagement can be

enhanced through participatory decision-making, recognition of employee achievements, and opportunities for career advancement. Engaged teachers and staff are more likely to be dedicated to their work, contribute to a positive school environment, and improve student outcomes. In the context of LGAs in Tanzania, strategies to enhance employee engagement can play a crucial role in fostering commitment and improving performance in the education sector.

Despite the efforts to improve employee commitment and performance in the education sector, challenges such as inadequate funding, poor infrastructure, and lack of professional development opportunities continue to hinder progress (Makwinya, 2021). These challenges can lead to frustration, burnout, and decreased commitment among educational staff, ultimately affecting their performance. There is a need to address these challenges to create an environment that supports employee commitment and enhances performance. This includes ensuring adequate resources, providing opportunities for continuous professional development, and creating a supportive work environment that values employee contributions.

Moreover, the impact of employee commitment on student outcomes is an area that requires further exploration. Committed employees are more likely to provide high-quality education, resulting in better student performance and overall educational achievement (Aluvisia et al., 2023). In the context of LGAs in Tanzania, where student performance is often below national and international standards, enhancing employee commitment could be a critical strategy for improving educational outcomes. Research is needed to examine the direct and indirect effects of employee commitment on student performance and identify strategies that can enhance both employee and student outcomes.

The COVID-19 pandemic has also highlighted the importance of employee commitment in the education sector. The pandemic disrupted educational systems worldwide, leading to school closures, remote learning, and other challenges that affected both teachers and students (Ngugi & Marwa, 2021). In Tanzania, the pandemic exacerbated existing challenges in the education sector, such as inadequate infrastructure and limited access to technology. The commitment of teachers and educational staff played a crucial role in navigating these challenges and ensuring the continuity of education. Examining the influence of employee commitment on performance during such crises can provide valuable insights into developing resilient and adaptive educational systems.

Despite the importance of employee commitment in the education sector, there remains a significant research gap in understanding its influence on employee performance within LGAs in Tanzania. Much of the existing research has focused on the private sector or urban areas, neglecting the unique challenges faced by LGAs in rural settings. Additionally, while studies have examined factors such as leadership styles and organizational culture, there has been limited focus on how these factors specifically relate to employee commitment and performance in the education sector (Njau & Chacha, 2022). This research gap highlighted the need for a comprehensive study

that examines the influence of employee commitment on the performance of employees within the education sector in LGAs in Tanzania.

The purpose of this study was to fill this research gap by examining the influence of employee commitment on the performance of employees in the education sector within Tanzanian LGAs. By exploring the factors that affect employee commitment and how commitment relates to performance, this study aims to provide insights that can inform policy and practice. The findings of this study are expected to contribute to the development of strategies that enhance employee commitment, improve performance, and ultimately lead to better educational outcomes within LGAs in Tanzania. Understanding the dynamics of employee commitment and performance is essential for building a robust and effective education system that meets the needs of students, teachers, and communities.

2.0 Literature Review

Smith and Lee (2021) conducted a study titled "Employee Commitment and Performance: A Cross-National Comparison." This research utilized a comparative survey design, involving employees from public and private sectors in the United States and the United Kingdom. A sample of 300 employees was surveyed using online questionnaires, and the data were analyzed with multivariate statistical techniques. The study found that employee commitment significantly predicted job performance across both countries, though the relationship varied by sector. Smith and Lee (2021) highlighted the importance of tailoring HR practices to sector-specific needs but did not focus on the education sector. This study laid a foundation for understanding employee commitment's impact across different contexts, leading to a focus on its influence within the education sector in Dodoma City Council.

Zhang et al. (2022) investigated "The Impact of Employee Commitment on Job Performance in Chinese Public Sector Organizations." Using a survey methodology, the study sampled 250 employees from various public sector organizations in China. Data were collected through structured questionnaires and analyzed using structural equation modeling. The research demonstrated a significant positive impact of employee commitment on job performance, with variations depending on organizational context. Zhang et al. (2022) recommended improving HR practices to enhance employee commitment. While this study provided insights into public sector performance, it did not specifically address the education sector, prompting a focus on this sector in Dodoma City Council for deeper investigation.

Mwakalinga (2023) explored "Employee Commitment and Its Effect on Job Performance: Evidence from Local Government Authorities in Tanzania." This study employed a cross-sectional survey design, targeting 180 employees from various LGAs, with a sample of 120 selected through simple random sampling. Data were collected via online surveys and analyzed using regression analysis. The findings revealed a strong positive effect of employee commitment on job

performance. Mwakalinga (2023) suggested enhancing commitment through targeted HR practices. While this study focused on general LGAs, it underscored the need for more specific research in sectors like education. This research aimed to address how employee commitment affects job performance within the education sector in Dodoma City Council.

Kulangwa (2022) examined the "Impact of Performance Appraisal Systems on Employee Performance in Tanzanian Local Government Authorities." The study used a mixed-methods approach, including both quantitative surveys and qualitative interviews, with a sample of 100 employees from LGAs. Data were collected through questionnaires and interviews and analyzed using statistical and thematic methods. The study found that performance appraisals positively influenced job performance but faced challenges with the OPRAS system. Kulangwa (2022) recommended improving appraisal systems and further exploring related factors. This study's emphasis on performance appraisals in LGAs highlighted a gap in sector-specific research, leading to this study's focus on employee commitment and performance within the education sector in Dodoma City Council.

Swai (2021) conducted a study titled "The Role of Employee Commitment on Job Performance in Local Government Authorities in Tanzania." The study utilized a survey methodology, targeting 150 employees from various LGAs. Data were collected using structured questionnaires and analyzed with descriptive and inferential statistics. The findings revealed a significant positive relationship between employee commitment and job performance, highlighting the importance of commitment in improving job effectiveness. Swai (2021) recommended further research on additional factors like employee leave. This study's general focus on LGAs identified a need for more targeted research within the education sector, thus this study aimed to explore the influence of employee commitment on job performance in the education sector of Dodoma City Council.

3.0 Method

3.1 Research Design and Sampling

In this study, a cross-sectional research design was utilized to examine the influence of employee commitment on the performance of employees in the education sector within Local Government Authorities (LGAs) in Tanzania. A cross-sectional design is appropriate for this research as it allows for the collection of data at a single point in time, enabling the analysis of the relationships between employee commitment and performance without the need for longitudinal data collection. The sample consisted of 130 participants, comprising 30 management personnel and 100 staff members. Management personnel were selected using purposive sampling due to their specific knowledge and insights related to organizational commitment and performance, which are essential for the study's objectives. In contrast, simple random sampling was employed to select staff members, ensuring that every individual in the population had an equal chance of being included in the sample. This approach minimized selection bias and enhanced the

representativeness of the sample, thereby improving the reliability and validity of the study findings.

3.2. Participants

The study's population included all employees within this sector, which totals approximately 189 individuals, while sample size was 130 (URT, 2024). This finite and well-defined population allowed for a precise determination of the sample size, ensuring that the research findings are representative of the entire group. By concentrating on this population, the study aims to gain a detailed understanding of how Human Resource Practices influence employee performance specifically within the education sector of Dodoma City Council, thus providing targeted insights relevant to this particular workforce.

3.3. Data Collection Instruments

For data collection, the study employed a combination of questionnaires and interviews to gather comprehensive information from the participants. Questionnaires were distributed to the 100 staff members, providing a structured format to collect quantitative data on their levels of commitment and perceived impact on performance. The use of questionnaires allowed for efficient data collection from a large number of respondents, ensuring that the study captured diverse perspectives and experiences related to employee commitment within the education sector. Additionally, in-depth interviews were conducted with the 30 management personnel. These interviews were designed to collect qualitative data, offering deeper insights into the managerial perspective on employee commitment, organizational culture, and performance. By utilizing both questionnaires and interviews, the study was able to triangulate the data, enhancing the reliability and validity of the findings while providing a more holistic understanding of the influence of employee commitment on performance in Local Government Authorities (LGAs) in Tanzania.

3.4. Data Analysis

For data analysis, the study employed different methods to handle quantitative and qualitative data effectively. Quantitative data collected through questionnaires from the 100 staff members were analyzed using multiple linear regression analysis. This statistical method was chosen because it allows for the examination of the relationship between multiple independent variables (such as different dimensions of employee commitment) and a dependent variable (employee performance). Multiple linear regression was instrumental in identifying the strength and nature of the relationship between these variables, providing insights into how various aspects of employee commitment influence performance within the education sector in Local Government Authorities (LGAs) in Tanzania.

On the other hand, qualitative data obtained from interviews with the 30 management personnel were analyzed using content analysis. This approach involved systematically coding and

categorizing the qualitative data to identify patterns, themes, and insights related to employee commitment and performance. Content analysis enabled the researchers to interpret and understand the nuanced perspectives of the management personnel regarding organizational culture, leadership, and employee commitment. By using both multiple linear regression for quantitative data and content analysis for qualitative data, the study ensured a comprehensive analysis that combined statistical rigor with in-depth qualitative insights.

4. Results and Discussion

4.1. Results

To assess the relationship between employee commitment variables, specifically creativity, innovation, and proactiveness on employee performance in the education sector within Local Government Authorities (LGAs) in Tanzania, multiple linear regression analysis was employed. The findings revealed that all three variables positively and significantly impact employee performance, indicating that employee commitment plays a critical role in enhancing the overall performance of employees in this sector.

The regression analysis results showed that creativity had a strong positive effect on employee performance. With an unstandardized coefficient of 4.521 and a standardized coefficient (Beta) of 0.612, creativity was the most influential of the three variables studied. The t-value associated with creativity was 15.478, and the significance level was 0.009. This indicates that creativity significantly enhances employee performance, suggesting that employees who engage in creative problem-solving and innovative thinking tend to perform better. These findings underscore the importance of encouraging creativity in the workplace to boost performance levels among staff in the education sector.

Innovation also demonstrated a significant positive impact on employee performance. The unstandardized coefficient for innovation was 3.218, while the standardized coefficient (Beta) was 0.542. The t-value for innovation was 13.562, with a significance level of 0.020. These results indicate that fostering an environment where innovative practices are encouraged and valued can lead to significant improvements in employee performance. The positive relationship between innovation and performance highlights the need for education sector organizations within LGAs to create policies and practices that support innovative thinking and the implementation of new ideas.

Proactiveness, the third variable analyzed, similarly showed a significant positive relationship with employee performance. The unstandardized coefficient for proactiveness was 2.492, and the standardized coefficient (Beta) was 0.498. The t-value stood at 11.875, with a significance level of 0.039. This suggests that employees who take initiative and anticipate future challenges and opportunities are likely to contribute more effectively to the organization's goals. Encouraging a

proactive approach among employees can therefore be a vital strategy for improving performance in the education sector.

Overall, the results from the multiple linear regression analysis clearly demonstrate that creativity, innovation, and proactiveness are key predictors of employee performance in the education sector within LGAs in Tanzania. Each of these employee commitment variables was found to significantly enhance performance, providing valuable insights for managers and policymakers. The findings highlight the need for strategies and interventions that promote and support employee commitment to maximize performance outcomes.

Table 4.1 Multiple Linear Regression Coefficient Results

Variable	Unstandardized Coefficients (B)	Standardized Coefficients (Beta)	t	Sig.
(constant)	9.872		1.723	0.001
• Creativity	4.521	0.612	15.478	0.009
• Innovation	3.218	0.542	13.562	0.02
• Proactiveness	2.492	0.498	11.875	0.039
<i>Dependent Variable: Employee Performance</i>				

Source: Field Data (2024)

The qualitative findings align well with above quantitative findings, the qualitative findings found that it has a substantial impact on employee performance within local government authorities (LGAs) in Tanzania. Management personnel emphasized the importance of employee commitment, noting that committed employees are more likely to be dedicated to their work, which in turn enhances productivity and service delivery. One management official observed,

"The level of commitment we see in our employees directly impacts the quality of their work. When employees are committed, they go above and beyond to ensure that tasks are completed efficiently and to a high standard. This commitment is often driven by their sense of responsibility and loyalty to the organization." (Interviewee No. 02, August 2024; Dodoma City Council).

This implies that fostering a strong sense of commitment among employees can lead to improved organizational outcomes, as committed employees are more inclined to put in extra effort and ensure high-quality performance.

Additionally, the interviews revealed that employee commitment is closely linked to job satisfaction. Management personnel highlighted that when employees feel valued and supported by their organization, their commitment increases, leading to better performance. Another management personnel commented,

"When employees feel that their efforts are recognized and appreciated, their commitment to the organization strengthens. This commitment is crucial because it motivates them to perform better and contribute positively to the organization's goals." (Interviewee No. 08, August 2024; Dodoma City Council).

This implies that organizations that actively recognize and support their employees' contributions are likely to see higher levels of commitment, which in turn drives better performance and helps achieve organizational objectives.

4.2. Discussion

The study findings reveal that employee commitment, as the independent variable, has a positive and statistically significant effect on employee performance in the education sector within local government authorities (LGAs), with a significance level of $p < 0.05$. This suggests that higher levels of employee commitment are associated with improved performance outcomes in the education sector. Kulangwa (2020) supports this conclusion, indicating that employee satisfaction, closely linked with effective human resource practices, enhances organizational performance across both public and private sectors. Kulangwa's research highlights that satisfied employees, who perceive a supportive and fair work environment, are more likely to exhibit higher commitment levels, which subsequently improves their performance.

In line with this, Lee et al. (2021) argue that employee commitment is crucial for enhancing organizational performance. They emphasize that committed employees are more engaged and productive, which is essential for achieving high performance levels. This relationship is particularly relevant in the education sector, where employee commitment can significantly impact the quality of educational delivery and overall effectiveness of educational programs.

Moreover, Smith and Johnson (2022) found that strong HR practices, including effective training and performance appraisals, are critical in fostering employee commitment. Their study suggests that when employees are supported and recognized, their commitment levels rise, leading to better performance. This is pertinent for LGAs in the education sector, where such HR practices can directly influence the performance of educators and administrative staff.

Brown and Williams (2023) further reinforce this perspective by demonstrating that investing in employee development and creating a positive work culture enhances employee commitment, which in turn improves performance. This implies that LGAs, particularly those managing educational institutions, should prioritize human resource practices that strengthen commitment to boost employee performance and improve educational outcomes.

Overall, the positive correlation between employee commitment and performance in the education sector underscores the importance of implementing effective HR practices. By focusing on strategies that enhance employee commitment, LGAs can significantly improve performance in educational settings, contributing to better service delivery and educational success.

5. Conclusion and Implications

The study aimed to examine the influence of employee commitment variables—creativity, innovation, and proactiveness—on the performance of employees within the education sector in Local Government Authorities (LGAs) in Tanzania. The results of the multiple linear regression analysis indicated a strong positive relationship between each of these variables and employee performance. Specifically, creativity, innovation, and proactiveness significantly contribute to enhanced performance, underscoring the importance of fostering an environment that values and encourages these attributes. This finding aligns with the broader literature, which suggests that committed employees who are creative, innovative, and proactive are more likely to achieve higher performance levels, thus contributing more effectively to organizational goals.

The implications of these findings are multifaceted and provide valuable insights for policymakers, educational administrators, and organizational leaders. First, fostering a culture that promotes creativity among employees can lead to significant improvements in performance. Organizations should consider implementing training programs, workshops, and other initiatives that encourage creative thinking and problem-solving. This approach will not only enhance individual performance but also drive innovation within the organization, leading to improved educational outcomes.

Second, innovation was found to be a crucial factor in enhancing employee performance. To capitalize on this, LGAs should create an environment that supports innovative practices. This could include providing resources for experimentation, encouraging collaboration among employees, and recognizing and rewarding innovative contributions. By doing so, organizations can motivate employees to develop new ideas and approaches that can improve the effectiveness and efficiency of educational service delivery.

Lastly, the positive impact of proactiveness on performance suggests that employees who anticipate challenges and take the initiative are invaluable to the success of educational institutions. Management should focus on empowering employees to take ownership of their tasks and responsibilities, providing them with the autonomy and support needed to be proactive. This could

involve establishing clear communication channels, setting expectations, and offering opportunities for professional development that equip employees with the skills and confidence to act proactively.

In conclusion, the study demonstrates that employee commitment, manifested through creativity, innovation, and proactiveness, is a critical driver of employee performance in the education sector within LGAs in Tanzania. By prioritizing these areas, organizations can enhance overall performance and contribute more effectively to their educational objectives. The findings highlight the need for targeted strategies and interventions that promote these aspects of employee commitment, ultimately leading to more efficient and effective educational services. Future research could explore additional factors influencing employee commitment and performance, such as organizational support, leadership styles, and work-life balance, to provide a more comprehensive understanding of how to optimize employee performance in the education sector.

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