

The Contribution of Information Communications Technology on Improved Human Resources Performance in Kinondoni Municipality, Tanzania

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ABSTRACT

The study addressed the challenge of improving human resource performance within Local Government Authorities (LGAs), particularly in Kinondoni Municipality, where inefficiencies and limited technological integration have hindered effective governance and service delivery. Recognizing the potential of Information and Communication Technology (ICT) to transform organizational processes, the study explored its contributions to human resource performance, focusing on the policy and legal framework governing ICT use, its influence on efficiency and effectiveness, and the challenges of adoption. Guided by the Technology Acceptance Model (TAM), which emphasizes the role of perceived ease of use and usefulness in technology adoption, the study targeted employees and stakeholders, including human resource officers, IT personnel, administrative staff, and community leaders. Using a sample of 100 respondents selected through purposive and stratified random sampling, data were collected through interviews and questionnaires and analyzed using SPSS for descriptive statistics and thematic analysis for qualitative insights. Findings showed that ICT policies are well-established (mean = 4.2, SD = 0.75) and that ICT improves efficiency, accessibility, and data integrity, with record-keeping identified as a significant benefit (40%). Offices were well-equipped with internet-connected computers (mean = 4.3, SD = 0.75), though Human Resource Information Systems (HRIS) adoption was moderate (mean = 3.9, SD = 0.85), reflecting limited utilization. Key challenges included inadequate training and insufficient integration of ICT into human resource practices. Despite these obstacles, ICT was found to significantly enhance human resource performance, supporting governance and service delivery. The study recommended increased investments in infrastructure, continuous training, implementation of e-governance initiatives, and the establishment of impact evaluation frameworks to maximize ICT's potential.

Keywords: Human Resources Performance, Information Communications Technology, Local Government Authorities, Policy Environment, Regulatory Framework, Tanzania

I. INTRODUCTION

Recently, the integration of information and communication technology (ICT) in government offices is reported to significantly improve service delivery in many countries. ICT streamlines various government services and enhances the effectiveness of the managerial activities of many governments in developed and developing countries (Napitupulu *et al.*, 2018). Using ICT is paramount for effective delivery of services to citizens (Alhassan *et al.*, 2021; Asare *et al.*, 2023). In the context of local government authorities (LGAs), the integration of ICT refers to the use of digital tools and systems to support the delivery of public services and the management of information resources. The aim is to increase efficiency and give people access to improved services. This significantly increases government accountability to its people (Poncian, 2020; Matimbwa *et al.*, 2021). The rise in ICT use is an opportunity to foster the civic and political engagement of the general public at the global level (Lubua, 2017; Appati, 2021).

In Tanzania, the use of ICT by local government authorities (LGAs), particularly in human resources departments (HRDs), is a recent practice (United Republic of Tanzania [URT], 2025). The LGAs, according to Article 145 of the Constitution of the United Republic of Tanzania of 1977, are tasked to keep and update personnel records, including records about recruitment and selection, employee reports, deductions, career planning, training, and development (Njau, 2018). Earlier, the LGAs were manually processing information regarding their services and records (Ishijima *et al.*, 2015).

The origins of LGAs are traced back to the mid-1920s, when they emerged as "native authorities" and then they were inherited after independence before their reorganisation as the Regional Decentralisation in 1972. In 1982, the LGAs were reinstated through Act No. 7-10 but continued to use manual and old-style ways of recording government data (Lameck, 2015). In Tanzania and other developing countries, there was slow adoption of information technology in the government services due to several factors, including a lack of funds and inadequate skilled personnel in government departments. From the 1990s and early 2000s, using ICT became common in many developed countries. In Indonesia, America, and the United Kingdom, for example, ICT is regarded as a critical driver

of economic growth, innovation, and productivity in the human resources (HR) departments in these countries (Napitupulu *et al.*, 2018; Appati, 2021) have successfully managed to enhance the effectiveness, efficiency, transparency, and accountability in public service delivery by using ICT. ICT is known for its potential to smoothen knowledge acquisition and learning among public sector employees, which improves their skills, competencies, and performance (Asare *et al.*, 2020).

The invention of ICT in the world has attributed to a shift from the practice of performing administrative activities manually to a practice of performing them electronically in Tanzania and elsewhere. The challenges of incomplete, inaccurate, and outdated employee information in various government departments also forced Tanzania to adopt the computerised application software, the Human Resource Information System (Njau, 2018; Matimbwa *et al.*, 2019). The adoption of ICT went hand in hand with installation of up-to-date equipment and offering of training to the Human Resource Officers to improve their performance in all the LGAs (Matimbwa *et al.*, 2021).

Tanzania is connected to the undersea fibre optic cables for internet connectivity to meet its current internet needs. Every LGA is connected to this network through the National ICT Backbone (Ishijima *et al.*, 2015; Njau, 2018). Consequently, over a decade now, a significant increase in the use of innovative systems to improve service delivery has revolutionised human resource services in the LGAs by increasing the pace of services, including, for example, speeding up the processing of employee data, improving intra- and inter-departmental coordination and data sharing, smoothing access to data, and reducing operational expenses (URT, 2016; Lubua, 2017; & Njau, 2018).

1.1 Statement of the Problem

The adoption of ICT promotes efficiency and policy effectiveness because people are served without having to travel far away to follow e-governance services (Lubua, 2017). ICT plays a crucial role in many aspects of service delivery. It is thus necessary to investigate its contribution to improved human resource performance in developing countries like Tanzania by paying attention to its influence on the performance of the local government authorities. The use of ICT in LGAs to facilitate service delivery and promote the human resources information system has attracted the attention of many researchers in and outside Tanzania. For example, researchers such as Kassam & Hogenbirk (2013), Ishijima *et al.* (2015), Lubua (2017), Njau (2018), Chinyuka (2018), Matimbwa & Masue (2019), Matimbwa *et al.* (2020 & 2021), and Poncian (2020), to name a few, have studied the adoption and use of ICT in Tanzania. Their findings indicate a consensus that ICT is a very effective tool for transforming the performance of local government authorities, and thus, the country had no option other than to adopt ICT to improve accountability. However, these studies mainly focused on the government efforts to adopt and implement ICT in Tanzania. Little has been done to examine the contribution of ICT to improve human resource performance in the local government authorities of Tanzania. However, these studies provide a general picture of ICT use in Tanzania.

Therefore, this study sought to fill this void by comprehensively assessing the contributions of ICT in improving human resource performance in LGAs in Tanzania. Specifically, the study reviewed the policy and legal framework governing the use of ICT, assessed the contribution of ICT in improving human resources performance in LGAs and explored the perceived challenges of ICT use towards improved human resources performance in LGAs in the Kinondoni Municipality. The study contributes to a better understanding of the contribution of ICT in improving the performance of human resources performance in the LGAs in Kinondoni municipality and Tanzania at large.

1.2 Research Objectives

- i. To analyze the policy and legal framework governing the use of ICT for improved human resources performance at Kinondoni Municipality.
- ii. To determine the contribution of ICT on improved human resources performance at Kinondoni Municipality.
- iii. To explore the perceived challenges of ICT use towards improved human resources performance at Kinondoni Municipality.

II. LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Goal-Setting Theory

The study was underpinned by the Goal-Setting Theory put forth by Edwin A. Locke in the 1960s and later on advanced in the 1990s (Locke & Bryan, 1969) to be used in goal-setting studies. Until now, this theory has remained relevant to the studies on any aspect of societal goals. This is because human action is characteristically goal-directed, which means there is no specific limit to the types of actions goal-setting can regulate so long as the individual or team has some control over the outcome.

According to Locke & Latham (2015), the Goal-Setting Theory is a performance management theory that requires employees to identify specific goals and objectives before setting up a system that tracks the progress towards

achieving those goals. Such goals are usually quantitative, so the employee can understand precisely how they have progressed towards achieving them so far. As an effective strategy for keeping employees engaged and boosting their performance, the theory can be applied across all fields and industries to help managers create better work environments and foster more successful businesses (Locke & Bryan, 1969; Locke & Latham, 2015).

Therefore, in assessing the contribution of ICT use in improving human resource performance in the LGAs in Tanzania, this theory was deemed relevant since it often applies to organisations that want to improve their employee's productivity levels. In this context, the organisation typically works because it gives workers a clear picture of what their manager requires of them and how he/she expects them to complete tasks, which can motivate them to work harder and smarter (Locke & Latham, 2015). In the said contexts, the human resource departments in the LGAs are typically public entities that work to achieve the pre-stated goals. As for ICTs, these LGAs were assessed to uncover how they have implemented various policies and laws to improve the performance to the human resources departments in Kinondoni Municipality.

2.2 Empirical Review

The study by Mbilinyi and Muhoja (2021) focused on identifying the fragmented nature of ICT policies as a significant barrier to effective ICT adoption within HR departments in Tanzanian municipalities. The researchers aimed to understand how policy inconsistencies affected the implementation of digital tools in HR functions. To achieve this, the study conducted a detailed policy document analysis, examining various ICT regulations and their impact on HR processes. Their findings revealed that the inconsistencies between different ICT policies created confusion and challenges for HR departments attempting to implement cohesive digital systems. The study recommended the harmonization of ICT policies to establish a unified legal framework that would support the digital transformation of HR operations. These findings align with a similar study from Brazil by Silva *et al.* (2022), which also reported that fragmented ICT policies hindered the improvement of HR performance in municipal governments.

The study by Simba and Msangi (2021) aimed to investigate how Tanzanian ICT policies influenced HR performance in local government authorities, focusing on the alignment between policy formulation and HR department needs. The researchers employed a quantitative survey methodology, collecting data from HR personnel within various local governments to assess the effectiveness of existing ICT policies. The results indicated a significant disconnects between the ICT policies and the specific needs of HR departments, which led to inefficient implementation and underperformance in HR processes. Simba and Msangi (2021) recommended more inclusive policy formulation processes that involve HR stakeholders to ensure ICT policies are aligned with the realities and needs of HR departments. These findings resonate with similar issues observed in South Africa, as reported by Van der Walddt (2019), who also found that ICT policies often lacked sufficient input from HR departments, leading to inefficiencies.

Juma (2020) conducted an analysis of the ICT legal framework in public services across Sub-Saharan Africa, with a specific focus on Tanzania. The study aimed to explore how outdated ICT policies hindered effective HR operations, especially in terms of adopting modern digital tools. Using a qualitative research approach, Juma collected data from public HR officials and policy documents to assess the impact of ICT laws on HR performance. The findings indicated that outdated policies posed a significant obstacle to fully exploiting ICT's potential in HR departments, limiting their operational efficiency. Juma emphasized the need for urgent policy updates that reflect current technological advancements, recommending that governments revise their legal frameworks to better support the digitalization of HR functions. Similar concerns were raised in Rwanda by Macharia (2019), who also highlighted the importance of modernizing ICT policies to enhance HR performance.

In the study by Benard & Dulle (2017), the *application of ICT tools in communicating information and knowledge to artisanal fishermen communities in Zanzibar*. These scholars identify that the use of ICTs in modern society drives innovation and enhances productivity. Alhassan (2021) joins them by postulating that in countries like Ghana in Africa, the effects of ICT implementation on public sector performance positively foster global connectivity. He identifies that new ICTs, such as intranets and teamwork technologies, are changing government institutions by enabling a move from a unidirectional top-down and close working environment to a more social, creative, and open one. In this regard, it is clear that ICTs are increasingly becoming tools for increasing international collaboration. It is clear for this study to take the same direction of assessing how the ICTs in the LGAs have contributed to strengthening international and national connectivity as far as delivering services is concerned.

The study by Kinyua (2020) examined the impact of ICTs on recruitment processes within LGAs in Kenya. The researchers conducted a survey of HR managers in various local authorities, utilizing a structured questionnaire to gather quantitative data on the effectiveness of ICT tools in recruitment. They analyzed the data using statistical methods to assess the impact of online platforms for job advertising and applicant tracking. The findings revealed that the use of these tools significantly reduced recruitment time and costs, enabling a more inclusive recruitment process

that reached a broader pool of candidates. The study concluded that the adoption of ICT in recruitment practices improved the efficiency and transparency of hiring processes in LGAs, contributing to higher-quality staffing.

Ngugi *et al.* (2019) focused on the role of ICT in enhancing employee performance management within LGAs in Uganda. The researchers employed a case study approach, collecting qualitative data from HR departments in several local governments through in-depth interviews and document analysis. The findings indicated that the introduction of performance management systems, such as electronic appraisal tools, improved the accuracy and timeliness of performance evaluations. These systems allowed for real-time tracking of employee performance and facilitated data-driven decision-making, resulting in more effective management of human resources. The study highlighted the potential of ICT to improve performance monitoring, leading to better outcomes in employee management.

Skoulidakis *et al.* (2018) explored the impact of ICT on training and development in LGAs. They utilized both quantitative and qualitative methods, administering surveys to HR officials and employees to gather data on training practices, while also conducting focus group discussions to gather deeper insights. Their findings revealed that the use of e-learning platforms and online training tools enhanced access to professional development opportunities for employees. This not only improved employee skills and competencies but also reduced the costs associated with traditional, in-person training programs. The study concluded that ICT-based training initiatives play a crucial role in building the capacity of HR departments and improving overall performance in LGAs.

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2.2.1 Research Knowledge Gap

Generally, the revised literature exemplifies that effective use and implementation of policies and legal frameworks are what can make the use of ICTs more relevant in delivering services to the people in Tanzania. However, the literature reviewed lacks a sound discussion on the contributions of ICTs to improved HR performance in the LGAs, particularly in Tanzania. Moreover, the literature reviewed shows the knowledge gap that needs to be filled. For example, studies reviewed reveal little about the Kinondoni Municipality as far as the use of ICTs is concerned. They also show little on how the HR departments in the LGAs in this municipality have been improving their performance after the integration of the ICTs. This study therefore sought to bridge the research gap by conducting a desktop review on challenges influencing the integration and use of information and communication technology in county governments under local government authority.

2.3 Conceptual Framework

Since the objective of this study was to assess the contribution of ICTs to improved HR performance in LGAs in Tanzania, the environment in which the ICT system is being used and the LGAs' capacity to react to external demands are key factors in determining the system's final success. The relationship between independent variables (technology environment, managerial support, and regulatory framework) and dependent variables (HRM system development) is explained by the conceptual framework below. Independent factors are interacting in groups, and when they are combined, they have a significant impact on how the use of ICTs grows within HR departments in the LGAs. Therefore, factors for the growth of ICT use in the LGAs and the technological environment include management support and regulations (Figure 1).

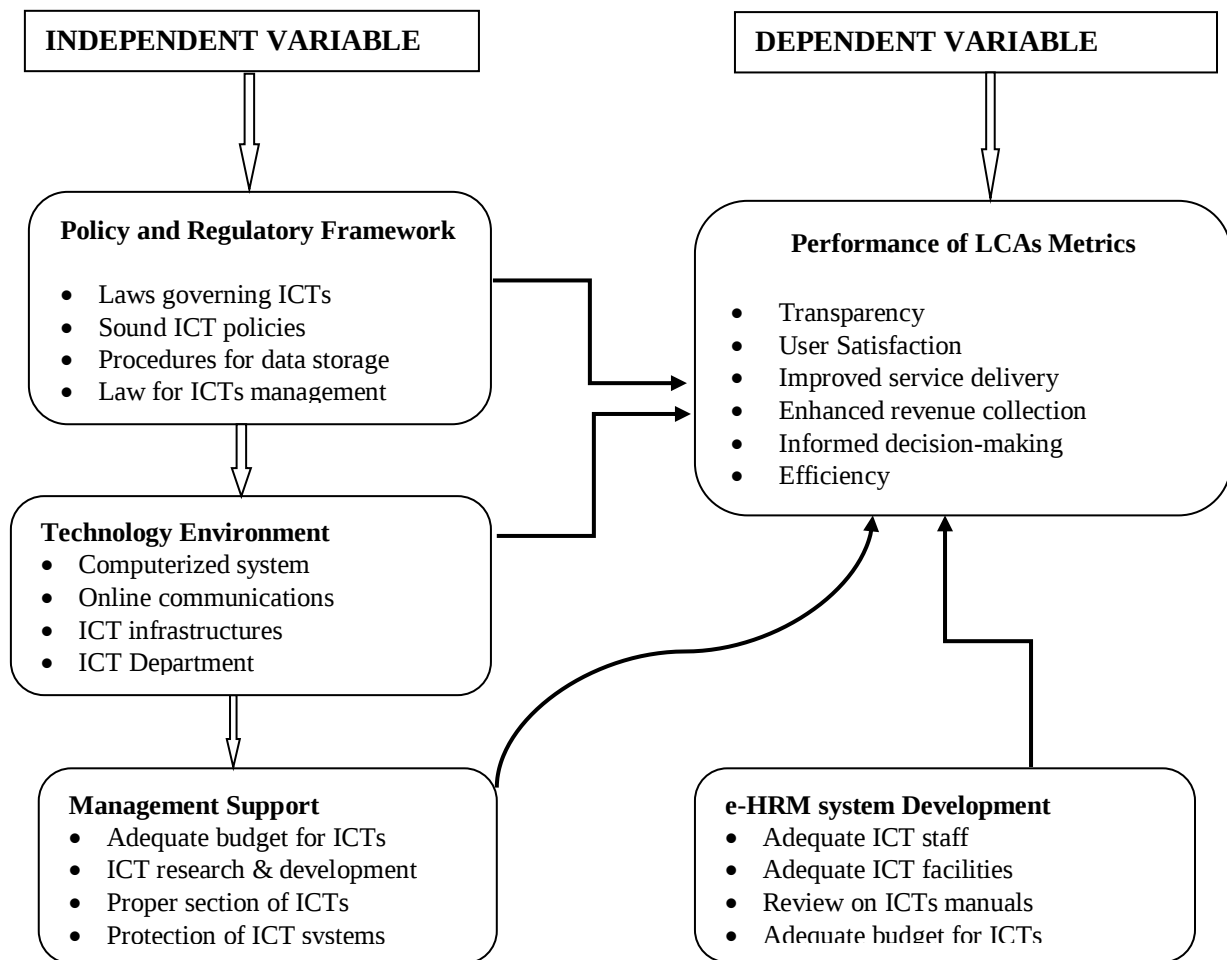


Figure 1
Conceptual Framework

III. METHODOLOGY

3.1 Research Design

The study adopted a descriptive research design, suitable for identifying and analyzing the contribution of ICT to human resource performance in LGAs. A mixed-methods approach was employed, integrating both qualitative and quantitative research methods. The qualitative component focused on exploring policies, legal frameworks, and challenges related to ICT adoption, while the quantitative component assessed ICT's impact on human resource performance. This approach facilitated data triangulation, enhancing the reliability and depth of findings.

3.2 Target Population and Sampling

The target population consisted of employees and stakeholders involved in human resources management in Kinondoni Municipality. The total population was 4,161 employees, among which 140 employees were directly linked to ICT use in human resource management.

3.2.1 Sample Size

The sample size was determined using the Krejcie and Morgan table, which indicated that a population of 140 required a sample size of 100 respondents.

3.2.2 Sampling Technique

A stratified random sampling technique was employed to ensure representation across different categories of the target population. This method allowed the purposeful selection of respondents directly associated with ICT use and human resource performance.



3.3 Data Collection Methods

3.3.1 Primary Data Collection

Primary data was collected through structured questionnaires, which gathered quantitative data on the extent of ICT use and its impact on human resource performance, and semi-structured interviews, which provided qualitative insights into policies, challenges, and frameworks related to ICT adoption in LGAs.

3.3.2 Secondary Data Collection

Secondary data was gathered through a review of official government reports, policies, and previous studies on ICT use in local government settings.

3.4 Data Analysis

3.4.1 Quantitative Data Analysis

Data collected through questionnaires was analyzed using descriptive statistics with SPSS (Statistical Package for Social Sciences). The analysis focused on identifying trends and patterns in ICT adoption and its contribution to human resource performance.

3.4.2 Qualitative Data Analysis

Data from interviews was analyzed using thematic analysis. Themes and patterns related to policy frameworks, ICT challenges, and contributions were identified, categorized, and interpreted.

3.5 Reliability and Validity of Research Instruments

3.5.1 Reliability

To ensure reliability, a pilot test was conducted with a small sample before the full data collection. The reliability of the quantitative instruments was confirmed by calculating Cronbach's Alpha, with a value above 0.7 indicating acceptable internal consistency.

3.5.2 Validity

The validity of the instruments was ensured through:

Expert Review: Academic and professional peers evaluated the instruments for relevance and alignment with study objectives. Triangulation: Multiple data sources and methods were used to enhance validity.

3.6 Ethical Considerations

3.6.1 Informed Consent

Participants were briefed on the study's purpose, procedures, and their right to withdraw at any time. Written consent was obtained before participation.

3.6.2 Confidentiality and Anonymity

All data was treated as confidential, with personal identifiers excluded from the analysis. Anonymity was maintained to protect participants' identities.

3.6.3 Voluntary Participation

Participation was entirely voluntary, with no coercion or undue incentives provided.

IV. FINDINGS & DISCUSSION

This section presents findings on the contribution of Information and Communications Technology (ICT) in improving human resource performance in local government authorities (LGAs) in Tanzania, focusing on Kinondoni Municipality. The section provides an overview of the respondents' profiles, followed by detailed analysis and presentation of data in respect to the study's specific objectives. The results provide comprehensive insights into the role of ICT in enhancing human resource performance, the existing legal and policy frameworks, and the challenges faced in ICT adoption.

4.1 General Characteristics of Respondents

The respondents of this study were selected from various departments in Kinondoni Municipality, including human resources (HR), ICT, administration, and other critical units involved in decision-making and operations. This section analyses their demographic characteristics, including gender, age, educational level, and work experience.

Understanding these demographics helps to contextualize the findings and provides a foundation for interpreting how different categories of staff perceive the role of ICT in enhancing human resource performance in LGAs.

4.1.1 Gender of Respondents

Regarding this aspect, the gender distribution of respondents was assessed to ensure a balanced representation of both males and females in giving views on the role of ICT in improving human resource performance. Out of the 100 respondents, 58% were male and 42% were female. This distribution indicates a slightly higher participation of males in human resource and ICT-related roles within the Kinondoni Municipality. The findings suggest that gender diversity within these departments is moderate; though further improvements in female representation may be necessary in order have a more balanced workforce.

4.1.2 Age of Respondents

The age range of respondents varied significantly, reflecting a mix of youthful and experienced employees in the municipality. Most of the respondents (45%) were aged 31-40 years, 30% were aged 21-30 years, 15% were aged 41-50 years, and 10% were aged over 50 years. This distribution indicates a predominantly young and middle-aged workforce, with a significant portion in their most productive years. Age diversity may influence how employees adapt to new technologies, with younger employees generally being more comfortable with ICT tools than the older staff.

4.1.3 Educational Level of Respondents

The educational background of respondents is a crucial factor in understanding their capacity to utilise ICT to improve human resource performance. The study revealed that 65% of the respondents held bachelor degree, 20% had postgraduate qualifications, and 15% had a diploma or certificate. This educational attainment indicates that most respondents are well-equipped to engage with ICT systems and technologies used in human resource processes. However, the findings also suggest a need for continuous training, especially for those with lower academic qualifications, to ensure they can effectively leverage ICT tools.

4.1.4 Work Experience of Respondents

Work experience is another crucial variable in determining how well respondents understand and use ICT. The findings show that 40% of the respondents had 5-10 years of work experience, 30% had less than 5 years, 20% had 11-15 years, and 10% had over 15 years of work experience. This means that many respondents had considerable field experience, which may influence their ability to adapt to ICT-driven changes in human resource processes. Employees with extended work experience may also have more profound insights into the evolution of ICT use in the municipality.

Table 1

Respondents' Characteristics and Departmental Distribution

Category	Subcategory	Number of	Percentage (%)
Gender	Male	58	58
	Female	42	42
Age	21-30 years	30	30
	31-40 years	45	45
	41-50 years	15	15
	Above 50 years	10	10
Educational Level	Diploma/Certificate	15	15
	Bachelor's Degree	65	65
	Postgraduate Degree	20	20
Work Experience	Less than 5 years	30	30
	5-10 years	40	40
	11-15 years	20	20
	Above 15 years	10	10
Departmental Distribution	Teachers (Primary & Secondary)	30	30
	Social Welfare Officers	10	10
	Community Development Officers	8	8
	Health Facilities Employees	15	15
	Drivers	5	5
	Accountants	10	10
	Secretaries	7	7
	Officers in Procurement	15	15
Total		100	100

4.1.5 Departmental Distribution of Respondents

The respondents of the study were selected from the key departments within Kinondoni Municipality. The distribution included 30% from the education sector, encompassing primary and secondary school teachers, who are pivotal in educational administration and staff management. Employees of health facilities accounted for 15%, and the procurement officers accounted for 15% of the sample. Other participants included social welfare officers (10%), community development officers (8%), accountants (10%), secretaries (7%), and drivers (5%). The inclusion of human resources officers from different departments was done to ensure that data has comprehensive coverage of different roles and their interaction with ICT tools.

This distribution of respondents offers a holistic view of the impact of ICT on different municipal functions, from the education and health to administration and logistics departments. The study captures the challenges and benefits of ICT experienced across these sectors by including participants from both administrative and service-oriented departments. This approach enabled the researcher to do an in-depth analysis of how ICT influences performance of the human resources employees in diverse roles. It enabled the researcher to have a better understanding of the overall contribution of ICT to local government operations.

4.2 The Policy Frameworks governing the use of ICT in LGAs in Tanzania

In recent years, Information and Communication Technology has become a strong force in global social, economic and political life (Hudson, 2024). It now plays a crucial role in facilitating the execution of the tasks of the human resource employees in local government authorities, hence helping to improve service delivery. However, it remains unclear how ICT has significantly contributed to the improvement of service delivery in the LGAs. This, in a way, has raised much concern and debate. In Tanzania, various national policies and regulations support using ICT tools in government activities. These include the national ICT policies of 2003, 2016 and 2023. These policies and other legal frameworks specify that ICT ought to be used strategically and carefully, with attention on the context, needs, and goals of each local government and its community (National ICT Policy, 2023).

The study examined the policies and legal frameworks governing ICT to improve human resource performance in LGAs in Kinondoni Municipality. The results showed that the respondents strongly agreed that policies and regulations governing ICT are in place, as reflected by a high mean of 4.2 (SD = 0.75). This indicates a consensus on the presence of these frameworks. However, the mean of 3.8 (SD = 0.85) for policy updates shows that while the frameworks exist, there is moderate variability in the views, which suggest that the policies are not updated to align with the latest advancements in ICT. The human resource-specific policies scored a mean of 4.0 (SD = 0.70), indicating a generally strong belief in the relevance of ICT to human resource management, with relatively low variability in responses.

In terms of enforcement, the mean of 3.6 (SD = 0.90) points to moderate agreement, with more significant variability, showing that while enforcement mechanisms exist, they may be lacking consistency across departments. The impact of legal frameworks such as data protection and cybersecurity laws were recognized with a mean of 4.1 (SD = 0.65), suggesting a strong consensus on their importance. However, the slightly lower mean of 3.9 (SD = 0.80) for alignment with ICT policies reflects some uncertainty in how well these frameworks are integrated. The challenges in interpreting legal frameworks, reflected by a mean of 3.5 (SD = 0.95), show great variability, indicating significant differences in how well these laws are understood and applied.

Regarding the mechanisms for monitoring compliance, the findings show that (mean = 3.7, SD = 0.88) and the consequences for non-compliance (mean = 4.0, SD = 0.70) show a generally positive outlook but with a room for improvement. The gaps and inconsistencies in the policy and legal framework (mean = 3.4, SD = 1.00) and challenges in implementation (mean = 3.8, SD = 0.92) further reveal a need for more cohesive and practical frameworks. The higher variability in these responses underscores the complexity and unevenness in how ICT policies and legal regulations are applied across different departments.

Table 2*The Policy and Legal Framework Governing the use of ICT in Kinondoni Municipality*

Statement	Mean	STD
There are specific policies and regulations in place at the national or local level that govern the use of ICT in LGAs.	4.2	0.75
The policies and regulations have been updated to address the evolving landscape of ICT.	3.8	0.85
Some HR-specific policies or guidelines address the use of ICT in H.R. management.	4.0	0.70
These policies are enforced and monitored.	3.6	0.90
Relevant legal frameworks (e.g., data protection laws and cybersecurity laws) impact the use of ICT in LGAs.	4.1	0.65
These legal frameworks align with the existing ICT policies and regulations.	3.9	0.80
There are challenges and ambiguities in interpreting or applying these legal frameworks.	3.5	0.95
There are mechanisms in place to monitor compliance with these regulations.	3.7	0.88
There are consequences for non-compliance with ICT policies and regulations.	4.0	0.70
There are gaps and inconsistencies in the existing policy and legal frameworks.	3.4	1.00
Significant challenges are faced in implementing and enforcing these regulations.	3.8	0.92

Generally, the examination of the policy and legal frameworks governing ICT use in Kinondoni Municipality reveals a generally upbeat assessment of the existing regulations and guidelines as indicated by the high mean scores, which suggest an agreement on their presence. However, the moderate mean score for policy updates suggests that while these frameworks are established, they may not fully address the rapid technological advancements. This can result in outdated policies that fail to adequately regulate emerging ICT trends, reflecting a common issue where legal frameworks fail to keep up with technological innovation. The variability in the views on policy updates underscores the need for ongoing revisions to ensure that regulations remain relevant and practical. This inconsistency can undermine the overall effectiveness of ICT regulations, leading to uneven implementation and compliance. These findings are consistent with the broader research indicating that legal and regulatory frameworks often do not align with the fast-evolving nature of technology, resulting in enforcement difficulties and varying levels of compliance.

This is consistent with Bélanger *et al.* (2022) and Salim & Tulu (2022), who emphasize that legal and policy frameworks often lag behind technological changes, leading to outdated regulations that effectively address emerging ICT trends. The variability in enforcement and interpretation found in the Kinondoni study mirrors the challenges reported by Salim and Tulu (2022) who highlight that inconsistent application and ambiguous legal language can undermine the effectiveness of ICT regulations. However, findings also point to specific issues with alignment between legal frameworks and ICT policies, a concern that has usually surfaced in broader discussions about the need for ongoing review of the legal frameworks to keep pace with technological innovation (Bélanger *et al.*, 2022).

4.3 The Contribution of ICTs on Improved Human Resources Performance in LGAs

4.3.1 The Human Resource Supports Functions in ICT Services in the District

It has increasingly become clear that the success implementation of ICT is not dependent on the availability or absence of one individual factor but is determined through a dynamic process involving a set of interrelated factors. Evidence suggests that the use of ICTs significantly improves government institutions' performance in developed countries. For example, Asare *et al.* (2020) and Appati (2021) revealed that countries like the United Kingdom, the United States and other European countries have improved more on integrating their government services with the ICTs than developing countries like Liberia, Ivory Coast, and other western African countries. The same case applies in Tanzania, although there is a paucity of studies on the direct contributions of ICTs to improved human resource performance. The findings in Table 3 show that ICT plays a crucial role in supporting records keeping in numerous ways, like enhancing efficiency, accessibility, and data integrity. The record-keeping option had the highest frequency (40%) compared to other options. However, effective use of the same is still a daunting challenge in developing countries like Tanzania.

Table 3*The Human Resources Functions are supported by ICT among these*

Category	Frequency	Per cent
Recruitment	20	17.4
Payroll	15	13.0
Training	25	26.1
Performance management	10	8.7
Records keeping	40	34.8
Total	100	100.0

Evidence from the review revealed further that several efforts have been made by the government of Tanzania to address policies that affect the use of ICT (Lubua, 2017). These include formulating policies and legislation on the use of ICT in LGAs. Despite exposing these efforts, this scholar does not tell more about how ICT has improved the performance of the LGAs he is talking about. Similarly, a study by Eriksen (2018) on the use of ICTs in the LGAs in Tanzania also points out the innovation efforts without touching on the relevance of the ICTs to improving the performance of human resources debasement in LGAs. This gap must be taken into account in future interventions, drawing practical experience from Kinondoni Municipality for enhanced use of ICT to improve performance of human resource departments.

4.4.2 Level of ICT Adoption and Utilization in Human Resource Functions in Kinondoni LGA

The researcher determined the level of ICT adoption and utilisation in human resource functions within Kinondoni LGA. The results indicate that most offices have access to internet-connected computers, with a high mean score of 4.3 and a relatively low standard deviation ($SD = 0.75$). This suggests that ICT infrastructure is widely available, providing a strong foundation for digital human resource processes. However, the implementation of HRIS systems shows a slightly lower mean of 3.9 ($SD = 0.85$), indicating that while many offices have adopted HRIS, there are still areas where this critical system is either not fully utilised or underdeveloped.

Regarding ICT skills, the findings indicated that human resource personnel of Kinondoni LGAs had a good level of competence, as reflected by a mean score of 4.1 ($SD = 0.72$), indicating that most employees are confident in using ICT tools. However, the use of ICT tools in daily human resource operations scored a mean of 4.0 ($SD = 0.80$), showing that while tools are available and staff are skilled; there is still a need to fully integrate these tools into everyday human resource tasks. The support of ICT for essential human resource functions like recruitment, payroll, training, and performance management received a mean score of 3.8 ($SD = 0.90$), which reflects moderate adoption but highlights some challenges in leveraging ICT to make improvements in these areas.

Challenges in ICT use, such as software complexity and technical issues, scored 3.5 ($SD = 0.95$) and 3.6 ($SD = 0.85$), respectively, showing that these issues still hinder optimal ICT utilization. On a positive note, respondents agreed that adopting ICT has improved human resource efficiency, with a mean of 4.2 ($SD = 0.70$), indicating a noticeable impact on productivity. However, the availability of regular training (mean = 3.7, $SD = 0.88$) and technical support (mean = 3.9, $SD = 0.82$) suggests that more investment in training and support services could further enhance the effectiveness of ICT in human resource operations. Overall, the findings highlight a strong foundation for ICT adoption but also indicate critical areas that need improvement in order to realise the potential of ICT in facilitating the execution of human resource functions.

Table 4

The Level of ICT Adoption and Utilization in Human Resources. Functions in Kinondoni LGA

Statement	Mean	SD
The computers in my office are connected to the Internet.	4.3	0.75
HRIS (Human Resource Information System) is implemented in my office.	3.9	0.85
The HR personnel in my office have the necessary knowledge and skills to use ICT tools effectively.	4.1	0.72
ICT tools are regularly used in daily HR operations in my office.	4.0	0.80
ICT supports HR functions such as recruitment, payroll, training, performance management, and records keeping.	3.8	0.90
I encounter challenges related to software complexity when using ICT tools.	3.5	0.95
I encounter challenges in using ICT tools due to technical issues.	3.6	0.85
Adopting ICT in H.R. has improved the efficiency of H.R. operations in my office.	4.2	0.70
My office provides regular training on using ICT tools for HR. Personnel.	3.7	0.88
The level of technical support available for ICT-related issues in H.R. is adequate.	3.9	0.82

Based on the study's findings regarding ICT adoption and utilisation in human resources functions within Kinondoni LGA, the interviews with key informants provided valuable qualitative insights that confirm and elaborate on the quantitative results. The interviews revealed that while the ICT infrastructure, including internet-connected computers, is broadly available within the offices, there are significant challenges in the implementation of HRIS systems. A senior I.T. manager noted,

"Our offices are generally well-equipped with internet-connected computers, which provide a solid foundation for implementing digital human resources processes. However, the actual implementation and utilisation of HRIS systems vary significantly across departments. Some units are still grappling with fully integrating these systems into their daily operations, which affects overall efficiency and effectiveness in human resources functions."

This observation aligns with the study's finding that while ICT infrastructure exists, HRIS systems are not yet fully optimised across all departments. The interviews also confirmed that human resource personnel generally possess good ICT skills but there are gaps in the use these tools in daily human resource functions. A Human Resource Director commented,

"Our Human Resource staff is quite competent in using ICT tools, and we have invested significantly in developing these skills. However, a noticeable gap exists in how these tools are applied in our daily human resources operations. Despite having the tools and trained staff, we are not fully leveraging these resources. This discrepancy is due to varying levels of integration and application of these tools across different human resources tasks and processes."

This feedback corroborates the study's finding that, although ICT tools are available and the personnel are skilled, improvement in the use of these tools in daily human resource operations is necessary. Challenges such as software complexity and technical issues were also highlighted in the interviews. A technical support specialist explained,

"We frequently face problems with software complexity and various technical issues that disrupt our Human Resources functions. These challenges lead to delays and inefficiencies, making it difficult for staff to use the ICT tools effectively. Despite our efforts to address these problems, the persistent issues with software complexity and technical glitches impede our progress."

Additionally, the need for enhanced training and support was emphasised by a training coordinator, who stated,

"Although we offer some training and technical support, it is clear that these resources are insufficient. There is a critical need for more comprehensive and ongoing training programs and improved technical support to ensure that staff can effectively use ICT tools. Addressing these needs would help close the gaps in ICT utilization and improve overall efficiency."

These insights reinforce the study's findings which show that challenges related to software complexity and insufficient supports are significant barriers despite the positive impact of ICT on H.R. efficiency.

The findings on ICT adoption and utilisation in human resources functions in Kinondoni LGAs highlight a solid foundation for digital transformation, with high mean scores for internet-connected computers and ICT skills among human resource personnel. However, the slightly lower mean scores for HRIS implementation and the use of ICT tools in daily operations suggest that the improvement is needed in the integration of these tools into human resources practices despite the fact that infrastructure and skills are in place. This gap between infrastructure and utilisation underscores that organisations have the necessary resources but they struggle with effective implementation and integration of ICT into their routine processes.

The challenges related to software complexity and technical issues are another barrier to effective ICT use. The moderate mean scores for these issues point to technical difficulties hindering the optimal use of ICT tools. The need for better training and support is also evident, as indicated by the lower scores for training availability and technical support. This suggests that, despite having skilled personnel and available tools, inadequacy of support and training prevent human resource staff from fully leveraging ICT resources. The findings align with previous studies which have emphasised the importance of addressing technical and support challenges to enhance ICT adoption and effectiveness (Bélanger *et al.*, 2022; Osei & Frimpong, 2024).

Despite these challenges, the positive impact of ICT on human resource performance is highlighted by its benefits in improving human resource functions as indicated by the findings. While the ICT tools are beneficial, their full potential has not been unleashed due to the identified barriers. To maximise the benefits of ICT, it is crucial to address these challenges comprehensively by providing technical support, offering regular training, and ensuring seamless integration of ICT tools into H.R. operations, is crucial. This approach will help bridge the gap between the availability of technology and its practical use, leading to enhanced human resource performance and productivity.

The results agree with Osei & Frimpong (2024) who argue that while organisations may possess ICT resources, effective integration and utilisation of those tools often lag due to technical difficulties and insufficient training. The finding that software complexity and technical issues are significant barriers aligns with the research by Bélanger *et al.* (2022), which underscores the importance of addressing technical challenges and providing adequate support to enhance ICT adoption. The finding that ICT has a positive impact on human resource performance despite these challenges faced in its use supports Osei & Frimpong (2024) who found that effective ICT utilisation can lead to improved performance but the barriers must be addressed first in order to realise the potential of ICT.

4.5 Challenges in using ICT to Improve Human Resource Performance in Kinondoni Municipality

The study explored the potential challenges to effective use of ICT in Local Government Authorities (LGAs) to improve human resources performance in service delivery in the Local Government Authorities (LGAs). The findings indicated that several barriers hinder effective adoption and utilization of ICT in human resource functions in Kinondoni Municipality. One of the most significant challenges identified is limited funding for ICT infrastructure,

software, and training, which had the highest mean score (3.97) with a low standard deviation (0.94), indicating a widespread agreement among respondents. This suggests that inadequate financial resources constrain the procurement and upgrading of essential ICT equipment/facilities, leading to delay in technological progress. Difficulties in integrating ICT systems (mean = 3.78, SD = 1.20) and lack of adequate technical support for ICT systems (mean = 3.70, SD = 1.20) also emerged as strong barriers, reflecting the technical challenges in streamlining various ICT systems and ensuring consistent maintenance and support, both crucial for smooth human resource operations. Concerns over insufficient internet connectivity, outdated hardware, and power supply issues (mean = 3.44, SD = 1.51) further highlight the infrastructural difficulties that impede the proper functioning of ICT systems in LGAs. Although some respondents agreed that the ICT facilities were in place, the insufficient knowledge and skills among human resources staff to use ICT effectively (mean = 3.37, SD = 1.46) indicate a gap in human capacity, which makes it difficult for staff to leverage the full potential of ICT.

Challenges such as opposition to adopting new ICT tools (mean = 2.91, SD = 1.36) and concerns about data privacy and security breaches (mean = 3.45, SD = 1.31) also surfaced. Resistance to change could stem from a lack of training or fear of technology, while security concerns reflect the need for more robust data protection measures. Moreover, obstacles posed by existing policies and regulations (mean = 2.95, SD = 1.38) and incomplete, inaccurate, or inconsistent data (mean = 2.87, SD = 1.48) point to structural and operational inefficiencies that lessen the impact of ICT on human resource performance. Generally, while ICT adoption has the potential to improve human resource performance in LGAs significantly, these findings reveal that financial constraints, technical challenges, inadequate training, and resistance to adopt new technologies must be addressed in order to realise its full benefits.

Table 5

The Challenges of ICT use towards Improving Human Resources Performance in LGAs

Statement	Mean	SD
Insufficient internet connectivity, outdated hardware, and power supply issues	3.44	1.51
Difficulties in integrating different ICT systems	3.78	1.20
Lack of adequate technical support for ICT systems	3.70	1.20
Insufficient knowledge and skills among H.R. staff to use ICT effectively	3.37	1.46
Opposition to the adoption of new ICT tools and processes	2.91	1.36
Concerns about data privacy and security breaches	3.45	1.31
Absence of a clear ICT strategy aligned with H.R. objectives	3.14	1.29
Limited funding for ICT infrastructure, software, and training	3.97	0.94
Obstacles posed by existing policies and regulations	2.95	1.38
Incomplete, inaccurate, or inconsistent data hindering ICT effectiveness	2.87	1.48
Difficulties in integrating ICT tools into existing H.R. workflows	3.67	1.15
Reluctance of employees to adopt new ICT-based HR practices	3.14	1.50
Decrease in productivity due to ICT implementation	2.60	1.10

In addition to the quantitative results, findings from interviews with key informants provided valuable qualitative insights that confirmed the challenges associated with ICT use in improving human resource performance in LGAs in Kinondoni. These interviews with senior officials and technical staff helped to paint a clearer picture of the day-to-day difficulties encountered in adopting and utilising ICT for human resource functions. A senior human resource officer highlighted budgetary constraints as a critical challenge, stating,

"We have plans to upgrade our ICT systems, but the budget allocated for these upgrades is always insufficient. We are often forced to work with outdated software and hardware, significantly slowing down our processes. For instance, tasks that could be automated take much longer, and it frustrates the entire human resource team."

This reflects implies limited funding is a significant issue, preventing the full potential of ICT systems from being realised in human resource functions. The lack of resources to modernise systems creates inefficiencies that affect overall human resource performance. Similarly, an ICT support officer discussed the technical difficulties related to system integration and inadequate technical support. He remarked,

"We are currently using different systems for payroll, recruitment, and performance management, but these systems don't communicate well with each other. We also lack sufficient technical support to resolve issues when they arise, leading to delays and inefficiencies in daily human resource operations."

This confirms the quantitative finding that difficulties integrating ICT systems and lack of adequate technical support are critical barriers to improving human resource performance. The complexity of integrating multiple ICT tools without seamless communication between them adds to the challenges faced by human resource departments. This limits the effectiveness of ICT in streamlining human resource processes.

A training officer further reinforced these findings by highlighting human resources personnel's insufficient skills and knowledge in using ICT tools effectively. She observed,

"Many human resources staff still lacks the training to use ICT tools efficiently. Basic tasks, like updating employee records or managing payroll, take much longer because people don't fully leverage the software. This knowledge gap significantly impacts our productivity."

This statement aligns with the study's findings, underscoring the need for more comprehensive training to ensure employees can fully use available ICT systems. Even the most advanced ICT tools cannot improve human resource operations effectively without the proper skills.

In addition, a senior administrative officer mentioned the resistance to adopting new ICT tools, remarking,

"There's still some resistance to new technology within the human resource team. Some employees feel more comfortable using the old manual systems they are used to and are hesitant to embrace the new ICT tools we are introducing."

This supports the finding on opposition to new ICT tools and processes, highlighting that, alongside technical and budgetary issues, cultural factors and resistance to change also play a role in limiting ICT adoption.

The findings support previous studies which revealed different challenges in various places. For instance, Kalikawe (2010) assessed the effectiveness of HRIS in parastatal organisations and revealed that the use of ICT is hindered by a lack of sufficient ICT infrastructure and a lack of capacity-building for the staff in Tanzania. His study reflects only the uses of ICT in the National Housing Corporation (NHC) in Dar es Salaam, and very little is said about the LGAs. This objective presents the findings of a study conducted to examine the relationship between ICT adoption and human resource performance indicators within local government authorities (LGAs) in Kinondoni Municipality. The objective was to identify how ICT adoption has influenced key Human Resource outcomes such as employee productivity, job satisfaction, turnover rate, employee development, and recruitment efficiency.

In the same perspective, Kassam (2013) argues that the use of ICTs in Shinyanga Municipality is hindered by poor government regulation policies, a lack of management commitment, and a lack of qualified employees in the LGAs to use the technologies effectively. Kassam's assertions are also supported by the claims of Kimani (2017) and Napitupulu (2018). These two scholars have studied the use of ICTs in Tanzania. They all show that despite the importance of ICTs in simplifying various government services through online websites, the government of Tanzania still lacks adequate ICT facilities and qualified experts with computer literacy and ICT skills.

Moreover, Chinyuka (2018) has studied the implementation of the Human Capital Management Information System (HCMIS) in LGAs in Tanzania. He discloses the lack of awareness of internet facilities among policymakers, government officials, and the ruling class in general and the minimum involvement of academic institutions in network building as challenges mitigating the use of ICTs. This is similar to what Matimbwa and Masue (2019) revealed in their study on the use and challenges of human resources information systems in Tanzanian public organisations. In this study, these scholars stipulated that the ICT execution in many LGAs can only be improved with new employee skills and abilities. Thus, it is essential for the current study on the Kinondoni Municipality to systematically assess the contribution of ICT in improving human resource performance, specifically in the LGAs in the Municipality of Kinondoni.

The study identifies several significant challenges hindering the effective use of ICT in improving human resource performance within Kinondoni Municipality. The foremost issue is limited funding for ICT infrastructure, software, and training, which received the highest mean score. This financial constraint restricts the ability to procure and upgrade essential ICT tools, leading to inefficiencies and a lag in technological advancements. Limited funding is a critical barrier that affects the overall capacity of human resources departments to implement and maintain effective ICT systems, echoing broader concerns about resource allocation in public sector organisations (Rahman *et al.*, 2021).

Technical difficulties, including problems with system integration and lack of adequate support, further exacerbate the challenges. The difficulties in integrating different ICT systems and the insufficient technical support reflect a broader issue of managing complex ICT environments. These technical barriers disrupt human resource functions and hinder the effective use of technology. The high variability in responses to these challenges highlights the need for better technical solutions and support structures to address the issues effectively. This finding aligns with Salim & Tulu (2022) whose findings indicated that technical difficulties and lack of support are significant obstacles to ICT adoption.

Resistance to new ICT tools and concerns about data privacy add another layer of complexity. Resistance to change and data security issues are common barriers in ICT adoption, reflecting broader organisational and cultural challenges. Addressing these issues requires a multifaceted approach, including enhanced training, clear communication about the benefits of new technologies, and robust data protection measures. Overcoming these barriers is essential for full realisation of the potential of ICT in influencing human resource functions, as highlighted by the study's findings and supported previous studies on ICT adoption and organisational change (Bagozzi *et al.*, 2023; Wang *et al.*, 2024).

These issues are comparable to those identified in studies by Rahman *et al.* (2021) and Wang *et al.* (2024), who highlight that limited funding and technical barriers are significant obstacles to effective ICT implementation in public organisations. Rahman *et al.* (2021) note that financial constraints often limit the ability to invest in necessary infrastructure and training, a challenge echoed in the Kinondoni findings. The technical difficulties and resistance to change reported in the Kinondoni study align with the broader research indicating that overcoming these barriers requires addressing both technical and organisational challenges (Salim & Tulu, 2022; Wang *et al.*, 2024). The need for improved training and support structures highlighted in the Kinondoni study is also consistent with what has been recommended in the literature on how to enhance ICT adoption and effectively address these critical barriers (Bagozzi *et al.*, 2023).

V. CONCLUSIONS & RECOMMENDATIONS

5.1 Conclusions

The main objective of this study was to assess the contribution of information and communications technology in improving human resource performance in local government authorities in Tanzania. The study examined the policy and legal frameworks governing ICT usage within Kinondoni Municipality. The findings revealed that policies and regulations governing ICT are in place but they need to be updated in order to accommodate the latest advancements in ICT. While these laws are acknowledged as necessary, there is some uncertainty about their alignment with ICT policies. Addressing these issues requires concerted efforts to revise and harmonise legal frameworks to better align with technological advancements and ensure consistent and effective enforcement across all departments.

The use of ICT was found to significantly contribute to improved performance of human resources in the local government authorities in Tanzania and Kinondoni municipal in particular. From the discussion, it can be concluded that integrating Information Communications Technology (ICT) in local government authorities in Tanzania has significantly enhanced human resources performance. It facilitates efficient communication, streamlined processes, and improved data management, leading to better decision-making and service delivery. Generally, it can be argued that the findings of this study provide strong evidence for the positive relationship between ICT adoption and human resources performance in Kinondoni Municipality LGAs. By addressing the identified challenges and leveraging the opportunities presented by ICT, LGAs can significantly improve their human resource practices and achieve better outcomes. Additionally, despite the availability of ICT infrastructure and skilled personnel, the full potential of these tools remains unrealised due to software complexity, inadequate technical support, and insufficient training. These measures will address current challenges and put Kinondoni Municipality in better position to harness the benefits of ICT for future human resource management.

5.2 Recommendations for Policy

To effectively and efficiently address the effects of ICT use on human resources performance in local government authorities in Tanzania, several recommendations can be drawn from this study. First, the Kinondoni Municipality should review and update its ICT policies and legal frameworks to align more effectively with technological advancements. This adaptation will ensure that the municipality remains responsive to the dynamic nature of ICT and its evolving role in enhancing human resource performance. Second, investing in comprehensive training programs for human resource personnel and improving technical support services is essential. This approach will help bridge the gaps in ICT utilization by equipping staff with the necessary skills and providing timely assistance to overcome technical challenges. Lastly, financial and infrastructural constraints must be addressed to optimize ICT adoption and integration. The municipality should prioritize securing adequate funding to upgrade ICT infrastructure and tackle challenges such as outdated hardware and insufficient internet connectivity. These measures will collectively contribute to the enhanced utilization and impact of ICT on human resource performance in local government authorities.

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