

RESEARCH ARTICLE

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The contribution of information communications technology on improved human resources performance in Kinondoni Municipality, Tanzania

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Abstract

The study assessed the contributions of ICT in improving human resource performance in Kinondoni Municipality. It specifically focused on the policy and legal framework governing ICT use, the contribution of ICT to human resource performance, and the challenges associated with ICT adoption in the study. A descriptive research design was employed, utilizing both qualitative and quantitative methods. A mixed-methods approach was used, with a sample of 100 respondents selected through purposive and stratified random sampling. Data collection included both primary and secondary sources, and quantitative data were analyzed using SPSS for descriptive statistics, while qualitative data from interviews were analyzed thematically. The findings revealed that most respondents strongly agreed that ICT policies and regulations are well-established, as reflected by a mean score of 4.2 (SD = 0.75). The study further assessed the contribution of ICT in improving human resource Performance, particularly in records management. ICT enhanced efficiency, accessibility, and data integrity, with record-keeping being the most frequently cited benefit (40%). However, practical implementation of ICT remains a significant challenge, especially in developing countries like Tanzania. Most offices were internet-connected computers (mean = 4.3, SD = 0.75), suggesting a solid ICT infrastructure foundation. However, the use of Human Resource Information Systems (HRIS) showed a slightly lower mean of 3.9 (SD = 0.85), indicating that while HRIS adoption is underway, its full utilization is still limited. Some barriers to full ICT implementation cited included inadequate training and lack of comprehensive integration into human resource practices. The study concludes that ICT has significantly improved human resource performance in LGAs, supporting better governance and service delivery. To maximize ICT's potential, further investments in infrastructure, continuous training, e-governance initiatives, and impact evaluation frameworks are recommended to improve human resource performance and contribute to national progress.

Keywords: Policy environment, Regulatory framework, Information communications technology, Human resources performance, Local government authorities, Tanzania

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1. INTRODUCTION

Integrating information and communication technologies (ICTs) in governments significantly improves service delivery in many countries. The ICTs streamline various government services and have enhanced the effectiveness of the managerial activities of many governments in developed and developing countries (Napitupulu et al., 2018). Using ICTs in developed and developing countries is paramount for effectively delivering services to their people (Alhassan et al., 2021; Mensah et al., 2020). In the context of local government authorities (LGAs), the use of ICTs 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 not only to achieve efficiency but

also to allow people access to improved services. Significantly, this increases government accountability to its people (Matimbwa et al., 2019; Poncian, 2020). The rise in ICT use is an opportunity for fostering the civic and political engagement of the general public at the global level (Lubua, 2017; Appati, 2021).

In Tanzania, the use of ICTs by local government authorities (LGAs), particularly in human resources departments (HRDs), is recent (United Republic of Tanzania, 2016). The LGAs, according to Article 145 of the Constitution of the United Republic of Tanzania of 1977, are tasked with keeping and updating personnel records, including recruitment and selection, employee reports, deductions, career planning, training, and development (Njau, 2018). Earlier, the LGAs,

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whose origins date back to the mid-1920s as "native authorities" then inherited after independence before their reorganization as the Regional Decentralisation in 1972, were manually processing various information regarding their services and records (Ishijima et al., 2015).

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 a slow adoption of information technology in their government services due to several factors, including a lack of funds to facilitate and inadequate skilled personnel in government departments. Using ICTs since the 1990s and early 2000s has been common in other 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 of public service delivery by using the ICT. In addition, ICT smooths knowledge acquisition and learning among public sector employees, which improves their skills, competencies, and performance (Mensah et al., 2020).

The acquisition of ICT skills and knowledge around the world has lowered the performance of manual administrative activities in Tanzania. The challenges of incomplete, inaccurate, and outdated employee information in various government departments also forced Tanzania to adopt the computerized application software, the Human Resource Information System (Njau, 2018; Matimbwa et al., 2019). This recognition of ICTs went hand in hand with buying up-to-date equipment and training Human Resources Officers to improve human resource 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 the decade now, a significant increase in the use of innovative systems to improve service delivery is argued to revolutionize human resources services in the LGAs by increasing the pace of services, including, for example, speeding up employee data, improving intra- and inter-departmental coordination and data sharing, smoothing access to data, and reducing operational expenses (United Republic of Tanzania, 2016; Lubua, 2017; & Njau, 2018).

The adoption of ICTs promotes efficiency and policy effectiveness because people are served without travelling far away to follow e-governance services

(Lubua, 2017). It is clear that using ICTs significantly plays a crucial role in many aspects of service delivery to people. It is thus necessary to investigate the contributions of these technologies to improved human resource performances in developing countries like Tanzania by paying attention to the local government authorities.

The studies on the use of ICT to facilitate service delivery and promote the human resources information system in Tanzania by local government authorities have attracted the attention of many researchers in and outside Tanzania. For example, researchers such as Kassam (2013), Ishijima et al. (2015), Lubua (2017), Njau (2017a & 2018b), Chinyuka (2018), Matimbwa et al. (2019a, 2020b & 2021c), and Poncian (2020), to name a few, have studied the adoption and use of ICTs in Tanzania. In their studies, there is a consensus that ICTs have been a very significant and valuable tool in transforming the functions of local government authorities, and thus, the country had no option in 2011 to adopt and use them to improve government accountability. However, in their studies, the focus has been placed on the efforts to adopt and implement ICTs in the Tanzanian government. Little has been examined on the contribution of ICTs to the improved human resources performance of the local government authorities in Tanzania. These previous studies provide a general picture of using ICTs in Tanzania.

Therefore, this study will fill this void by comprehensively assessing the contributions of ICTs in improving human resources performance, especially in LGAs in Tanzania. Specifically, the study reviewed the policy and legal framework governing the use of ICTs, assessed the contribution of ICTs to improved 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 status of ICT's contributions to improved human resources performance in the Kinondoni municipality and Tanzania at large.

2. Theoretical Framework

The Goal-Setting Theory guided this study, first put forth by Edwin A. Locke in the 1960s and later developed and improved in the 1990s (Locke & Bryan, 1969) to facilitate researchers studying goal-setting studies. Until now, this theory has remained relevant to studying any aspects 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), goal-

setting theory is a performance management theory that involves identifying specific goals and objectives for employees before setting up a system that tracks their progress towards 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 to keep employees engaged and boost 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 an attempt to assess the contributions of ICT use to improved human resource performance in the LGAs in Tanzania, this theory is relevant since it often applies to organizations that want to improve their employee's productivity levels. In this context, the organization typically works because it gives workers a clear picture of what their manager requires of them and how their manager 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 bring high performance to the human resources departments in the Kinondoni Municipality.

3. Methodology

This section outlines the methodology employed to assess the contribution of Information and Communications Technology (ICT) to improved human resources performance in local government authorities (LGAs) in Tanzania. This study adopted a descriptive research design, which was suitable for identifying and analyzing the contribution of ICT to human resources performance within LGAs. A mixed-methods approach was used for this study, integrating both qualitative and quantitative research methods. The qualitative approach explored the policy and legal frameworks, as well as the challenges of ICT adoption in LGAs, while the quantitative approach assessed the extent to which ICT contributed to human resources performance improvements. This approach provided a comprehensive understanding of the topic, enabling data triangulation for more reliable and in-depth findings.

The target population for this study included employees and stakeholders in human resources management within the Kinondoni Municipality. The total population was estimated to be around 4161 employees, encompassing a diverse range of roles and levels of ICT engagement. The employees who were directly linked with ICT use and human resource

performance were 140. A Krejcie and Morgan table was used to determine the study sample size. The table indicated that for the population of 140, the appropriate sample size was 100 respondents. The respondents were purposefully selected from the entire population, and stratified random sampling techniques were used to select the respondents. While primary data was collected through structured questionnaires and semi-structured interviews, secondary data was gathered from official government reports, policies, and previous studies on ICT use in local government settings. Quantitative data collected from the questionnaires was analyzed using descriptive statistics with the help of software like SPSS (Statistical Package for Social Sciences). The analysis helped in understanding trends and patterns in the adoption of ICT in human resource performance. Qualitative data from interviews was analyzed using thematic analysis, where patterns and themes related to policy frameworks, ICT challenges, and contributions were identified and categorized. Findings were presented in tables, charts, and narrative descriptions for clarity and to facilitate straightforward interpretation of the data.

4. Results and Discussion

This section presents the study's findings on the contribution of Information and Communications Technology (ICT) to improved human resources performance in local government authorities (LGAs) in Tanzania, specifically focusing on Kinondoni Municipality. The section is organized into sections that provide an overview of the respondents' profiles, followed by detailed analysis and presentation of data aligned with the study's specific objectives. The results include both quantitative and qualitative data, providing comprehensive insights into the role of ICT in enhancing human resources performance, the existing legal and policy frameworks, and the challenges faced in ICT adoption.

4.1 General Characteristics of Respondents

The respondents in this study were selected from various departments within the 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 male and female perspectives on ICT's role in human resource performance. Out of the 100 respondents, 58% were male, while 42% were female. This distribution indicates slightly higher participation of male employees 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 to ensure 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 respondents (45%) were between the ages of 31-40 years, followed by 30% in the 21-30 age group, 15% between 41-50 years, and 10% over 50 years old. 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 older staff.

4.1.3 Educational level of respondents

The educational background of respondents is a crucial factor in understanding their capacity to utilize ICT to improve human resource performance. The study revealed that 65% of respondents held a bachelor's degree, 20% had postgraduate qualifications, and 15% had a diploma or certificate. This high educational attainment indicates that most respondents are well-equipped to engage with ICT systems and technologies used in human resource processes. However, the data also suggests 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 utilize 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 of experience, and 10% had over 15 years of experience. The data indicates that many respondents have 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 4.1: 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

Source: Field Survey (2024)

4.1.5 Departmental distribution of respondents

The study's respondents were drawn from key departments within Kinondoni Municipality, providing a well-rounded perspective on the impact of ICT on human resource performance across various local government functions. The distribution included 30% from the education sector, encompassing primary and secondary school teachers, who are pivotal in educational administration and staff management. Regarding health facilities employees, this accounted for 15%, and procurement officers, representing 15%, also participated, highlighting ICT's role in enhancing operational efficiency and communication in critical sectors. Social welfare officers (10%), community development officers (8%), accountants (10%), secretaries (7%), and drivers (5%) further contributed to the diverse representation, ensuring comprehensive coverage of different roles and their interaction with ICT tools.

This varied respondent distribution offers a holistic view of ICT's impact on different municipal functions, from education and health to administration and logistics. The study captures the distinct ICT challenges and benefits experienced across these sectors by including participants from both administrative and service-oriented departments. This approach enables an in-depth analysis of how ICT supports and influences performance in diverse roles, facilitating a better understanding of its overall contribution to local government operations.

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

In recent years, the need for information and communication technology has become a strong force in global social, economic and political life (Hudson, 2024). It is equally important to underscore that using ICT tools has also occupied a crucial role in facilitating the performance of tasks among human resources for improved service delivery, especially in local government authorities. However, issues regarding how it has been of significant contributions remain unclear. 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 2003, 2016 and 2023 national ICT policies, respectively. These policies and other legal frameworks specify that the use of ICT ought to be used strategically and carefully, with attention to the context, needs, and

goals of each local government and its community (National ICT Policy, 2023).

The study examined the policy and legal framework governing ICT usage for improved human resource performance in LGAs within Kinondoni Municipality. Based on the study results, 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 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 views, suggesting that the policies may not entirely keep pace with the rapid 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 in 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, their consistency across departments may be lacking. The impact of legal frameworks, such as data protection and cybersecurity laws, was recognized with a mean of 4.1 (SD = 0.65), suggesting strong consensus about their importance, but the slightly lower mean of 3.9 (SD = 0.80) for alignment with ICT policies reflects some uncertainty in how well these frameworks integrate. The challenges in interpreting legal frameworks, reflected by a mean of 3.5 (SD = 0.95), show tremendous 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 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.

Generally, the examination of the policy and legal framework governing ICT use in Kinondoni Municipality reveals a generally upbeat assessment of

Table 4.2 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 framework.	3.4	1.00
Significant challenges are faced in implementing and enforcing these regulations.	3.8	0.92

Source: Field Survey (2024)

existing regulations and guidelines, as indicated by the high mean scores reflecting 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 lag can result in outdated policies that fail to adequately regulate emerging ICT trends, reflecting a common issue where legal frameworks struggle to keep pace with technological innovation. The variability in 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 broader research indicating that legal and regulatory frameworks often struggle to align with the fast-evolving nature of technology, resulting in enforcement difficulties and varying levels of compliance.

This is consistent with studies by Bélanger et al. (2022) and Salim & Tulu (2022), which 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, the Kinondoni findings also point to specific issues with alignment between legal frameworks and ICT policies, a concern that aligns with broader discussions in the literature about the need for ongoing revisions to 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 increasingly becomes clear that the success of the 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 using ICTs in developed countries significantly improves government institutions' performance. For example, the studies carried out by Mensah et al. (2020; Appati (2021) reveal that countries like the United Kingdom, the United States (U.S.), 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. This experience is the same in Tanzania, despite the shortage of studies on the direct contributions of ICTs to improved human resource performance. From

Table 4.3: 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

Source: Data from the field, 2024

Table 4.3, the study findings show that ICT plays a crucial role in supporting records keeping in numerous ways, like enhancing efficiency, accessibility, and data integrity, so the records-keeping option had the highest frequency (40%) compared to other options. However, in actual practical terms, the effective use of the same is still a daunting challenge in developing countries like Tanzania.

Evidence from the review revealed further that a study by Lubua (2017) significantly observed several efforts by the government of Tanzania to address policies that affect the execution of ICTs. These include efforts like formulating policies and legislation to demonstrate the importance of ICTs in LGAs. Despite exposing these efforts, this scholar does not tell more about what the ICTs have done to improve 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 observed for future interventions, drawing practical experience from Kinondoni Municipality for enhanced contributions of ICTs aligned to the performance of human resource departments.

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

In this aspect, the study aimed to determine the level of ICT adoption and utilization in human resource functions within Kinondoni LGA, and the findings are presented in the table above. 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 resources 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 utilized or underdeveloped.

Regarding ICT skills, the human resource

personnel in Kinondoni LGA show 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 fully leveraging ICT to enhance these areas.

Challenges in ICT usage, 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 for improvement to realize its full potential in human resources functions.

Based on the study's findings regarding ICT adoption and utilization 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 with implementing HRIS systems. A senior I.T. manager noted,

"Our offices are generally well-equipped with internet-connected computers, which provide a solid

Table 4.4: 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

Source: Field Survey (2024)

foundation for implementing digital human resources processes. However, the actual implementation and utilization 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 optimized across all departments.

The interviews also confirmed that human resource personnel generally possess good ICT skills, but there are gaps in utilizing these tools in daily human resource functions. A Human Resource Director commented,

"Our Human Resource staff are 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 personnel are skilled, there remains room for improvement in effectively using these tools in daily human resources operations.

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 emphasized 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 that challenges related to software complexity and insufficient support are significant barriers despite the positive impact of ICT on H.R. efficiency.

The findings on ICT adoption and utilization in human resources functions within Kinondoni LGA 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 usage of ICT tools in daily operations reveal that while infrastructure and skills are in place, there is still significant room for improvement in fully integrating these tools into human resources practices. This gap between infrastructure and utilization underscores a common challenge where organizations have the necessary resources but struggle

with effective implementation and integration into routine processes.

The challenges related to software complexity and technical issues are notable barriers to effective ICT utilization. With moderate mean scores for these issues, it is clear that technical difficulties are 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, adequate support and training prevent human resource staff from fully leveraging ICT resources. These findings align with existing research emphasizing 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 overall positive impact of ICT on human resource efficiency highlights the potential benefits of technology in improving human resource functions. The study indicates that while ICT tools are beneficial, their full potential is not realized due to the identified barriers. To maximize the benefits of ICT, addressing these challenges comprehensively, including improving 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 are similar to the findings by Osei & Frimpong (2024), who argue that while organizations may possess ICT resources, the effective integration and utilization of these tools often lag due to technical difficulties and insufficient training. The study's identification of software complexity and technical issues as 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 positive impact of ICT on human resources efficiency, despite these challenges, reflects the benefits noted by Osei & Frimpong (2024), who found that effective ICT utilization can lead to improved performance, though barriers must be addressed to realize these benefits fully

4.5 The Challenges of ICT use towards improving human resources performance in Kinondoni Municipality

Currently, challenges are likely to happen with using ICTs, which various scholars have presented differently in their studies. For example, in the study conducted by Kalikawe (2010) on the assessment of

the effectiveness of HRIS in parastatal organizations, he specifies that the use of ICTs is hindered by a lack of sufficient ICT infrastructure and a lack of staff capacity in terms of training in Tanzania. His study reflects only the uses of ICTs 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 this study, exploring the potential challenges affecting the effective use of ICT in LGAs for improved human resources performance in service delivery was essential. The study aimed to assess the challenges of ICT use in improving human resources performance in local government authorities (LGAs). The findings indicate that several barriers hinder ICT's effective adoption and utilization in human resource functions across Kinondoni Municipality. One of the most significant challenges identified was limited funding for ICT infrastructure, software, and training, which received the highest mean score (3.97) with a low standard deviation (0.94), indicating widespread agreement among respondents. This suggests that inadequate financial resources constrain the procurement and upgrading of essential ICT tools, leading to a lag in technological progress. Difficulties in integrating different ICT systems (mean = 3.78, SD = 1.20) and lack of adequate technical support for ICT systems (mean = 3.70, SD = 1.20) were also prominent issues, 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 ICT tools 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, making it difficult for staff to leverage the full potential of ICT tools.

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 weaken the impact of ICT on human resource performance. General, 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 new technologies must be addressed to realize its full benefits.

In addition to the quantitative results, interviews with key informants provided valuable qualitative insights that confirmed the challenges associated with ICT use in improving human resources performance within Kinondoni LGA. These interviews with senior officials and technical staff helped to paint a clearer picture of the day-to-day difficulties encountered in adopting and utilizing ICT for human resources 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 the study's finding that limited funding is a significant issue, preventing the full potential of ICT systems from being realized in human resource functions. The lack of resources to modernize 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, limiting 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 lack 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

Table 4.5: 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

Source: Field Survey (2024)

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.

In the same perspective, Kassam (2013) adds to what Kalikawe argues by pointing out 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 expose 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 not far from what Matimbwa and Masue (2019) reveal in their study on the usage and challenges of human resources information systems in Tanzanian public organizations. In this study, these scholars stipulate 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 contributions of ICTs to improved 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 organizations (Hossain 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 research indicating that technical difficulties and lack of support are significant obstacles to ICT adoption (Salim & Tulu, 2022).

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 organizational 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 fully realizing the benefits of ICT in human resource functions, as highlighted by the study's findings and supported by research on ICT adoption and organizational change (Bagozzi et al., 2023; Wang et al., 2024)

These issues are comparable to those identified in studies by Hossain 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 sector organizations. Hossain 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 organizational 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 recommendations in the literature to enhance ICT adoption and effectiveness by addressing these critical barriers (Bagozzi et al., 2023).

5. Conclusions and Recommendations

5.1 Conclusions

The main objective of this study was to assess

the contribution of information and communications technology in terms of improved human resources performance in local government authorities in Tanzania. Based on the study findings, the study examined the policy and legal framework governing ICT usage within Kinondoni Municipality. The study findings revealed that most respondents strongly agreed that policies and regulations governing ICT are in place, indicating a consensus on the presence of these frameworks. However, the need for policy updates shows that while the frameworks exist, there is moderate variability in views, suggesting that the policies may not entirely keep pace with the rapid advancements in ICT. While these laws are acknowledged as necessary, there is some uncertainty about their alignment with ICT policies. Addressing these issues requires a concerted effort to revise and harmonize legal frameworks to better align with technological advancements and ensure consistent and effective enforcement across all departments.

Based on the study results, the use of ICT tools proved 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. The study reveals that ICT 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 indicators 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 unrealized due to software complexity, inadequate technical support, and insufficient training. These measures will address current challenges and position Kinondoni Municipality better to harness the benefits of ICT for future human resource management.

5.2 Recommendations for Policy Implications

To effectively and efficiently address the effects of ICT use on human resources performance in local government authorities in Tanzania, the following recommendations can be made from this study:

- **Adaptation of effective policy and framework:** It is recommended that the Kinondoni Municipality review and update its ICT policies and legal

frameworks to better align with technological advancements.

- **Enhanced training and support:** Investing in comprehensive training programs for human resource personnel and improving technical support services is crucial to addressing the gaps in ICT utilization.
- **The government should address financial and infrastructural constraints:** The Municipality should prioritize securing adequate funding for ICT infrastructure and addressing infrastructural issues such as outdated hardware and insufficient internet connectivity.

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References

1. Alhassan, M.D., Adam, I.O., Musah, A. & Wahaga. E. (2021). The Effects of ICT Adoption on Public Sector Performance: Does the Mediating Role of H.R. Quality Matter? *International Journal of E-Adoption (IJE)* 13(2), 1-16. Retrieved from <https://www.doi.org/10.4018/IJE.2021070103> on January 5, 2024.
2. Appati, J.K. (2021). Performance and Applicability of Transfer Learners for Cocoa Swollen Shoot Detection. *International Journal of Technology Diffusion*. 2021, 68- 77.
3. Chinyuka, A. M. (2018). Implementing Human Capital Management Information System (HCMIS) in Local Government Authorities in Tanzania: A case of Moshi District Council. Masters Dissertation, Mzumbe University.
4. Ishijima, H., Mapunda, M., Mndeme, S. S., & Mlay, V.S. (2015). Challenges and opportunities for effective adoption of HRH information systems in developing countries: National rollout of HRHIS and TIIS in Tanzania. *Human Resources Health*, 13(48).
5. Kalikawe, G. (2010). Assessment on the Effectiveness of HRIS in Parastatal Organizations. NHC Dar es Salaam: Masters Dissertation, Mzumbe University.
6. Kassam, A. (2013). Challenges of Human Capital Management Information System (Lawson Version, 9) in Local Government Authorities: The case of Shinyanga Municipal Council. Masters Dissertation, Mzumbe University.
7. Kimani, J. G. (2017). Challenges facing integration and use of ICT in managing county governments in Kenya. *Journal of Information Technology*, 1(1), 1-1.
8. Lameck, W.U. (2015). Explaining the Performance of Decentralized Recruitment in Tanzania Local

- Government Authorities an Institutional Context Perspective. *International Journal of Academic Research in Business and Social Sciences*, 5(12)
9. Latham, G.P. (2015). Chapter Four-Breaking the Rules: A Historical Overview of Goal-Setting Theory. *Advances in Motivation Science*, Vol.2, pp.99-126. Retrieved from <https://doi.org/10.1016/bs.adms.2015.05.001> on January 10, 2023.
 10. Locke, E.A. & Bryan, J.F. (1969). "The directing function of goals in task performance". *Organizational Behavior and Human Performance*, 4(1), 35-42. Retrieved from [https://doi.org/10.1016/0030-5073\(69\)90030-0](https://doi.org/10.1016/0030-5073(69)90030-0) on January 10, 2023.
 11. Lubua, E. W. (2017). E-Governance and the ICT Legislative Framework. *The International Journal of Engineering and Science*, 6(3), 113-118. Retrieved from <https://DOI: 10.9790/1813-0603019399> on August 20, 2023.
 12. Lubua, E.W. (2017). "E-Governance and the ICT Legislative Framework" *The International Journal of Engineering and Science (IJES)*, 6(3), 113-118. Institute of Accountancy Arusha. Retrieved from <https://www.DOI:10.9790/1813060301> on December 20, 2023.
 13. Matimbwa, H., Masue, O. S. & Shilingi, V. (2019). Usage and Challenges of Human M Resources Information Systems in the Tanzanian Public Organizations. *Journal of Human Resource Management*, 7(4), 131-137. Retrieved from <https://www. DOI:10.11648/j.jhrm.2019704.17> on December 10, 2023.
 14. Matimbwa, H., Masue, O. S. & Shilingi, V. (2020). Technological Features and Effectiveness of Human Resource Information System in Tanzanian Local Government Authorities. *American Journal of Operations Management and Information Systems*, 5(3), 29-40. Retrieved from <https://www. doi:10.11648/j.ajomis.2020> on December 20, 2023.
 15. Matimbwa, H., Masue, O. S., & Shilingi, V. (2021). Effectiveness of Human Resources Information System in the Tanzanian Local Government Authorities: Do Technological, User and Organizational Attributes Matter? *Rural Planning Journal*, Vol. 23 (1), 2021 ISSN: 0856-3460
 16. Matimbwa, H., Shilingi, V. & Masue, O.S. (2021). Effectiveness of Human Resources Information System in the Tanzanian Local Government Authorities: Do Technological, User and Organizational Attributes Matter? *Rural Planning Journal*, 23(1). Retrieved from <https://www.researchgate.net/> on September 11, 2023.
 17. Mensah, R., Cater-Steel, A., & Toleman, M. (2020). "Towards a Shared Services Model to Support e-Government Implementation in Developing Countries: Findings from Liberia." *ACIS 2020 Proceedings*. 47. Retrieved from <https://aisel.aisnet.org/acis2020/47> on December 10, 2023.
 18. Napitupulu, D., Syafrullah, M., Rahim, R., Amar, A., & Sucahyo, Y. G. (2018). Content validity of critical success factors for e-government implementation in Indonesia. In: *Materials Science and Engineering*. IOP Publishing Ltd. 11pp.
 19. National ICT Policy. (2023). *The National ICT Policy 2023: Ministry of Information, Communication and Information Technology*. The United Republic of Tanzania.
 20. Njau, N. F. (2018). Factors Influencing Adoption of Human Resource Information System in Parastatal Organizations; Case of Dar es Salaam. A Dissertation for Award of MSc Degree at Dodoma University, Dodoma, Tanzania.
 21. Njau, S. (2017). Challenges in Using Human Capital Management Information Systems (HCMIS) in Local Government Authorities. A Dissertation for the Award of MSc Degree at Mzumbe University, Morogoro, Tanzania.
 22. Poncian, J. (2020). ICT, citizen engagement and the governance of extractive resources in Tanzania: Documenting the practice and challenges. *The Extractive Industries and Society*, 7(4), 1498-1510. Retrieved from <https://doi.org/10.1016/j.exis.2020> on September 10, 2023.
 23. United Republic of Tanzania (URT). (2011). *Human Capital Management Information System (HCMIS) User Manual (2016)*. Government Printer, Dar es Salaam.