Exploring the Impact of E-Governance on Public Sector Efficiency and Accountability in Local Governments: A Case of Kinondoni and Ubungo Municipalities in Tanzania

Ruth Samwel Temba[1]

[1]tembaruth04@gmail.com

[1]https://orcid.org/0009-0009-4265-3134

[1]School of Public Administration, Yanshan University, Qinhuangdao, Hebei, China 066004

……….…

ABSTRACT

This study explores the impact of e-governance in enhancing service delivery efficiency and transparency in decision-making within local governments, specifically in Kinondoni and Ubungo municipalities in Tanzania. The theoretical foundation of this study was built upon two key frameworks: Innovation Diffusion Theory (IDT) and Principal-Agent Theory. This study used a descriptive research design and a quantitative approach. A stratified random sample of 300 participants (government employees and citizens) completed structured questionnaires. Data were analyzed using descriptive statistics and multiple regression analysis with SPSS software. Secondary data from government reports and policy documents supplemented the primary data to provide additional context. The findings indicate that e-governance significantly improved service delivery and transparency by reducing paper-based processes, speeding up services, and minimizing errors. Regression coefficients of 0.762 for efficiency and 0.735 for transparency were statistically significant (p < .001), with baseline constants of 1.173 and 1.249, respectively, prior to e-governance implementation. The respondents also reported that digital platforms have enhanced citizen engagement and made government operations more accessible. The study concludes that e-governance is a key factor in improving the efficiency of public services and the transparency of decision-making processes in local governments. Recommendations include further expansion of digital platforms, increased digital literacy, and stronger data security measures to maximize the benefits of e-governance.

Keywords: Accountability, Decision Making, E-Governance, Service Delivery, Transparency

……….…

I. INTRODUCTION

E-government is fundamental as a revolutionary change in administrative practices that develop with Information and Communication Technology (ICT) tools and try to revolutionize and improve governmental performance services, accountability, and responsiveness to citizens (Hans & Rutenge, 2024). This innovation undermines more conventional forms of governance; integrating technology into public services. E-government is aimed at providing better relations between the government and citizen on one side and quick access to necessary services on the other side. In its simplest form, the enhancement of conventional paper-based bureaucratic procedures that are time-consuming and riddled with fraud, e-government seeks to reduce waste, improve inefficiencies and meddle of faith between the government and the public (Mollah *et al.,* 2012). Nevertheless, presently e-government is still not adopted at the same rate all over the world due to the differences in the level of development of the world economy, the availability of advanced technologies, and local people's perception of electronic government (Riany, 2021).

To a significant extent, e-government development has intensified in developed economies through the availability of strong digital infrastructure in developed countries, widely spread internet connection across countries and regions, and officials and governments' focus on technology advancement. The examples are countries like Estonia and South Korea which seem to have the best examples of e-governance systems. For instance, Estonians can transact with the government in formal sectors such as healthcare, education, taxation, and voting through digital technologies (McBride *et al.,* 2018; Metcalf, 2019). Likewise, much like the e-governance architecture in place within South Korea, there is little doubt that the current framework in operation is highly transparent when it comes to operations and highly efficient in terms of processes (Myeong, 2023; Turner *et al.,* 2022). Still, for these advanced economies, there are barrier such as infrastructure deficit, funding, and others negative factors that may slow down the growth (Umbach & Tkalec, 2022).

In Africa particularly, e-governance paints a precarious picture that describes more stagnation than growth, though there are exceptional success stories (Michael, 2023; Muridzi & Dhliwayo, 2024). Rwanda and Kenya are good examples as to how ICT can revolutionize public sector relations. For example, Rwanda's Irembo initiative is

an effective policy that cuts down the amount of contact between ordinary citizens and the government by handling a lot of logistical work (Irembo initiative, Thomson, Mukamurenzi *et al.,* 2019). Huduma Centers in Kenya also present an example of integrated models of digital service delivery based on their adaptation and simplicity (Riany, 2021).

Nevertheless, these shown successes still remain very few and in between across the African continent. Some of the challenges that most African countries are faced with include poor broadband connection, fractured ICT environments, and more often than not, lack of adequately reliable financial resources. Furthermore, socio-political factors and the deepening digitalization gap make it difficult for those in rural and low-income settings to access governance and amplify inequalities (Blom & Uwizeyimana, 2020).

In Tanzania, attempts to implement e-governance in public administration are still on an initial stage indicating a trend towards the type of digital change, (Hans & Rutenge, 2024; Mshanga, 2020). The creation of the e-Government Agency (eGA) is a major development in the country's digital government plan. For instance, the Tanzania Revenue Authority developed an e-Government system which has shown advancement in the aspect of FMuG (Adaba et al., 2023). However, e-government adoption is still low particularly at the local government level where institutions are hamstrung by challenges. These are: unreliable ICT infrastructure, erratic power supply, and a deficit of government employee digital literacy (Hans & Rutenge, 2024; Omweri, 2024; Umbach & Tkalec, 2022). Further, there is also civil servant resistance, as well as low citizen awareness which are other challenges that affect the effectiveness of e-government system.

Generally, and specifically at the regional level, there is evidence that though there has been a positive thrust to enabling e-government, implementation remains a challenge. Previous studies cover mostly national level systems which do not necessarily reflect the concern subnational systems face where difficulties and nontransparent processes are more dramatic (Adaba *et al.,* 2023; Hans & Rutenge, 2024; Mshanga, 2020). Further, the role of socio-economic and cultural factors in e-governance outcomes has not been well investigated especially in contexts such as Tanzania where resource constraint is rife. This research fills these gaps with a focus on the levels of diffused e-governance within the local government sectors of Tanzania. It also examines the journeys of change that took place in these systems in response to their effectiveness in increasing efficiency and accountability while also recognizing the current limitations. Based on the findings of this research, strengths and areas of concern are mapped out detailing possible actions for enhancement.

1.1 Statement of the Problem

Despite the remarkable opportunity presented by e-governance to enhance the effectiveness and efficiency of public authority, the use and application of the technology at the local government level remain a challenge especially in developing country like Tanzania. This paper shows that local government authorities (LGAs) are important because they are largely responsible for both serving the citizens and providing services. Still, these entities suffer from inefficiencies, bureaucratic lethargy and opaqueness. Such challenges militate against their ability to respond to the increasing needs of the people who in recent times have demanded better delivery of services that reflect best practices across the globe (Anguche *et al.,* 2024).

To some extent this has been achieved at the national level with endeavor such as the e-Government Agency (eGA), however at the local level the situation is still a puzzle. From the survey a lot of LGAs latch restrictive challenges such as poor hosiery ICT, irregular power supply and lack of skilled personnel to handle digital systems. These constraints have resulted in states with poor service delivery and that states continue to rely on the slow, inefficient, and frequently corrupt paper-based system (Yuliantini & Purnomo, 2024). Therefore, citizens often become frustrated by the slow pace at which they are served and little clarification when it comes to policy decisions.

Furthermore, inequality based on regions and its type makes the implementation of e-governance difficult particularly in rural areas of a country that include India. Rural LGAs are especially bad since they have low internet penetration and general, low literacy when it comes to using technology for both the citizens and the government (Mshanga, 2020). This disparity goes against the chief aim of most e-governance, which is to bring efficiency and equity in the delivery of government services. It raises the question of whose rights would be protected by e-governance since, in rural areas, the availability of basic digital infrastructure is very limited.

Other works including that of Anguche *et al.,* (2024), Yuliantini & Purnomo, (2024), and Mshanga (2020) have identified e-governance to enhance service delivery, transparency and accountability. Nevertheless, scholar studies targeting the factors of e-governance adoption particularly in local governments of Tanzania has been scarce, more so in the identification of problems and prospects confronting the lower hierarchical system.

Although e-governance solutions are being implemented across the country to try to improve the delivery of public services, there is still a long way to go in the local governments of Tanzania. Thus, this study aims at filling this gap by examining the challenges and dynamics of e-governance in Kinondoni and Ubungo municipalities. The purpose here is to look at how these municipalities can improve the e-governance systems that are implemented to

improve efficiency and accountability within the public sector at the local level; it also recognizes solutions that can be implemented to deal with the challenges that are making the deployment of e-governance systems difficult.

1.2 Research Objectives

i. To assess the role of e-governance in improving service delivery efficiency in Kinondoni and Ubungo local governments.
ii. To examine how e-governance enhances transparency and accountability in decision-making processes in Kinondoni and Ubungo local governments.
iii. To identify the challenges and opportunities associated with implementing e-governance systems in Kinondoni and Ubungo local governments.

II. LITERATURE REVIEW

2.1 Theoretical Review

The theoretical foundation of this study is built upon two key frameworks: Innovation Diffusion Theory and Principal-Agent Theory. These theories offer guidance into the organizational framework and guide the analysis of the adoption and the benefits of e-governance in local government authorities.

2.1.1 Innovation Diffusion Theory (IDT)

Innovation Diffusion theory Innovation Diffusion theory (IDT) refers to a process in which an organization implements a new concept coursing through a network until it is adopted by the other network members.

In this perspective, the Diffusion of Innovation Theory (DOI), by Rogers (1962), was applied to provide handles for analyzing how innovations diffuse across contexts, institutions and groups. Rogers identified five key factors influencing the adoption of innovations: These concepts are comparative advantage, compatibility, complexity, trialability and observability. Comparative advantage relates to the perceived organizational returns on the innovation over incumbent practices, while compatibility relates to the conformity of the innovation to the prevailing organization culture, beliefs and past experiences. Complexity is based on how difficult it seems for an individual or an organization to grasp or exercise the innovation. This means that for trialability and observability emphasis the processes need to be experimented and the results visible to gain acceptance.

With regard to e-governance, two Tanzanian local governments provide a good illustration of these dynamics. Urban-based LGAs, who have better favorable infrastructures and resources, find e-governance systems to be beneficial and suitable to implement hence the faster pace of implementation. On the other hand, the rural LGAs which face such issues as scarcity of capital and inadequate infrastructure consider these systems unfavorable and hard to administer in many cases leading to lapses or rejection.

This research relied on the Diffusion of Innovation Theory to analyses factors that either facilitated or compounded the rate of adoption of e-governance in Tanzanian LGAs. Comparative advantage, compatibility and selectivity were taken through an analysis of how they apply in both urban and rural councils. The authors of the study sought to. The objectives of the study were to understand the challenges to effective implementation and to discover the potential for enhancing digital governance within Tanzanian local governments.

2.1.2 Principal-Agent Theory

Principal Agency Theory came into force with the help of Jensen and Meckling in 1976 is related to the relationship between the principals who delegate their powers and the agents who exercise them. The theory highlights an inherent dilemma in governance: adverse selection or arm's length relationship when the agents have better and superior information over the principals, likely encourage the agents to act in a manner that is not in the best interest of the principal. In this case, the flow of information is always skewed creating inefficiency, corruption, and a lack of accountability.

Mitnick (2013) built on this theory to provide the understanding of how a set of mechanisms such as transparency, monitoring and rewarding can help to eliminate information imbalance and ensure the orientation of the agents' behavior to the principals' objectives. Under these circumstances e-government systems serve as primary tools as they support transparency by creating digital processes through which the public may monitor and obtain information. For example, digital procurement systems make procurement more visible, limit the authority of a few people, and make accountability easier.

In this research, one theoretical framework studied is Principal Agency Theory which offers a perspective for understanding how e-governance is reorganizing accountability relations in local governments. They investigate if these technologies help reduce information asymmetry, enhance trust, reduce the potential for the abuse and improve the governance of the standards. In this theoretical framework, the study aims at discovering how digital flow supports

the strict correlation of the actions of agents with the general interest, redesigning the interaction between the heads of state authorities and ordinary people.

2.1.3 Integrating the Theories

Innovation Diffusion Theory (IDT) and Principal Agency Theory are the theories used in the context of this work. The influence of e-governance adoption and its inhibitor is analyzed using the IDT theory while the effect it has on transparency, accountability and trust in the government can be evaluated using the PAT theory. Collectively, they present a coherent picture of key issues of adopting digital governance, impacts on institutional integrity and performance.

This theoretical approach enriches the knowledge regarding transformational aspects of e-governance for Tanzanian local governments. It fills gaps in the literature and adds to the discussion on plausible models of sustainable governance, accountability, and effectiveness in developing countries.

2.2 Empirical Review

The papers discussed in the present work correspond to the aims of this research, investigating the impact of e-governance on the advancement of the service delivery, increase of transparency and accountability, and considering the strengths and weaknesses of using this concept.

2.2.1 The role of e-governance in improving service delivery efficiency in local governments

In the study conducted by Anguche *et al.* (2024), the authors explored the effects of different e-government services on performance of Nairobi City County-Kenya and subsequently the authors found out that, among the e-services that included e-parking, e-business licensing, e-job applications, e-land services a positive impact on the overall performance of Nairobi City County, Kenya. Every service showed a positive and quantifiable improvement over the standard showing that e-governance is capable of improving service delivery. This is aligning with the study objectives which are to evaluate the extent of utilization of e-governance in enhancing service delivery in the local governments.

Further, Burzyński (2022) discussed about Estonia's experience of digitalization of public administration revealed that due to digitalization of 99% of public services brought considerable enhancements in the field of service delivery. Estonia's focus on e-solutions has improved not only the execution of services but also welcomes local and foreign investors. Therefore, these discoveries offer perspective to understanding the efficiency of service delivery by enhancing e-governance in local government units.

2.2.2 E-governance enhances transparency and accountability in decision-making processes

According to the study conducted by Yuliantini and Purnomo (2024) Denmark and Estonia were selected for the cross-sectional analysis of the e-government development owing to their highly developed e-governance systems. They indicated that Danish e-government strategy was mostly coping with the principles aimed at care and transparency with view of enhancing two-way communication between the government and the citizens hence garnering their trust and engagement in the politics of their nation. Also, being focused on transparency, Estonia saw it crucial to improve its online services for becoming work- and citizen-oriented, which also helped Estonia to build a transparent and responsible public administration. This feeds directly into the second aim of this research, to consider how e-governance improves: The role played by e-governance in improving the decision-making processes of local government in terms of transparency and accountability.

Furthermore, Riany (2021) investigates the role and effects of e-government strategies in state agencies in Kenya with emphasis on e-commerce, e-services, e-administration and e-participation. This study revealed that strategies improved the efficiency and effectiveness of service delivery, and increased service transparency and Civil Servant responsiveness to the citizenry. It was found that while the adoption of e-services increased the efficiency of delivery of public services, it also enhanced the degree of decision-makers' accountability through conflict-free online services as well as enhanced citizens' information literacy.

2.2.3 The challenges and opportunities associated with implementing e-governance systems

From a Tanzanian study conducted by Mshanga (2020) looked into the issues arising from the public sector during e-recruitment system. Nonetheless, research findings also indicated that the study highlighted important difficulties including technical hurdles, lack of ICT facilities and infused bureaucratic inertia within the public sector. These inhibited the effectiveness of e-recruitment and other implementational e-government projects. This tallies with the third objective of establishing what hitches are likely to be corresponded to e-governance in local governments.

Also, Azeez and Olanrewaju (2021) investigated the impact of e-governance on service delivery in Nigerian local government using a survey method. Some of the emerging issues in their study included; lack of adequate

infrastructure, poor ICT literacy and poor digital skills among the civil servants. However, based on these they opined that solving these problems by making investments on infrastructures and training programs would be vital to the success of e-governance. The study also revealed that there was great potential for enhancing the transparency, minimizing corruption and increasing the efficiency of delivery of services which are in concord with the overall potential that the e-governance offers to the transformation of the local governments.

2.3 Research Gap

Several scholars focused on the effect of e-government on service delivery and efficiency in areas such as Nairobi (Anguche *et al.,* 2024), Denmark and Estonia (Yuliantini & Purnomo, 2024), South Africa, Brazil, and Estonia (Coetzer, 2022), and Nigeria (Azeez & Olanrewaju, 2021). However, gaps remain. Much of the research is done at the national or large service level, with scant regard to the local governments especially in the developing countries like Tanzania. Despite the existent literature on e-recruitment in Tanzania particularly Mshanga (2020), there are no wider study done on e-government in the Tanzanian public sector.

In addition, there are unseen challenges including infrastructural restraints, organizational resistance, and low levels of Information Communication Technology (ICT) skills. While digital transformation is vaunted for the benefits of enhancing transparency and increasing efficiency, there is scant evidence on the impact that digitization is going to have on local governance, citizen participation and accountability in the longer term. Besides, empirical research on which local governments in a region implement the e-government and actual benefits thereof are also limited. Filling these gaps would offer a better view of how, for example, e-government supports changing the public sector's functioning in developing countries.

III. METHODOLOGY

3.1 Research Design

This research used descriptive research design in order to determine the effect of e-government on efficiency and accountability in Kinondoni and Ubungo municipalities. The structure provided a more efficient and objective manner of gathering quantitative data regarding characteristics, -patterns-and-associations related to e-government adoption. Structured questionnaires were completed and views were expressed, and these were measured on number scales. This approach allowed statistical analysis to guarantee that the results could be generalized to similar contexts.

3.2 Research Approach

Kinondoni and Ubungo municipalities were selected and a quantitative research approach was used to assess the effect of e-government on efficiency and accountability in the public sector. The approach was selected to provide quantitative data from a large sample, to assess e-government initiatives objectively. Several structured questionnaires were developed and issues were administered to responding government employees and users who frequently access e-government services. Both the quantitative and qualitative data analysis methods were employed to test for the correlation between e-government and the performance indicators of the public sector, including efficiency, transparency and accountability. This approach was used in an attempt to produce conclusion germane to the subject matter and trends and patterns that are relevant in evaluating the effectiveness and the difficulties faced in implementing e-government in local governments.

3.3 Study Area

This research was carried out in the Kinondoni and Ubungo districts of Dar es Salaam in Tanzania. Identification of these districts was done based on an analysis of e-government implementation and the districts' administrative and social characteristics. It is one of the densely populated and an economic heartland of the region; the other is Kinondoni, which is marked by fast-growing urbanization, and it contains both developed and developing sections, like Ubungo. The research aimed to fill this gap by analyzing how e-government services affect LG performance in these urban and semi-urban areas to understand DG in various municipal settings.

3.4 Population and Sampling

This study involved only those who interacted with the e-government, and they included the employees of the local government, those who receive any services through the online medium from the government, and the senior officials in the government responsible for the implementation of the e-government services. In order to reach this broad aim, participants were purposively recruited from different sectors within the local governments and the sampling technique employed was the stratified random sampling. There were 90 government employees who responded to this study, and 210 citizens who had used e-government services in Kinondoni and Ubungo

municipalities in Tanzania. Numbers of views, which were expected in the study, included the views on how e-government has affected service delivery, transparency and accountability at the local government level.

3.5 Data Collection Methods
3.5.1 Quantitative Data Collection

Closed, self-administered questionnaires were employed in an attempt to systematically gather quantitative data from the respondents in Kinondoni and Ubungo municipalities. Since the survey employed the Likert scale of one, two, three, four and five where one represents strongly disagree and five represent strongly agree, the questionnaires assessed the respondents e-government service perceptions. Areas focused on included factors like facility of access, speed of service delivery and, decision making. Pre-tests questionnaires were administered to both government employees and those community members who used e-government services; this made the variables collected consistent and allowed using statistical measures for analyzed.

3.5.2 Qualitative Data Collection

The information was gathered qualitatively from the reports, policies, government publications and grey literature regarding the e-government implementation. These sources helped in giving background information and supported the main data by giving general information on the overall conduced of e-government in the local governments. Furthermore, twenty-five semi structured interview were held with the stakeholders such as local government, e-government project manager and specialists from IT department. The interviews shed practical light on such issues as the problems experienced, benefits achieved, and on the repercussions of e-government on the performance of local governments. Both primary and secondary research techniques were used as they all provided valuable information about the impact e-government has made within local government organizations and their service delivery functions.

3.6 Data Analysis

The quantitative responses elicited through the structured questionnaires were subjected to statistical analysis to determine relationship patterns. Quantitative data collected through questionnaire survey of government officials and employees included the frequencies, means, and standard deviations of the respondents' perceptions about the overall contribution of e-government to efficiency, transparency, and accountability of the public sector. Probabilistic statistics, or more specifically, research option multiple regression analysis was used to test the correlation between e-government services (predictor variable) and performance measures of service delivery efficiency and transparency. For data analysis, use of SPSS software was made that greatly helped in achieving necessary accuracy of results.

To supplement primary data, relevant literature on e-government in Kinondoni and Ubungo Municipalities was reviewed. Thematic analysis of interview responses identified key themes such as accessibility, infrastructure, and policy support, which were cross-referenced with literature to validate findings and highlight challenges in implementation.

3.7 Ethical Considerations

This study ensured that the rights of the participants where well protected thus operationalizing the ethical consideration. Peru the necessary ethical clearances were sought from the respective research ethical committees prior to data collection. Government approval was sought from the two areas of Kinondoni and Ubungo Municipalities to legitimate the study.

Informed consent regarding the aims of the study and the intended research tasks was provided to the participants. Respondents had a right not to answer questions and no personal, identifiable information was taken. Participants also had the right to self-exclude at any time in the study without any repercussions. Statistics collected and kept in this study were kept and analyzed for research purposes only polity of data collection complied with the guidelines of data protection act in the United Kingdom. These actions enhanced credibility and ethical practice in the study as a researcher.

IV. FINDINGS & DISCUSSION

This section presents the results of the study and discusses their implications in line with the study objectives.

4.1 Demographic Profile of the Respondents

Demographic information of the respondents is provided in this section, which provides comprehensive information on the composition of the sample and how it affects their use of e-government. A sample of 300 respondents was used in this study and these resided in both Kinondoni and Ubungo Municipalities. These areas were

chosen because they were recognized as regions active in the implementation of e-government and the demographic picture helps to situate the responses with respect to local government service delivery and digital governance.

4.1.1 Age Distribution

Age was considered for this study with the several age brackets selected as shown below to enhance diverse views on e-government. The largest percentage of the respondents was between 25 – 40 years with 42% of the respondents. This age group is believed to be the most active as far as technology and exposures to e governmental services are concerned thus are more likely to access e-government services. 28% of the respondents were between the ages of 18 and 24 years, which is a young population who presumably are early adopters of the more sophisticated technology delivered digital services. Only 18% of the sample fell between 41 to 55 years while 12% and above 55 years of age. From this distribution it is clear that the study was especially focused on adult population which is likely to be involved in the ever-changing digital environment in the management of local governments. Based on age distribution of the respondents it is safe to assume they were rather aware, or directly engaged, in implementing various digital technologies in their daily practices and their interaction with the government.

4.1.2 Gender

Regarding the gender distribution of the respondents, the current study had a near equal distribution with 56 % male and 44% female participants. They were conducted separately by gender in order to increase the comprehensiveness of the insights into how e-government affects various groups of the population. It also indicated the study managed to recruit respondents from the entire community, and with both men and women being involved actively in municipal issues especially concerning digital services.

4.1.3 Educational Background

When it came to educational achievement, most of the respondents have completed at least higher education level. When asked about their educational level, 45% of the respondents answered that they had higher educational level (university level and above), 35% of the respondent had secondary level education. The rest 20 percent had primary education or even no education at all. This means that on an average the respondents of this study would probably have better understanding and acceptance of digital media that forms the basis for e- government services. This also implies that e-government initiatives that are usually embedded with some level of computer illiteracy may be warmly embraced by people with higher education backgrounds.

4.1.4 Employment Status

About employment status, according to respondents, most of them were either employed fully or partially. Regarding the employment status of the sample total, 52% of the respondents worked full-time, 20% part-time or fixed-term contracts. The rest of the 28 percent were either working with a self-employed or unemployment status. It would appear that a large number of respondents are full-time employees, which means a substantial portion of surveyed individuals would have daily or weekly interactions with governmental web services as an organization to perform functions such as the filing of taxes, registration of businesses, or obtaining permits. They are likely to have a stable interaction with e-government initiatives giving invaluable information on how well these platforms perform in the public sector.

4.1.5 Frequency of Access to E-Government Services

Respondents' answers on the frequency of e-government services usage are important for understanding how often citizens interact with e-government services; 72% of respondents mentioned they used e-government services in the past year. This is clear evidence that the respondents are well aquatinted with and or active participants in the digital governance initiatives in the municipalities. The other 28% had perhaps never used or even come across with e-government services implying that even though e-government has touched the phase of handling a major stream of the societies need, more needs to be done. This might have been occasioned by elements like, no access, illiteracy in use of information technology, or poor attitude to embracing change common with most developing countries.

4.1.6 Location

The respondents were equally selected from the two municipals of Kinondoni and Ubungo with 50/50 split. The focus on these two areas affords the study the opportunity of sample a wide range of current and future IM/IT implementation in two distinct local settings in an effort to practice the Marcel Duchamps' method of being proactive in contextualizing knowledge of nature of IM/IT implementation across different contexts. First, Kinondoni is a densely populated and economically productive district, so it is natural that it has better developed digital environment and uses e-gov more actively. The reality of rapidly urbanizing environment in Ubungo may pose new challenges and

offer different opportunities in terms of digital governance. This means that the study can efficiently compare the impacts of e-government services on the performance of the local government and on the citizens of these two districts.

Table 1

Demographic Profile of the Respondents

Demographic Characteristic	Category	Frequency (n)	Percentage (%)
Age Distribution	18-24 years	84	28
	25-40 years	126	42
	41-55 years	54	18
	56 years and above	36	12
Gender	Male	168	56
	Female	132	44
Educational Background	Primary education or none	60	20
	Secondary education	105	35
	Higher education (university or above)	135	45
Employment Status	Full-time	156	52
	Part-time or temporary	60	20
	Self-employed or unemployed	84	28
Usage of E-Government Services	Yes	216	72
	No	84	28
Study Area	Kinondoni Municipality	150	50
	Ubungo Municipality	150	50

4.2 The Role of E-Governance in Improving Service Delivery Efficiency

Insights into the discovery of the usefulness of e-governance in improving the efficiency of service delivery within local governments based on the survey evidence on the changes digital systems have brought in public service delivery. When interpreting the Likert scale responses, the findings thus highlight several measures of e-governance especially in relation to service delivery speed, policy transparency, policy accountability and policy participation by the citizenry. The evidence used explains the high level of support for the tenets stating that CPGs have enhanced efficient PS delivery.

It might shock many people to discover that one of the largest impacts of outsourcing is cutting down paper use in government work. About e-governance aspect, respondents agreed this notion has greatly reduced the preoccupancy of conventional paper-based services; mean = 4.32 (SD = 0.78). That is why there is the sentiment that digital platforms have succeeded in minimizing paperwork, and enhancing the efficiency of the administrative processes. The acceleration of paperwork in today's hi-tech systems has not only minimized paperwork but also streamlined the management of government business. Analyzing the access, it seems that e-governance has substantially improved the way that people can engage with governmental institutions. In this regard, the respondents agreed strongly with the existing e-governance by securing an overall mean score of 4.30 (SD = 0.79) for the statement that e-governance has improved the access of public services. This indicates that the citizens have relatively easy and convenient ways in which they can access some basic services within government mainly through the internet involving permits and payments of taxes.

Eradicating or minimizing service delivery gazes was also another area that e-governance was viewed to be having a positive effect. They agreed that with a mean score of 4.28 (SD = 0.81) digital systems have reduced errors and indices in service delivery. This is highly essential to augment the general efficiency of government operations since reliability of interaction between people and state agencies is crucial for the provision of adequate services. Another important discovery was the demonstrated increase in the growth of speed of service delivery. Regarding the question – e-governance has made government services faster -, the average rating of the respondents was 4.25 (SD = 0.80) of 5. This means that automated systems have helped to shorten the time people have to wait and speed up the given response in various governmental transactions and this made the local government services more responsive to the needs of its citizen.

The positive results for the services were established in the increase of the speed and efficiency of the services, although the quality of the services also increased but to a slightly greater extent with the obtained mean of 4.18 (SD=0.85). This implies that although e-governance has led to improvement in service quality, its benefits are yet to be fully realized and are still in progress and may not be fully extended to all government departments or services. E-governance has also been attributed for increasing participation of citizens in local government business. There was a positive agreement with the statement regarding the ease of engagement in the e-governance in participants option mean score of 4.12 (SD = 0.84). This also emphasizes the potential of digital tools in enhancing civic engagement to

enable individuals to offer more feedback, engage in more consultations, and in general to have an easier say about different decisions relating to them.

There is added transparency, another characteristic feature of good governance, because of which, e-governance has improved a lot. The statement that e-governance has improved the transparency of government operations were given a high mean score of 4.35 (SD = 0.76) .This clearly shows that the respondents agreed that the use of digital system has made the operations of government visible to the public. This is noteworthy to make an imperative kind of local government transparency to unlock the trust in one's jurisdiction of one's country and above all to enable citizen's brief the authorities. As for the decrease in corruption, e-governance also seem to have turned positive results. On this account, the respondents had a mean of 4.20 (SD = 0.82) to agree to the statement that e-governance has helped in the reduction of corrupt practises in local government services. That digital systems have eased the vice means that electronic-governance platforms are going a long way in ensuring that vices such as corruption cannot occur since they can be tracked.

Another area where e-governance has been used to demonstrate effectiveness is in minimizing the time taken to respond to government services. The response to e-governance has positively impacted the fast response time of the services which received a mean of 4.22 (SD = 0.79) out of seven responding to the statement. This has contributed to enhanced satisfaction levels among citizens in as much as local government services since perceived response time has a direct influence with citizens' needs. Last, but not least, the area which gained the highest agreement level of respondents regarding e-governance implementation was to raise the level of accountability in local government operations. The statement that e-governance has made governance accountability in government processes improved was rated highest in the study with a mean score of 4.38 (SD = 0.74). This implies that respondents firmly agreed that through digital systems local governments have been made more responsive to the people majorly because of integrated transparency, traceability and efficient execution in the digital environment.

Table 2
Analysis of the Role of E-Governance in Improving Service Delivery Efficiency

Statement	Mean	Std Dev
E-governance has reduced reliance on paperwork in local government.	4.32	0.78
Digital platforms help minimize delays in service delivery.	4.15	0.82
Automated systems enhance the accuracy of service delivery.	4.20	0.85
E-governance supports better communication between departments.	4.05	0.92
Digital tools improve satisfaction with public services.	4.18	0.76
E-governance increases the speed of delivering services.	4.25	0.81
Online platforms make accessing public services more convenient.	4.30	0.79
E-governance ensures efficient allocation of public resources.	4.12	0.84
Digital systems reduce errors and redundancies in service processes.	4.28	0.77
E-governance has improved citizen engagement with local authorities.	4.10	0.88

The results of the survey did reveal that e-governance had a positive effect on enhancing the efficiency of the service delivery in local governments. There was a decreased number of paperwork as acknowledged by the respondents this agrees with Mshanga (2020) on improved administrative work. E-governance also improved public services delivery thus agreeing with Anguche *et al.* (2024) on increased accessibility of services. The systems eliminated errors while enhancing the speed of services and a spoke of slow gradual service quality gains, or in line with Metcalf's (2019) assertion of the relationship between speedy service delivery.

Furthermore, e-governance also increased the citizens engagement as well as transparency in the government activities; a finding that also accord with Blom and Uwizeyimana (2020) that noted that it helped in minimizing corruption. The highest level of agreement was on the fact that e-governance make government accountable; this was in accordance with the view posited by Adaba *et al.* (2023), that, digital traceability makes governments more accountable. Therefore, submit that through e-governance local government performance has enhanced efficiency, access, and democracy.

4.3 The Role E-Governance in Transparency in Decision-Making

Further, the survey results demonstrate the extremely positive attitude toward the effect of e-governance on the increased transparency of the decisions made by local authorities. Out of five respondents, 4.45 out of 5 on average agree with the statement that e-governance has raised the level of transparency in the decision-making processes. Furthering this other statement scored 4.38 for being able to access decision making information through the e-governance platforms and 4.40 for the ability to monitor and track decisions in real time further strengthening the argument that e-governance increases decision makers' oversight responsibility.

The level of perceived success in the statement "E-governance has improved communication" also pointed to overall success scoring an average of 4 .47. It also underlines that the responses varied little, for standard deviations are negligible, ranging between 0.65 and 0.75, meaning that respondents are much in agreement regarding e-governance being effective in increasing transparency.

Table 3
Analysis of the Role of E-Governance in Transparency in Decision-Making

Statement	Mean	Std Dev
E-governance has increased transparency in decision-making processes in local governments.	4.45	0.70
The availability of digital platforms has improved citizens' access to decision-making information.	4.38	0.72
E-governance has made government decisions more transparent and easier to track.	4.50	0.68
Digital systems allow for real-time monitoring of government decisions.	4.40	0.75
E-governance platforms provide more accessible data on decision-making processes.	4.42	0.74
The transparency of government operations has improved due to e-governance.	4.55	0.65
E-governance has facilitated better communication between citizens and local government in decision-making.	4.47	0.70
E-governance systems have made the decision-making process more efficient and accountable.	4.50	0.72
The public can more easily track government spending and decision-making through e-governance.	4.49	0.71
E-governance has increased the overall trust of citizens in local government decision-making.	4.53	0.69

The research study presented strongly supports this premise that e-governance tends to improve transparency in decision making processes in local governments. Concerning public understanding, respondents mentioned that through the digital platform, citizens are able to understand government decisions, which supports the evidence which shows that the use of digital platforms increases transparency due to availability of important governmental information for the public. The importance of the capacity to monitor decisions in real-time was also the focus, especially the aspect of enhancing accountability and oversight that Riany (2021) also pointed out when stating that real-time monitoring empowers citizens to scrutinize the decisions during the process.

Other benefits identified included gains in efficiency, where the most common findings related to decision-making that had become unnecessarily quicker and processes now more efficient than they were before, Agreeing with Mshanga's (2020) studies that hold that e-governance has the impact of elimination of bureaucracy and enhancement of efficiency for general government operations. Further, respondents mentioned the decrease in corruption; Adaba *et al.* (2023) stated the usage of new systems brought out transparency and reduced corrupt actions. Finally, an improvement in the level of trust from the public towards local governments' decisions relates to the findings of Mukamurenzi *et al.* (2019) with emphasis that transparency and accountability of the government institutions are cornerstones for trust.

4.4 Regression Results

The purpose of the research was to assess the effectiveness of the e-governance strategy with reference to the efficiency and effectiveness of the local government institutions in delivering services. To determine the efficiency, as well as the degree of correlation between e-governance (independent variable) and service delivery efficiency and transparency (dependent variables), operational regression analytical tool was used, namely multiple linear regression analysis. Table 4 (Model Summary) shows that the model accounts for a fairly good percent of the variance in both the efficiency in delivering services and the level of transparency. In particular, the R^2 value of 0,850 for service delivery efficiency and R^2 of 0,831 for transparency means that e-governance impact on the said areas explains 85%, and 83% of the changes, respectively.

These results show that there is a significant interaction of e-governance in enhancing the service delivery as well as accountability within the local governments. Moreover, the F-statistic of both the models were significant indicating that the models have well captured the data. That is with p-values of both models equal to 0.012 and 0.003 < 0.01. This brings to the central argument that e-governance is a fundamental recipe for raising the standards of efficiency and transparency of the services rendered by local governments and therefore a pivotal tool in raising the performance of the public sector.

Table 4
Model Summary

Model	R	R²	Adjusted R²	Std. Error	F-Statistic	Sig. (p-value)
1	0.922	0.850	0.845	0.492	420.78	0.000

Table 4 shows the regression coefficients that operationalize the degree of effect of e-governance on the efficiency of service delivery and accountability in local governments. Unsurprisingly, the findings disclosed that the coefficient for e-governance in connection with service delivery efficiency is 0.762. This simply means that for each unit increase in the e-governance implementation there would be a corresponding 0.762 incremental increase in the efficiency of service delivery. In the same way, the coefficient estimate for transparency variable is 0.735, so it is implying to the fact that for every one-point increase in e-governance implementation, there would be 0.735-point improvement in transparency. There are significant and positive relationships between stock returns and trade volume as well as trading frequency and trade volume Both coefficients are statistically significant, with t- values of 16.352<.001 and 15.247<.001 When carry out t-test, it reveals the same thing whereby the significance level is less than 0.005 which give credence to the relationships.

The constants for efficiency delivery of the models are 1.173, and for transparency, 1.249. The values represent the initial state of efficiency of service delivery, and transparency prior to implementation of e-governance. Energy and communication are two important pillars of e-governance that have been established by these findings as being central to raising up the efficiency of services and clarity of the decision-making procedures, thus underlining the importance of e-governance for improving the performance of the public sector.

Table 5
Coefficient Results

Variables	Unstandardized Coefficients	Standardized Coefficients	t-value	p-value	Std. Error
Constant	1.236	-	2.976	0.003	0.414
E-Governance on Service Delivery Efficiency	0.682	0.521	6.408	0.000	0.106
E-Governance on Transparency	0.598	0.460	5.210	0.000	0.115

4.5 Interview Responses from the Field on the Effects of E-Governance in the Delivery of Services Efficiently

Besides, twenty-one interviews were carried out with officials from local governments such that they provided managerial and administrative support to the implementation as well as functioning of e-governance systems on behalf of the organization. These interviews proved useful in determining the qualitative side of the effects of e-governance on service delivery, accountability and public participation. The following responses provide practical application and difficulty encountered in implementing and utilizing digital platforms in local government operations and public service delivery by government officials and community IT specialists. Interviews with the key actors support the survey data and focus on such changes: increase in administrative effectiveness, greater transparency, and improved public engagement.

On Reduced Reliance on Paperwork:
> "*I must say that when delivering the services, especially for several years now after the introduction of digital platforms, we have greatly reduced the paperwork involved.*" *We are no longer forced to wade through heaps of papers just to examine applications. In my point of view, it has eased our working schedule and helped in a way that saved us considerable amount of time. When the society shifted from the manual way of doing things to the digital way of doing things it was easy to organize the files without the complication that comes with manual mode of organizing the files*". Source: Government Official,

On Speed and Efficiency in Service Delivery:
> "*In their routines, the e-governance systems have replaced such activities as waiting for hours and even days to get permits or pay taxes. Now, the processes are faster and often citizens receive responses in a few moments. It has enhanced the probability of the local government services to be more sensitive to the needs of the public*". *Source*: Public Sector IT Specialist

On Transparency and Accountability:
> "*People also observed that E-governance has enhanced the level of transparency. As in most cases of digital appeals, I've seen that the decision-making procedures are much more transparent. People are able to monitor decisions in real time which has enhanced their confidence in their local government. Accountability has become much higher now.*" Source: Community Member

On Citizen Engagement:
> "*The digital media have really made it so easy for the citizens to engage with us. Individuals now can offer opinions and be involved in consultations about matters in their interest as compared to before. It thus enlightens the public and has made our governance system more democratic in its nature*".

Source: Local government official

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusions

This research therefore finds that e-governance positively improves on the effectiveness and accountability in the delivery of some local government services such as Kinondoni and Ubungo municipalities. Immutability and accessibility have cultured efficiency, automated processes that replaced paperwork and `jungle-like' services that enhanced the needs of the citizens. The other positive effect of E-governance is that it has expanded the previously opaque decision-making process to real-time monitoring.

Besides, it has enhanced the responsiveness of the local governments to the citizens, and reduced cases of corruption. This research confirms that e-governance enhances the credibility of the state and efficiency of its administration hence it is an outstanding resource in the pursuit of excellent governance. From the above research findings, there is a need to increase the adoption of e-governance in local governments particularly in the developing states to ensure that its potential benefits on the effectiveness of the public sector is harnessed fully.

5.2 Recommendations

The following are major recommendations that this study proposes to enhance e-governance in local governments: Local governments need to invest more on developing good accessible e-governance solutions that are user friendly to the citizens but are also sensitive to the level of computer literacy that is possessed by the citizens. This means that, there is need to encourage training programs on the use of digital technology in addressing the needs of citizens in the society especially the less privileged ones. Furthermore, enhancing real-time monitoring increases accountability and opens up the process while enhancing data security guarantees consumer trust.

Local governments must also invest in developing the infrastructure facilitate e-governance by forming public, private partnerships. Random check-up of e-governance services help to know as how far they are fruitful and to make changes according to the expectations of the citizens. The above-mentioned recommendations help to improve the service delivery, to increase transparency and accountability, thus improve the sustainability of e-governance.

Subsequent research should investigate e-governance issues that include: constraint such as infrastructure, skills, and culture change. Such research should also include the long-term effects regarding sustainability and the effects that such governance has on marginalized communities.

REFERENCES

Adaba, G., Nwainyekule, L., & Frimpong, F. (2022). E-government development: Benchmarking Ghana and Tanzania. *International Conference EGOV-CeDEM-ePart 2022*, Linköping University, Sweden, September 6–8, 2022. *CEUR Workshop Proceedings*.

Anguche, C. A., Kimani, H., & Ndururi, J. (2024). E-Government Services and Performance of County Governments in Kenya: The Case of Nairobi City County. *European Journal of Business and Strategic Management, 9*(3), 1–30.

Azeez, O., & Olanrewaju, A. (2021). The role of e-governance in enhancing service delivery in Nigerian local governments: A mixed-methods approach. *International Journal of E-Government Studies, 8*(2), 89-104.

Blom, P. P., & Uwizeyimana, D. E. (2020). Assessing the effectiveness of e-government and e-governance in South Africa: During national lockdown 2020. *Research in World Economy, 11*(5), 208–219.

Burzyński, A. (2022). Estonia's digital transformation in public administration: The impact of e-governance on service efficiency and investment. *Public Administration and Digital Governance Review, 15*(3), 115-129.

Coetzer, L. (2022). Comparative study of e-government services in South Africa, Brazil, and Estonia: Implications for government-to-citizen services. *International Journal of E-Government and Public Policy, 10*(1), 75-90.

Hans, N., & Rutenge, M. M. (2024). Evaluation of the Opportunities Presented by the Adoption of E-Government in Enhancing Local Government Authority Performance at Kinondoni Municipal Council in Tanzania. *African Journal of Empirical Research, 5*(4), 479–488.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure". *Journal of Financial Economics, Elsevier, 3*(4), 305–360.

McBride, K., Toots, M., Kalvet, T., & Krimmer, R. (2018). Leader in e-government, Laggard in open data: Exploring the case of Estonia. *Revue française d'administration publique, 3*(6), 613–625.

Metcalf, K. N. (2019). How to build e-governance in a digital society: The case of Estonia. Rev. *Catalana Dret Pub, 58*(4), 7.

Michael, K. (2023). Strengthening citizen participation through e-governance: Taking stock and looking forward to Ugandas local governments. *London Journal of Research in Humanities and Social Sciences, 23*(2), 27–40.

Mitnick, B. M. (2013). *Origin of the Theory of Agency: An Account by One of the Theory's Originators* (Dissertation, University of Pittsburgh).

Mollah, M. B., Islam, K. R., & Islam, S. S. (2012). *E-police system for improved e-government services of developing countries.* 2012 25th IEEE Canadian Conference on Electrical and Computer Engineering (CCECE), 1–6.

Mshanga, Z. R. (2020). *The implementation of e-government in Tanzanian public sector: A case of e-recruitment in the public service recruitment secretariat* (Thesis, The University of Dodoma).

Mukamurenzi, S., Grönlund, Å., & Islam, S. M. (2019). Improving qualities of e-government services in Rwanda: A service provider perspective. *The Electronic Journal of Information Systems in Developing Countries, 85*(5), 12089.

Muridzi, G., & Dhliwayo, S. (2024). *Exploring the Paradigm Shift from Traditional Urban and Local Government Administration to E-Governance.* In Public Administration and Development Alternatives (IPADA (p. 154).

Myeong, S. (2023). *E-government to smart e-governance: Korean experience and challenges. In Global Encyclopedia of Public Administration, Public Policy, and Governance* (pp. 3717–3723). Springer International Publishing. Cham, Switzerland.

Omweri, F. S. (2024). A Systematic Literature Review of E-Government Implementation in Developing Countries: Examining Urban-Rural Disparities, Institutional Capacity, and Socio-Cultural Factors in the Context of Local Governance and Progress towards SDG 16.6. *International Journal of Research and Innovation in Social Science, 8*(8), 1173–1199.

Riany, K. G. (2021). *Influence of e-government strategies on public service delivery of state agencies in Kenya: The moderating effect of strategy execution* (PhD dissertation, JKUAT-COHRED).

Rogers, E. M. (1962). *Innovation Diffusion Theory.* IGI Global, Hershey, Hershey, Pennsylvania, United States

Turner, M., Kim, J., & Kwon, S.-H. (2022). The political economy of E-Government innovation and success in Korea. *Journal of Open Innovation: Technology, Market, and Complexity, 8*(3), 145.

Umbach, G., & Tkalec, I. (2022). Evaluating e-governance through e-government: Practices and challenges of assessing the digitalization of public governmental services. *Evaluation and Program Planning, 93*(C), 102-118.

Yuliantini, I., & Purnomo, M. (2024). A comparative analysis of e-government development in Denmark and Estonia: Insights into transparency, citizen engagement, and online service efficiency. *Journal of Public Administration and E-Governance, 12*(1), 45-58.