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Original Article

Successes and Challenges of Digital Systems Usage in Local Government Service Delivery in Tanzania: A Systematic Review

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Abstract

Digital systems usage in local government service delivery is a global mechanism for improving service delivery. Even in Africa, African countries are continuing to adopt digital systems to solve their challenges in the provision of services to citizens. In Tanzania movements of using and adopting digital systems in local government service delivery are ongoing and have resulted in positive results despite several challenges. This review aimed to find the successes and challenges of digital systems usage in local government service delivery in Tanzania. This review adopted the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to include and exclude articles for review. The papers retrieved were 150, but only 15 articles met the set criteria for inclusion in this review. Also, this study was informed by the Technology Acceptance Model. The results show that digital systems have revealed several successes, such as improvement of revenue collection efficiency, improvement of citizen satisfaction in service delivery, reduced corruption opportunities, and reduced delays in service delivery. However, usage of digital systems in local government service delivery has got to have various challenges, including poor infrastructure, lack of funds for digital systems sustainability, lack of adequate ICT knowledge for staff, and poor data quality. The study concludes that for digital systems to realize their full benefits in service delivery and attain Vision 2050, the pressing challenges should be mitigated. The study recommends that digital skills, funds for system sustainability, standardized data entry protocols, and regular data audits in the systems should be taken into account.

Keywords

Digital Systems, Digital Systems Usage in Local Government Service Delivery, Success of Digital Systems Usage in Local Government Service Delivery, Challenges of Digital Systems Usage in Local Government Service Delivery, Tanzania.

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1. Introduction

Globally, digital systems have become one of the government mechanisms for improving local government service delivery. Global statistics show that 60% of local governments are using digital systems to deliver services (Granicus, 2024). Nowadays, digital systems in municipalities and district authorities serve as the fastest mechanism of service provision (UN DESA, 2022; OECD, 2023). This transformation is due to the growing demand to bring government services very closer to citizens, reduce bureaucratic delays, reduce administrative costs, and enhance citizen-centered local services (like civil registration, local taxation, waste management, community health, and issuance of permits) (World Bank, 2023; OECD, 2023). Usage of digital systems has helped many local authorities reduce processing time, strengthen accountability, and expand access to services through electronic (e)-municipality portals, mobile reporting applications, digital payment systems, and integrated local databases (UN Habitat, 2022; WHO, 2021). Also, research shows that countries that have embraced digital systems in government activities have experienced faster service delivery, reduced corruption, and improved citizen satisfaction (Heeks, 2020; Dunleavy et al., 2021).

Despite these achievements, several challenges still compromise the promise of digital systems in local government service delivery across countries. Local governments continue to face limited financial resources for digital infrastructures, weak ICT skills among frontline staff, fragmented information systems, and weak data-governance frameworks that hinder system compatibility with central government platforms (OECD, 2023; UN DESA, 2022). Evidence also shows that there is persistence of digital divides, especially between urban and rural

local authorities, something that limits equal access to digital services for marginalized communities (World Bank, 2023). Furthermore, cybersecurity risks and privacy concerns have been increasing at the sub-national level as local governments adopt more digital platforms without adequate protection mechanisms (UNDP, 2021). These global trends inform the need for strong institutional capacity, inclusive system design, and long-term investment to enable local authorities to fully benefit from digital transformation.

In Africa, local governments are continuing to turn to digital systems as a mechanism to mitigate the facing challenges such as inefficiency, corruption, lack of accountability, weak institutional capacity in service delivery, and bureaucratic delays (Atlantic Council, 2024; Jieutsa, Gbaguidi, Nadifi, & Koseki, 2024). Again, digital transformation in African countries is viewed as one of the ways for reducing governance gaps and ensuring responsive administrations, transparency, and participatory development through platforms such as e-payment systems, biometric identification, and online citizen service platforms (Waema & Adera, 2011; United Nations, 2024). Digital systems are not something new in practice in many African countries. They mean technology-based systems that use digital tools (like computers, software, the internet, mobile apps, and databases) to process, store, share, and manage information or services electronically rather than manually or on paper. Since the 1990s, many African countries have adopted digital systems through public sector reforms and governance modernization policies. However, integration of digital systems in local government service delivery was officially introduced in the 2010s (Loffer, 2025).

A decade has passed since the introduction of e-government and digital systems in local government service delivery in African countries. Every African country has been implementing various initiatives to integrate digital systems in local government service delivery. Some African countries have been developing policies, laws, and regulations, while others have sought financial assistance from international organizations to promote ICT usage. On the other hand, some African countries have borrowed funds from international financial institutions to implement digital reforms (Atlantic Council, 2024). Usage of digital systems in local government has presented various outcomes, including improved accountability, inclusive participation, improved revenue collection, responsive authority, reduced bureaucratic delays, and people satisfaction (United Nations, 2024; Jieutsa et al., 2024). Despite these successes, many challenges are still conflicting with the full realization of digital systems in local government service delivery (Mangwanya, 2024). Among the most pressing challenges in Africa's local governments in implementing digital systems for service delivery include limited infrastructure, poor digital compatibility of systems, reliance on donor-driven projects, restricted local government capacity, and continuation of centralized control over digital initiatives, something which undermines the sustainability and inclusiveness of digital transformation in local government authorities (World Bank, 2025).

In Tanzania, digitalizing local government service delivery is accepted. This is revealed by the decision of the government to put in place various strategies, such as policies, laws, and guidelines that promote the integration of digital systems in local government service delivery. For example, the government introduced the National ICT Policy of 2016 that emphasized the integration of ICT in governance and service delivery and the Digital Economy Strategic Framework (2021) that outlined the country's vision for a digital future, including strengthening ICT use in local government authorities (ICT Commission, 2021). Again, the government introduced the Tanzania e-Government Strategy 2022-2027 that provides a roadmap for digital transformation in public institutions, and it focuses on efficiency, transparency, and citizen-centered services (e-Government Authority, 2022). These frameworks and policies have led to the introduction of several systems in local government authorities (LGAs). Among the most notable digital systems are the Local Government Revenue Collection Information System (LGRCIS), which automates revenue collection; the Government Electronic Payment Gateway (GePG), which centralizes payments; the Planning and Reporting System (PLANREP), which is used for planning and budgeting; and the Integrated Financial Management System (IFMS/Epicor), which supports financial accountability. The existence of these mentioned systems has contributed to positive outcomes in local government service delivery. For example, CAG reports show that GePG and LGRCIS have significantly increased transparency and reduced risks associated with cash handling in LGAs (NAOT, 2023). Also, PLANREP has improved budget preparation and monitoring, while IFMS has strengthened financial reporting and accountability (NAOT, 2024). Citizens have generally welcomed these systems, especially e-payment platforms, which reduce bureaucracy and allow easier access to services (ICT Commission, 2021). However, challenges are not behind in the implementation of digital systems in local government service delivery. CAG reports highlight system downtime, poor integration between platforms, limited ICT skills

among staff, and inadequate infrastructure, especially in rural councils, something that continues to affect service delivery and citizen satisfaction (NAOT, 2023; NAOT, 2024).

A couple of studies have been conducted in Tanzania regarding the success and challenges of digital systems usage in local government service delivery (Mnyanyi & Mushi, 2022; Ngwilimi & Mwakalobo, 2021; Komba & Mushi, 2019A; Mnyandu & Kiwango, 2023; Ngwilimi & Mwakalobo, 2021; Mwalongo & Mnyandu, 2020; Komba & Mushi, 2019B; National Audit Office of Tanzania [NAOT], 2024). Most of the studies studied a single LGA, and a few studies studied at least two to three Local Government Authorities in Tanzania. However, there is a lack of review that presents collective experiences regarding success and challenges of digital systems in local government service delivery from many LGAs in Tanzania. This reveals a significant gap in literature and justifies the need for this review. This study presents experiences of Tanzania to contribute to the ongoing discussion on digital systems usage in local government service delivery. The key question to be discussed in this review is, how has the use of digital systems impacted service delivery in local government authorities in Tanzania, and what challenges have emerged in the process of using them? Specifically, this study aimed to assess the challenges and successes of digital systems usage in Tanzania's local governments' service delivery. This study systematically reviewed Tanzanian literature to establish what has so far been presented as successes and challenges of digital system usage in local government service delivery. It aimed to establish a learning experience of what Tanzanian literature presents on success and challenges to be given high attention from Tanzania's local government authorities using digital systems to deliver services. The researcher believes that an understanding of what digital systems have revealed in local government service delivery and the pressing challenges will draw the attention of LGAs and the central government to come up with strategic ways to mitigate the present challenges so that local government service delivery can fit in the road to the implementation of Vision 2050 that encourages the usage of digital systems in implementing it. While this study focuses on successes and challenges, it also places studies that are to be taken into consideration by all local government authorities and everyone to realize digital governance aims. The study undertook a PRISMA protocol approach and Technology Acceptance Model to answer the research objectives. The next subsequent sections present a theoretical review, materials and methods, followed by a presentation of results and discussion, conclusion, and recommendations.

2. Theoretical Review

A. Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is a user acceptance theory introduced by Fred D. Davis in 1989 to explain and predict why people adopt or reject information systems (Davis, 1989). TAM aims to link beliefs about a system to the intention to use it and, ultimately, actual use (Davis, 1989). TAM was built under two assumptions. First is perceived usefulness, and second is perceived ease of use. means that users will adopt a system if they believe it improves their performance or outcomes. For example, in Tanzanian local governments, staff and citizens are more likely to use digital systems like e-payment systems when they see that those systems reduce corruption, speed up service delivery, and make transactions more transparent (Ngwilimi & Mwakalobo, 2021). Perceived ease of use means that users are more willing to use the system if they believe that the system is simple to learn and operate. A study in Arusha by Mnyandu & Kiwango (2023) found that staff relied more on ICT when systems were user-friendly and did not require complex training. This implies that the usefulness of the system depends much on how easy and simple it is. In Dar es Salaam City Council, a study by Komba & Mushi (2019A) showed that weak internet and system complexity discouraged digital systems usage. These two constructs are both connected to this study that focuses on the successes and challenges of ICT in Tanzanian councils. When systems are useful and easy, adoption may rise and service delivery improves. When digital systems are unreliable or difficult, staff may turn to manual processes, something that can undermine efficiency.

TAM theory has weaknesses. Its weakness is that it focuses mainly on individual perceptions and does not fully capture structural barriers like poor infrastructure or political influence. Nevertheless, it was chosen for this review because it provides a clear lens for acceptance of the systems, and it has been a widely tested framework to understand user attitudes on digital systems acceptance, something that is central to explaining why usage of digital systems in local government service delivery in Tanzania succeeds or fails.

3. Materials and methods

A. Review Protocol

This review employed the Preferred Reporting Items for Systematic Literature Review and Meta-Analysis (PRISMA). To achieve the objective of the review and respond to the research question, a comprehensive electronic literature search was done through semantic searches, ResearchGate, Google Scholar, and Scopus databases. These chosen online data repositories were trusted for search because they are the most trusted online databases, and they publish many journals from which a large number of articles can be retrieved. During the search, only peer-reviewed journal articles were considered because they present empirical findings. Along with that, this review considered only articles published between 2019 and 2025. This time was considered to be good and updated to present the Tanzanian trends on the success and challenges of digital systems in local government service delivery. The researcher employed the English language because of familiarity with it. But also, the English language is one of the languages that is mostly used in Tanzania. This is to say that, from searching for journal articles and presenting each and everything in this review, the English language took a whole place. This study took articles that were relevant to the success and challenges of digital systems usage in local government authorities.

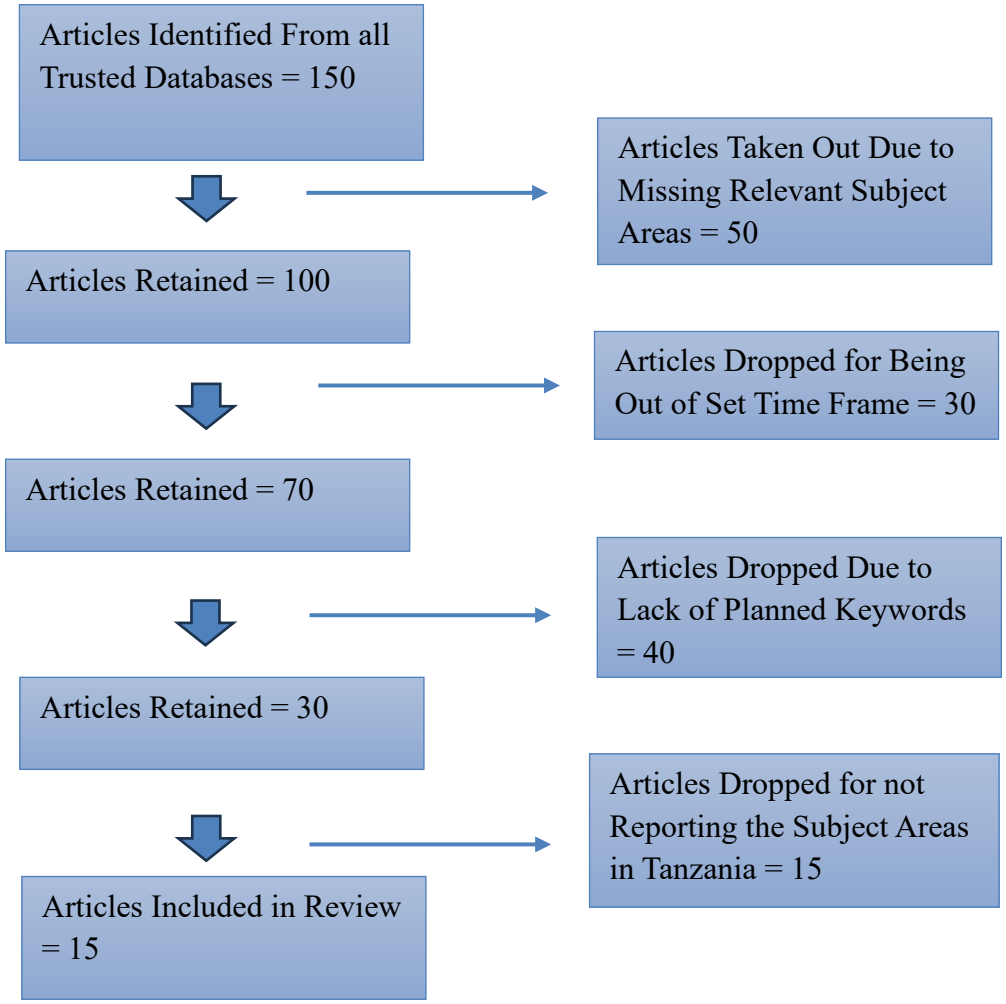

Fig-1: Showing Selection Process of Articles

Source: Author's Own Construct

B. Search Strategies

The identification, review, and extraction of journal articles was guided by an understanding of the research question. The next rundown was crafting relevant keywords so as to get the intended articles for this study. The keywords that were developed were "digital systems," "digital systems usage in local government service delivery," "success of digital systems usage in local government service delivery," "challenges of digital systems usage in local

government service delivery," "Tanzania," "local government service delivery," "local government," and "Tanzania's local government." These keywords were used to search articles from the above-mentioned trusted online databases.

After searching, the researcher came up with 150 articles, then 50 articles were taken out due to missing relevant subject areas. The remaining number of articles was 100, whereby 30 articles were dropped down because they were out of the set time frame. Then, the article asset remained with 70 articles, of which 40 were taken out of the search because they lacked the planned keywords. The search asset remained with 30 articles, of which 15 were dropped because they were not reporting about digital systems in Tanzania's local government authorities. Finally, the search asset retained 15 articles, which were included in this review. The overall quality of included studies was assessed based on clarity of objectives, methodology, and relevance to this review. The inclusion and exclusion criteria are detailed in Table 1 below. But also, the selection process is presented through the PRISMA flow chart in Figure 1 below.

Table 1: Showing Inclusion and Exclusion Criteria of Articles

No	Criteria	Decision for Article Selection
01	Nature of Literature	Journal Article
02	Date of Publication	2019 - 2025
03	Language Used	English Language
04	Location	Tanzania
05	Research Methods	Qualitative and Mixed Methods
06	Subject Area	Digital systems in Local Government Service Delivery
07	Local Government Level	Municipal level and Districts level
08	Focus	Success and Challenges of Digital Systems Usage in Local Government Service Delivery

Source: Author's Own Construct

4. Results and Discussion

A. Descriptive

All articles included in this review are well arranged on Table 2. The arrangement of the reviewed articles starts with name of the author (s), year of publication, title of the article, methods, name of Local Government Authority, country, focus on success and challenges of digital usage in local government service delivery, and journal of publication. Also, to reveal that this study has only adopted peer-reviewed journal, this study has included all titles of the journals in which reviewed articles were taken (see Table 3). But also, this study arranges success and challenges of digital systems usage in local government service delivery as per studied Local Government Authority in Tanzania (see Table 4). But also, this review reveals that a total 14 Local Government Authorities using digital systems were found in the studies. They include Dar es Salaam City Council, Ilala Municipal Council, Kinondoni Municipal Council, Temeke Municipal Council, Arusha City Council, Bahi District Council, Chamwino District Council, Dodoma City Council, Morogoro Municipal Council, Mpwapwa District Council, Kongwa District Council, Mbeya City Council, Mwanza City Council, Ludewa District Council. The list of Local Government Authorities included both urban and rural authorities.

Table 2: Showing Articles Reviewed

Author(s)	Year	Title	Methods	Local Government Authority (LGA/Institution)	Country	Focus (Success/Challenges)	Journal
Komba, C., & Mushi, P.	2019	ICT usage and service delivery in	Qualitative	Dar es Salaam City Council	Tanzania	Success & Challenges	African Journal of Governance

		urban councils: A case of Dar es Salaam					and Development, 8(2)
Komba, C., & Mushi, P.	2019	ICT sustainability challenges in Tanzanian local governments	Qualitative	Ilala Municipal Council, Kinondoni Municipal Council, Temeke Municipal Council	Tanzania	Challenges	African Journal of Governance and Development, 8(3)
Mnyanyi, C. B., & Mushi, G.	2022	ICT integration in local government revenue management: Evidence from selected councils in Tanzania	Mixed methods	Kinondoni Municipal Council, Ilala Municipal Council, Temeke Municipal Council	Tanzania	Success & Challenges	African Journal of Information Systems, 14(2)
Mnyandu, J., & Kiwango, A.	2023	ICT systems and efficiency in Arusha City Council	Quantitative	Arusha City Council	Tanzania	Success	Journal of Local Government Studies in Africa, 5(1)
Mushi, G., & Mnyanyi, C.	2022	Barriers to ICT usage in rural councils in Tanzania	Qualitative	Bahi District Council, Chamwino District Council	Tanzania	Challenges	African Journal of Information Systems, 14(3)
Mwalongo, D., & Mnyandu, J.	2020	Digital budgeting through PLANREP: Enhancing accountability in Tanzanian LGAs	Qualitative	Dodoma City Council, Morogoro Municipal Council	Tanzania	Success	International Journal of Public Sector Management, 33(5)
Mwalongo, D., & Mnyandu, J.	2020	Citizen exclusion in digital service delivery: Evidence from rural Tanzania	Qualitative	Mpwapwa District Council, Kongwa District Council	Tanzania	Challenges	International Journal of Public Sector Management, 33(6)
National Audit	2024	Audit findings on	Mixed methods	Kinondoni Municipal	Tanzania	Success & Challenges	Journal of African

Office of Tanzania (NAOT)		ICT systems in LGAs		Council, Ilala Municipal Council, Temeke Municipal Council, Dodoma City Council			Audit and Accountability, 12(1)
Ngwilimi, A., & Mwakalobo, A.	2021	E-payment systems and citizen satisfaction in Tanzanian municipalities	Quantitative	Mbeya City Council, Mwanza City Council	Tanzania	Success	Journal of African Public Administration and Management, 33(1)
Ngwilimi, A., & Mwakalobo, A.	2021	System interoperability challenges in Tanzanian LGAs	Qualitative	Morogoro Municipal Council, Dodoma City Council	Tanzania	Challenges	Journal of African Public Administration and Management, 33(2)
Kessy, S. S. A.	2019	Electronic Payment and Revenue Collection in Local Government Authorities in Tanzania: Evidence from Kinondoni Municipality	Quantitative	Kinondoni Municipal Council	Tanzania	Success	Tanzanian Economic Review, 9(2)
Kapongo, G. G., & Mutalemwa, D.	2024	Factors Contributing to the Success of Local Government Revenue Collection Information System (LGRCIS): A Case of Ludewa District Council	Mixed methods	Ludewa District Council	Tanzania	Success	African Journal of Empirical Research, 5(3)

Mtisho, G., & Rutenge, M. M.	2024	The Impact of Political Interference in Decision Making on the Performance of LGAs: Case of Temeke Municipal Council	Qualitative	Temeke Municipal Council	Tanzania	Challenges	African Journal of Empirical Research, 5(4)
Likangaga, R., Kumburu, N., & Panga, F.	2023	Influence of Accountability Indicators on Service Delivery among LGAs in Tanzania	Quantitative	Dodoma City Council, Morogoro Municipal Council, Mbeya City Council	Tanzania	Success & Challenges	East African Journal of Education and Social Sciences, 4(3)

Source: Author's Own Construct

Table 3: Showing Distribution of Articles Reviewed as Per Journal

No	Journal Name	Frequency	Percentage
1	African Journal of Governance and Development	2	13.3%
2	African Journal of Information Systems	2	13.3%
3	Journal of Local Government Studies in Africa	1	6.7%
4	International Journal of Public Sector Management	2	13.3%
5	Journal of African Audit and Accountability	1	6.7%
6	Journal of African Public Administration and Management	2	13.3%
7	Tanzanian Economic Review	1	6.7%
8	African Journal of Empirical Research	2	13.3%
9	East African Journal of Education and Social Sciences	1	6.7%

Source: Author's Own Construct

B. Success of Digital Systems Usage in Local Government Service Delivery

Studies have presented several successes of digital systems usage in Tanzanian local government service delivery. One of the most consistent successes is the improvement of revenue collection efficiency. It is reported that the introduction of digital systems like LGRCIS with self-services has made it easy for a citizen to pay bills while they are at home. Due to available digital systems, a citizen can track his or her debts, request a control number for payments, and generate receipts through electronic means. This has been reported in Kinondoni, Ilala, and Temeke by Mnyanyi & Mushi (2022) and Kessy (2019). Also, in Mbeya and Mwanza a study by Ngwilimi & Mwakalobo (2021) shows that citizens are accessing services like online payments, permits, licenses, and other services through electronic means. The study adds that digital tools have made service provision easy, reduced unnecessary movements, and saved time. Also, service providers and citizens have been shown to accept the systems due to their ability to deliver fast services. This is in accordance with TAM theory, which posits that systems are accepted when the usefulness is perceived by users.

Another success that has been reported is the improvement of citizens' satisfaction in service delivery. It is reported that ICT platforms such as e-payment systems have improved service delivery. This is because they allow citizens to access services more quickly and securely without even visiting offices. But also, citizens are reporting satisfaction, which is rooted in the ease of using digital tools to get service from their homes. For instance, licenses, business permits, receipts, and other essential documents can now be obtained through online systems without

visiting government offices something which reduces movements and shortens the service delivery process. Evidence from Mbeya and Mwanza (Ngwilimi & Mwakalobo, 2021) highlights these improvements in speed, security, and satisfaction. And due to the ability to deliver service on time, citizens see digital tools as a useful mechanism for service provision. This is in accordance with TAM, which posits that the usefulness of the systems makes users choose to use them. Also, similar findings in Dar es Salaam and Arusha (Komba & Mushi, 2019a; Mnyandu & Kiwango, 2023) confirm that ICT usage has enhanced efficiency, reduced bureaucratic barriers, and strengthened trust in public institutions by making service delivery quicker and citizen-friendly. These findings mean that digital systems have reduced some inefficiencies like delays in service delivery. Their ability to automate service delivery helps citizens experience quick service provision. But also, digital systems seem to abolish long chains of service delivery; now all processes are completed in one system compared to the previous manual systems that required a person to ask for a service through multiple individuals, which was slowing the provision of services.

Moreover, usage of digital tools has reduced corruption opportunities in service delivery. Studies conducted in Mbeya City Council, Mwanza City Council, Kinondoni Municipal Council, and Dodoma City Council (Kessy, 2019; Ngwilimi & Mwakalobo, 2021; National Audit Office of Tanzania, 2024) consistently inform that digital systems usage has reduced corruption opportunities in local government service delivery. This is because they have minimized cash handling, digitized transactions, and enforced compliance with financial standards through online systems. Digital systems in local government service delivery have eliminated the presence of middlemen and reduced informal payments that were asked by officials before the adoption of digital systems. This is to say that, automating financial processes and limiting human discretion, digital systems have made it harder for officials to manipulate financial figures or ask for unofficial payments from citizens during the service provision. This success means that digital systems are not only improving efficiency but also safeguarding integrity in public administration, protecting public resources, and building citizen trust in local government authorities.

Furthermore, usage of digital systems has reduced delays in service delivery. Studies conducted in Dar es Salaam City Council (Komba & Mushi, 2019A) and in Arusha (Mnyandu & Kiwango, 2023) reveal that digital systems have been streamlining service delivery to citizens by enabling fast services. It was reported that these days services like permits, bills, and applications for business licenses are now accessed through digital systems, and a person can decide whether to use his or her own phone to access those services or can decide to visit the office for help from the office. All options are right and fast-delivering due to digital systems that provide instant services. This ability to make the provision of service much easier has been applauded by many staff and citizens, making them accept digital transformation in service delivery due to the fastness aspect they have. This is in accordance with TAM theory, which provides that when systems present preferred usefulness, users accept them. Also, in the Mwanza City Council and Mbeya City Council, automation of services has improved the speed of accessing services due to few clicks enabled by digital systems used to give services to citizens, and to some extent the long chain of accessing services has been shortened (Kessy, 2019; Ngwilimi & Mwakalobo, 2021). This means digital systems have made service delivery easier at the local government level and bureaucratic delays have been minimized. Also, this has cutoff the tendency of reaching many individuals, instead now all processes are channeled in one direction, something which saves time. More successes of digital systems usage in local government service delivery are found in Table 4 below.

Table 4: Showing Successes of Digital Systems Usage in Local Government Service Delivery

No	Successes Reported	Name of LGA
1	• ICT usage improved service delivery • Faster access to services for citizens	Dar es Salaam City Council
2	• ICT systems strengthened sustainability in revenue management • Reduced manual errors in financial processes	Kinondoni Municipal Council, Ilala Municipal Council, Temeke Municipal Council
3	• Increased transparency in financial reporting • Improved accountability in revenue management	Kinondoni Municipal Council, Ilala Municipal Council, Temeke Municipal Council

4	• ICT systems increased administrative efficiency • Reduced delays in service delivery	Arusha City Council
5	• PLANREP digital budgeting improved accountability • Enhanced transparency in financial management • Strengthened monitoring of budget implementation	Dodoma City Council, Morogoro Municipal Council
6	• ICT audits strengthened monitoring of systems • Improved compliance with ICT standards • Enhanced accountability in financial management	Kinondoni Municipal Council, Ilala Municipal Council, Temeke Municipal Council, Dodoma City Council
7	• E-payment systems increased citizen satisfaction • Faster and more reliable transactions • Reduced corruption opportunities	Mbeya City Council, Mwanza City Council
8	• Electronic payment improved revenue collection • Increased efficiency in financial operations	Kinondoni Municipal Council
9	• LGRCIS successfully implemented for revenue collection • Increased efficiency in financial reporting • Improved accountability in revenue management	Ludewa District Council
10	• Accountability indicators linked to ICT improved service delivery • Strengthened performance monitoring • Enhanced transparency in council operations	Dodoma City Council, Morogoro Municipal Council, Mbeya City Council

Source: Author's Own Construct

C. Challenges of Digital Systems Usage in Local Government Service Delivery

Despite the presented successes of digital systems usage in local government service delivery, there are still challenges that compromise the full benefits of the digital systems in local government service delivery. One of the major challenges facing ICT usage in Tanzanian local government authorities is poor infrastructure, like poor internet connectivity and unstable electricity power. A study from the Dar es Salaam City Council (Komba & Mushi, 2019A) shows that weak internet connectivity causes delays in processing services like payments and other services like permits and licenses, something that often forces staff to return to manual means whenever systems fail. This means that poor or absent internet connectivity hinders implementations of activities that are to be implemented through online systems. This can delay the provision of services and disconnect the relationship between citizens and government. On the other hand, Mnyandu & Kiwango (2023) in Arusha City Council provide that unstable electricity led to frequent breakdowns of ICT equipment. The study adds that this situation has been disrupting service delivery because once the electricity cuts off, the service provision also stops. But also, this situation has been discouraging staff from relying on digital systems because when the electricity power cuts off, their minds think to return to paperwork. This can cause a user to perceive that digital systems are not useful when they fail to meet his or her needs, as suggested by TAM theory. In Ludewa, Kapongo & Mutalemwa's (2024) study shows that the rollout of LGRCIS is hindered by inadequate ICT infrastructure like unstable internet, which disrupts the revenue collection

process during the provision of services. These findings stand to mean that unstable internet and electricity power make ICT systems unstable, something that slows the provision of service to citizens. Also, the findings inform that staff are attracted to returning to manual processes due to unstable internet and frequent electricity power cutoffs, something that can continue to undermine efficiency, transparency, and accountability. Also, it is clear that without stable internet and stable infrastructure like electricity power, ICT usage cannot achieve its intended impact unless councils continue to be trapped in the same old inefficiencies (manual work) that digital transformation was brought to overcome.

Another confronting challenge is lack of funds for digital systems sustainability. It was reported that many councils often lack financial resources to maintain the installed or adopted ICT systems, like paying for upgrades or new updates and replacing outdated equipment. Komba & Mushi (2019A) in the Dar es Salaam City Council, their study explained that ICT projects were donor-driven and lacked long-term funding, something which caused systems to become outdated after initial support ended. Also, Mnyandu & Kiwango (2023) in Arusha reported similar problems that councils were unable to sustain digital systems due to budget constraints. A study added that once the initial updates become outdated, LGAs fail to fund upgrading or updating the digital systems, something that has always been making systems continue to be unstable in functioning. This is to say that LGAs have no budget for accommodating system upgrades or updates, something which can cause digitals systems fail to function properly in service provision once they become oudated. Similarly, Kapongo & Mutalemwa (2024) in Ludewa Municipal Council found that limited budgets hinder the sustainability of LGRCIS because there is not enough money for upgrades or updates. The study adds that this situation of lacking funds for upgrading or updating systems has been interrupting service delivery and fueling staff to return back to manual processes. These findings mean that shortages of funds for upgrading or updating available digital systems have been causing digital systems to decay over time and forcing councils to revert to manual processes once digital systems fail. This challenge shows that digital systems require continuous investment for long sustainability. Councils must plan for lifecycle costs, upgrades, maintenance, and training to ensure sustainability of the adopted systems.

Moreover, lack of adequate ICT knowledge among some staff is another challenge that compromises usage of digital systems in local government service delivery. Lack of digital knowledge among some staff in LGAs was reported and seems to cause frequent errors, slow usage, and dependence on a few skilled individuals (Mnyanyi & Mushi, 2022). Also, research conducted in LGAs like Kinondoni Municipal Council, Ilala Municipal Council, and Temeke Municipal Council revealed that some staff struggle to operate digital systems, something which causes delays in revenue reporting and frequent mistakes in data entry. Also, the study added that more individuals who are affected by these challenges are those who have been in public services for a long time and have never received digital literacy. Also, a study by Ngwilimi & Mwakalobo (2021) in Mbeya City Council and Mwanza City Council found that e-payment systems are underutilized because staff and citizens lacked digital literacy. This means there is a possibility that many payments are still processed manually, something which can influence corruption and informal payment. Furthermore, a study by Kapongo & Mutalemwa (2024) in the Ludewa District Council provided that staff needed extensive training to use LGRCIS effectively, and without it, the system produced inaccurate reports that affected accountability. These presented findings in the studies reveal that limited skills in digital literacy have caused ICT systems to be underused, something which is reducing their effectiveness. It is clear that when most of the staff are not skilled with digital systems, councils become dependent on a few trained individuals, something which is risky if those staff leave or are unavailable. This challenge informs us that ICT usage is not just about technology but also about people who use it. Without continuous trainings and capacity-building programs based on digital systems, councils cannot sustain digital transformation. Other challenges are presented in table 5 below;

Table 5: Showing Challenges Facing Usage of Digital Systems in LGAs Service Delivery.

No.	Challenges Reported	Name of LGA(s)
1	• Weak internet connectivity • Frequent power interruptions • Resistance from staff • Limited funding to sustain ICT projects after initial support	Dar es Salaam City Council

2	• Unstable electricity • Staff reluctance to use ICT platforms • Lack of long-term budgets to maintain ICT systems	Arusha City Council
3	• Poor ICT infrastructure • Staff lacked training, • Limited budgets for sustainability of ICT systems	Ludewa District Council
4	• Staff struggled to operate ICT systems • Resistance to change • Inconsistent data entry	Kinondoni Municipal Council, Ilala Municipal Council, Temeke Municipal Council
5	• Low digital literacy • Systems not fully integrated with council databases • weak cybersecurity and inadequate backups	Mbeya City Council, Mwanza City Council
6	• PLANREP faced challenges linking budget data with financial reporting systems • Inaccurate monitoring and poor accountability	Dodoma Municipal Council, Morogoro Municipal Council
7	• Audit reports showed incomplete use of ICT systems • Poor access management and delayed reconciliations	Dodoma Municipal Council, Kinondoni Municipal Council, Ilala Municipal Council, Temeke Municipal Council
8	• ICT controls not consistently enforced	Morogoro Municipal Council, Mbeya City Council

Source: Author's Own Construct

5. Conclusion and Recommendations

Usage of digital systems in local government service delivery is expected to streamline service provision and increase effectiveness in service delivery. In Tanzania's Local Government Service Delivery, digital systems have revealed several successes, such as improvement of revenue collection efficiency, improvement of citizen satisfaction in service delivery, reduced corruption opportunities, and reduced delays in service delivery. These successes inform on what digital systems have helped in local government service delivery, and they confirm that digital reforms have the potential to transform governance at the local level. However, usage of digital systems in local government service delivery has got to have various challenges, including poor infrastructure, lack of funds for digital systems sustainability, lack of adequate ICT knowledge, and poor data quality. These challenges seem to prevent the effectiveness of digital systems in local government service delivery. The nation is heading to implementation of Vision 2050 that demands more application of digital systems. Local government authorities and the central government should find immediate mitigation measures to solve the presented challenges so LGAs can contribute effectively to the realization of the vision. Without mitigating the reported challenges, users will perceive the digital systems as hindrances in the implementation of their daily routines; in the end, they may decide to continue with it or not, as asserted by the Technology Acceptance Model.

Based on the challenges presented in this study, the following recommendations are provided as the way to mitigate them:

It was seen that staff capacity (digital skills) on digital systems is a critical factor for the success of digital transformation in local government service delivery, and its absence makes staff fail to operate the systems effectively. It was seen that in many LGAs, workers struggled to operate systems effectively to deliver services to citizens, something that increased delays, increased errors, and caused underutilization of digital systems. This trend has led to weakened accountability and made councils depend on a few trained individuals. To mitigate this challenge, councils should establish continuous training and capacity-building programs specific to staff roles and

establish digital literacy initiatives like creating WhatsApp groups that intend to share digital skills based on the systems used in their offices. By building a pool of skilled ICT individuals at the council, it will reduce reliance on external support and dependence on literate ones.

Also, it was reported that some of the information generated by ICT systems was often unreliable. This was due to inconsistent data entry and duplicate records done by some staff, something which seems to weaken various reports and information of citizens. It is therefore recommended that councils should introduce standardized data entry protocols and conduct regular data audits in the systems. This will help to avoid mistakes and ensure that the systems are producing reliable information for better decision-making. However, this needs staff to be well trained so they can guide the system to produce the desired information.

Furthermore, it was seen that LGAs lack funds for sustaining their adopted systems. Findings revealed that LGAs have no funds for conducting system upgrades or updates and replacing the outdated digital equipment. This seems to fuel inconsistency in using digital systems to provide service. It was revealed that once initial support ends, systems run down, something that seems to revert employees to manual means. Digital systems need to be updated, and most of the big and good updates demand money. It is recommended that LGAs, by cooperating with the central government, should allocate digital sustainability funds or budgets so as to accommodate regular payments for system upgrades or updates and replacing outdated digital tools. This will influence consistency in using systems and will help systems to function accurately.

Since this study is the review. Further study can be conducted in many LGAs using digital systems in service delivery to capture the direct voices from the users (LGAs).

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