

Digital Governance and the Efficiency of Public Service Delivery in Developing Countries: Evidence from Local Governments

Otieno Kenneth Okelloa¹, Dr. Basake Julius Alochere², Nabimanya Norman³

¹PhD Student, Kampala International University, Kampala, Uganda

²Lecturer, Kampala International University, Kampala, Uganda

³Assistant lecturer, Kampala International University, Kampala, Uganda

DOI: <https://doi.org/10.51584/IJRIAS.2026.110400084>

Received: 10 April 2026; Accepted: 16 April 2026; Published: 08 May 2026

ABSTRACT

This article examines how digital governance shapes the efficiency of public service delivery in local governments in developing countries, with particular attention to selected local governments in Uganda. The article is anchored in Digital Era Governance, which treats digital reform not simply as the automation of existing procedures but as the reintegration of fragmented processes, the redesign of services around citizens' needs, and the digitization of administrative routines. A convergent mixed-methods design was used. Quantitative data were generated through structured questionnaires administered to 120 respondents drawn from local government officials, ICT personnel, and service users, while qualitative evidence was obtained through key informant interviews and document review. Quantitative data were analyzed using descriptive statistics, and qualitative data were interpreted through thematic analysis and then integrated with survey findings. The results show that electronic document management systems, online tax payment platforms, digital land records, and online service portals are increasingly used in local governments and are associated with shorter service processing time, greater transparency, and improved citizen satisfaction. However, the findings also reveal that the benefits of digital governance are uneven because financial constraints, weak ICT infrastructure, poor internet connectivity, and limited digital skills continue to restrict implementation. The article argues that digital governance improves service delivery most effectively when technological adoption is supported by organizational capacity, process redesign, and inclusive citizen access. Its main contribution is to move beyond descriptive accounts of e-government by offering a clearer theoretical framing of digital governance, a more critical review of competing perspectives, and a methodologically stronger account of how local government evidence can be generated and interpreted in developing-country settings.

Keywords: Digital Governance, Digital Era Governance, Public Service Delivery, Local Governments, Administrative Efficiency, E-Government, Developing Countries

INTRODUCTION

Digital technologies are at the forefront in the modern revolution of public administration as governments are turning to information and communication technologies to maintain records, put institutions into collusion, facilitate data flow, and provide citizens with services. Digital governance in this broader reform agenda does not simply mean computerization of government operation, but applying the digital systems strategically to redesign administrative habits, information flows, accountability, and interaction between citizens and the state. This difference is significant due to the fact that the value of digital reform to the general population does not hinge on the existence of technology per se but whether or not it enhances the work of the institutions or the experiences of the users of the services (Eom and Lee, 2022; OECD, 2022; United Nations, 2024; Yang et al., 2024). (PubMed)

In the developed and developing world, governments have embraced the usage of online portals, electronic payments, electronic registries, and integrated information systems with an aim of enhancing the performance

of their administration units and lowering the transactions cost and enhancing transparency. These reforms are often touted globally, particularly in developing nations, as the way to reverse long term service delivery issues of bureaucratic slowness, interdepartmental discoordination, poor interdepartmental records, and inaccessibility to citizens. The results are, nevertheless, not uniform since some digital efforts enhance responsiveness and efficiency and some replicate the organizational flaws that already exist in electronic format without the implementation being supplemented by sufficient capacity, interoperability, and infrastructure (Eom & Lee, 2022; Mofokeng et al., 2025; United Nations, 2024; Yang et al., 2024). (PubMed)

Of particular significance in studying these tensions is the local government level as it is the daily contact point between the citizens and the state. The local authorities are involved in licensing, local revenue administration, records management, land processes, and land-related processes, and such failures in administrative capacity have their direct impacts on the citizens in the form of delay, lack of transparency, and dissatisfaction of the citizens. Recent policy and implementation reports in Uganda indicate local authorities are still at the core of service delivery change in addition to experiencing the unbalanced digital readiness, infrastructure disparities, and coordination issues. This renders them an especially pertinent source of studying the influence of digital governance on practice of service delivery (Digital Impact Alliance, 2024; Government of Uganda, 2025; Ministry of ICT and National Guidance, 2024; United Nations, 2024). (Digital Impact Alliance)

Despite the frequent introduction of the idea of digital governance in the literature as a technical solution to the problem of supplying the population with its services, it is not always employed uniformly. Other researchers simplify it to e-government service portals and internet transactions but some consider it broadly to encompass transparency, participation, interoperability, data use and transformation of the institution. The United Nations itself observes that e-government and digital government are used interchangeably, whereas newer scholarship contends that digital governance should be studied with respect to organizational change, the capacity of local governance, and citizen-focused results. In the absence of conceptual clarity, empirical analysis is even less strong as it becomes hard to understand what will be measured and how by what mechanisms digital change will lead to an improvement in service delivery (Amirova, 2025; United Nations, 2024; Xu and Dai, 2024; Yang et al., 2024).

This paper fills this gap by discussing the overall impact of digital governance on efficiency of delivery of public services by local governments in developing nations with specific reference given to specified local governments in Uganda. A Digital Era Governance perspective that implies the restoration of fragmented administrative functions, service design that caters to needs, and the mobilization of the public operations by means of digitization steers the article. It also reacts to more recent scholarship which recommends better conceptual framing, greater focus on the design of services to the citizen, and greater care in how the readiness of the institution preconditions the success of digital reform. In this respect, the article is valuable because it reinforces the theoretical background, reframes the analysis of the literature as follows, a critical synthesis, and it describes the methodological rationale behind the evaluation of efficiency in digital governance and service delivery (Amirova, 2025; OECD, 2022; OECD, 2024; United Nations, 2024). (Frontiers)

Problem Statement

Despite the extensive promotion of digital governance as a way to achieve more efficient, transparent and citizen-centred public administration, there is a paucity of empirical insight into its operation at the local level in developing countries. A large number of published materials dwell more on the national strategy of digital transformation, cross-country indices, or general assertions as to the good of e-government, and less on studies which are grounded in discussing sub-national institutions where the service is actually provided. Meanwhile, studies are coming to indicate that technology in itself is not an assurance of better performance; results are available only through the coordination, infrastructure, skills, inclusion, and support, means institutional. Relatively, in Uganda, there is evidence on record (official and policy-oriented) that indicates ongoing limitations in local digital preparedness, connection, individual staff competency, and cross-agency assimilation, and this makes arriving at a conclusion that digital reforms inherently enhance service efficiency challenging. It is not just the question of the existence of digital tools, but about whether digital tools are institutionally embedded, in a way that minimizes administrative latitude, enhances transparency and improves the citizen

experience within the local government (Digital Impact Alliance, 2024; Eom and Lee, 2022; Government of Uganda, 2025; Mofokeng et al., 2025; United (Digital Impact Alliance)

Purpose of the Study

The purpose of the study was to examine the influence of digital governance on the efficiency of public service delivery in local governments in developing countries, with particular focus on selected local governments in Uganda.

Specific Objectives of the Study

- i. To examine the extent of adoption of digital governance practices in local governments.
- ii. To assess the influence of digital governance on the efficiency of public service delivery in local governments.
- iii. To identify the challenges affecting the implementation of digital governance in local governments.

LITERATURE REVIEW

Theoretical Background: Digital Era Governance.

This paper builds on the Digital Era Governance (DEG) as a valuable framework explaining how digital technologies transform the way the public administration goes beyond the narrow automation of routine services. In the new digital government research, successful reform has come to be seen as necessitating consistent, human, institutionally cohesive, change as opposed to the solitary implementation of websites or online forms. This renders DEG particularly applicable to local administrations in third world countries, where the lack of efficiency is commonly manifested through divided mandates, duplicate records, poor coordination and under-designed services requiring citizens to navigate through various offices to receive one service. Digital governance is more a process of governance/organizational reform, rather than a technical modernization, to be analysed in this logic (Eom & Lee, 2022; OECD, 2024; United Nations, 2024; Yang et al., 2024). (OECD)

The DEG view is especially helpful regarding the fact that three intertwined nature reform logics are pointed out: integration of fragmented functions, service design highest and most benefiting of the needs of both consumers and more radical digitization of internal administrative practices. More recent studies on citizen-focused public services and digital public sector reforms demonstrate that these dimensions are important, as digital advantages are maximized by back-office systems that are networked together, simplified service routes, and integrated route access and responsiveness by citizens into government. In this way, DEG assists in contrasting the superficial digitization and actual administrative change as it focuses on institutional coordination, service integration, and user experience simultaneously (Amirova, 2025; Mangai & Ayodele, 2025; OECD, 2026; United Nations, 2024). (Frontiers)

Directed by this framework, the conceptualization of digital governance in the study at hand is as a multi-dimensional construct of digital record management, online transaction systems, platforms of access to online services, and digital communication channels, where the efficiency of the public service delivery is conceptualized by shortened processing time, increased transparency, enhanced coordination, and higher levels of citizen satisfaction. The framework also indicates that digital tools are not neutral, and the effectiveness of the digital tool is conditional upon a set of enabling factors including staff capacity, infrastructure, administration and leadership, data management and institutional coherence. To local governments in the developing world, DEG thus offers a more analytical solid ground upon which to study the potential and the boundaries of digital reform (Buyannemekh et al., 2024; OECD, 2024; United Nations, 2024; Xu and Dai, 2024). (ScienceDirect)

Conceptualizing Digital Governance: Competing Perspectives

The limitation of the literature that stands out as a significant one is the recurrent issue of confusion by equating digital governance, digital government, and e-government. New global paradigms recognize the fact that the words are typically applied in a loose way, but this semantic blur may hide significant analytical differences. A broader governance perspective of service delivery involves institutional coordination, data use, accountability,

inclusion as well as creation of public value throughout an entire policy and service cycle compared to a narrower service-delivery perspective which involves electronic delivery of public services using portals, mobile applications and online payments. The macro perspective is more suited to the given research since the work of local governments is defined by the performance based not exclusively on the front-end platform but also by a transformation of the inner processes and relations with the citizens through digital systems (Buyannemekh et al., 2024; OECD, 2024; United Nations, 2024; Yang et al., 2024). (ScienceDirect)

The second discussion revolves around whether technology as a phenomenon in itself should be seen as the primary force behind better service delivery by the state. Techno-optimistic arguments are also focused on speed, convenience and automation, whereby digital tools are said to lower transaction costs and enhance accessibility. But more skeptical institutional and socio-technical approaches warn that digital systems are not standalone systems, but instead they are entrenched within existing administrative settings and when uncoordinated or lacking skills or funding and procedural redesign, they tend to recreate inefficiency. The recent body of scholarship on digital transformation demonstrates that adoption of technology is a poor proxy to governance improvement unless it is accompanied by management reformation and institutional preparedness, and favorable conditions in terms of support and implementation (Eom and Lee, 2022; Mangai and Ayodele, 2025; Mofokeng et al., 2025; Yang et al., 2024). (PubMed)

The third conceptual controversy revolves around the issue of the measurement of success. There are studies that are focused on efficiency measures like speed, availability, and online rates, and some claim that a more sufficient measure should be found that takes into consideration the inclusion, trust, accountability, and the difference experience of users in social groups. Such criticism is especially essential in the context of developing countries where digital divides can imply that the benefits enjoyed by digitally connected people are not replicated by other users with lower, less digital, and/or less trustful attitudes toward digital platforms. A conceptualization of digital governance should be critical, hence the balance between the efficiency and the administration and social inclusion and the capability of citizens (Morte Nadal and Esteban-Navarro, 2026; OECD, 2026; Popescu et al., 2024; United Nations, 2024). (Sage Journals)

Digital Governance and Public Service Delivery in Local Governments

A richly developed literature on this topic suggests that the administrative functions of governing bodies can be enhanced through digital governance that consists of making procedures simpler, generating less paperwork and allowing access remotely, as well as enhancing traceability in the administrative functions. The relevance of these gains particularly applies to local governments since most of their services comprise of repetitive and transaction intensive processes that include services like licensing, tax collection, certification, record verification, and follow up of citizens. Digital systems can have a positive impact on the reduction of waiting time, enhancement of the reliability of information provided, and the resulting lower cost of the transactions that people and state institutions have to pay when properly designed (Buyannemekh et al., 2024; Mofokeng et al., 2025; OECD, 2026; Yang et al., 2024). (ScienceDirect)

Simultaneously, the positive literature is not homogenous and the inconsistency is analytically significant. Other studies present significant entry into enhanced accountability, responsiveness, and efficiency as digital systems are interconnected with engaging internal process redesign and user-centered implementation. Other research findings indicate smaller or disproportionate beneficial results due to the introduction of digital tools without interoperability, without sufficient training of staff, or institutional resource sustainability, which is why two-paper and two-digital systems emerge that can even increase the workload on the administration. This disjunctive hints that the connection between digital governance and service delivery efficiency is contingent instead of innate (Eom and Lee, 2022; Mangai and Ayodele, 2025; Mofokeng et al., 2025; Xu and Dai, 2024). (PubMed)

The local government literature in developing contexts is then also slimmer than the national-level literature because often it is the local authorities that are the most immediate contact of the citizens with the state. The recent researches of municipalities and sub-national systems indicate that digital platforms can enhance communication, revenue control and tracking services but point to the fact that grounded evidence of the daily administrative setting is still scarce. This discrepancy is important, as sub-national institutions experience very different limitations in personnel, infrastructure, and access to citizens that can be washed out in general national

digital government indicators (Amirova, 2025; Mofokeng et al., 2025; OECD, 2025; Xu and Dai, 2024). (Frontiers)

Barriers and Enabling Conditions in Developing Countries

Infrastructure has been a consistent literature finding in the support of effective digital governance. Stable power system, a bandwidth connection, devices, compatibility of the software, and the maintenance of the system are not fringe benefits but the bone of the digital administration. In cases where such foundations are poor, platforms will not remain solid, records will not be complete and the time of transaction may not go down but may go up. Recent studies by international and local-government indicate that any shortage of infrastructure has persistently emerged as one of the most obvious impediments to sustainable digital reform, specifically in low-resource and decentralized environments (Mofokeng et al., 2025; OECD, 2025; United Nations, 2024; Xu and Dai, 2024). (jolgri.org)

Another enabling condition of great significance is institutional capacity. Digital governance involves technical expertise, management assistance, cross-department coordination, procedural clarity and management commitment to new administrative norms. Devoid of these capabilities, staff members might either dislike systems, utilise them insufficiently or even revert to parallel manual processes, thus restricting its efficiency benefits. Other recent studies of digital reform in the public sector once again state that the capability-building and organizational readiness is the most crucial aspect of reform rather than the technologies themselves, particularly where the reform is conditional upon a change of long existing bureaucratic practices (Eom & Lee, 2022; Mangai & Ayodele, 2025; OECD, 2026; Yang et al., 2 (PubMed)

The third concern is citizen capability and inclusion that determine whether the digital services can, in fact, create public value. The effectiveness of the digital systems can only be effective when the target users can use, believe, and interact with it. Evidence of systematic reviews indicates that skills, connectivity, social conditions and service design influence digital inclusion whilst citizen-focused studies indicate that attitudes towards quality, usability, and responsiveness influence uptake and satisfaction. This implies that to determine if a country has digital governance, digital governance cannot simply be assessed through the adoption of technology in government offices, but rather through the level to which citizens could effectively use the services delivered to them (Buyannemekh et al., 2024; Morte Nadal and Esteban-Navarro, 2026; Popescu et al., 2024; United Nations, (ScienceDirect)

Critical Synthesis and the Study's Unique Contribution

Collectively, the new literature confirms that digital governance is promising in a significant way to enhance the provision of the public hence guidance, but it also indicates significant weaknesses in the concept that are of interest and importance. To begin with, a number of studies have been conceptually blurred, bouncing between e-government, digital government, and digital governance not defining the degree of change under analysis. Second, reform success stories dominate the literature and less emphasis in stalled, partial or uneven implementation. Third, even in the local governments in the developing world, the available evidence is still relatively limited despite the fact that it is these institutions that form the interface between the citizen and the state. These limitations give reason to a more theory-centered and context-sensitive investigation (Eom & Lee, 2022; OECD, 2024; United Nations, 2024; Xu and Dai, 2024). (PubMed)

At this study, these gaps are filled by adopting a clearer theory-based definition of digital governance, by applying the definition in the context of local government service delivery, and by analyzing the benefits gained as well as the circumstances that limit such benefits. It is valuable in its contribution in bringing together a DEG-informed analytical lens, as well as evidence supplied by local governmental officials, ICT officers and service users in making the leap beyond the simple question of whether digital tools exist. Rather, it poses a more analytically helpful question; how, under what institutional and social circumstances does digital government enhance the efficiency of delivering local governments in developing countries? Such reorientation reinforces the originality of the study and places it more firmly in the context of current discussions about reforming the digital sector, citizen-centred governance and institutional capacity (Amirova, 2025; Mangai and Ayodele, 2025; Mofokeng et al., 2025; OECD, 2026). (Frontiers)

Materials and Methods adopted

This segment describes the methodological steps on how to undertake to research how digital governance and effectiveness of local governments in delivering public services are related. The section, consistent with the study of greater focus on methodological rigor of the study, explains the nature of the mixed-method design, the sampling logic, the data collection terms, the supports that have been made to enhance quantitative validity, reliability and the qualitative trustworthiness. The updated structure can also take into account recent advice that rigorous mixed-methods research must clearly reveal how the design choice, sampling, data generation, and integration lead to valid and defensible results (Kurtaliqui et al., 2024; Rana and Chimoriya, 2025; Schlunegger et al., 2024). (ScienceDirect)

Research Design

This research utilized convergent mixed-methods design where the collection of the quantitative and qualitative data were performed at the same stage, analysed independently, then synthesized on the stage of interpretation. This structure was suitable since the research aimed at finding quantifiable information on the use and perceived impacts of digital governance as well as contextualizing the importance of understanding the operation of digital systems in the context of local government institutions. Convergent designs come into play in particular in mixed-methods scholarship where the researcher requires comparing numerical trends with institutional descriptions to provide a more comprehensive account of a complex phenomenon in governance (Kurtaliqui et al., 2024; Rana and Chimoriya, 2025; Schlunegger et al., 2024). (ScienceDirect)

The study was reinforced in two ways by a convergent design. To begin with, it allowed making methodological triangulation using the survey answers to compare them with the interviews and documentary evidence. Second, it enabled the researcher to investigate the convergence, complimentary, and the potential tension between the numerical trends and the institutional answers. This is particularly significant in research projects on digital governance since the reported increase in efficiencies in survey data may mask bottlenecks in the implementation, absence of coordination, or user frustrations that would be more apparent in interviews and document analysis (Page-Reeves et al., 2025; Rana and Chimoriya, 2025; Schlunegger et al., 2024). (Taylor & Francis Online)

Study Area

The research was done in selected local government authorities in Uganda. Uganda is a good place to sustain this argument since the local governments have received a lot of workloads of service delivery, records management, local revenue collection processes and the functions that relate to the people as administrative authorities. Meanwhile, the most recent national digital transformation reports indicate that not all institutions and locations are equally implemented, as there are disparities in infrastructure, connectivity, system implementations, and local digital preparedness. This renders the Ugandan local governments an analytically valuable context in which to explore not just the absence or presence of digital governance practices, but also how the implementation conditions contribute to determining the results of the service delivery (Ministry of ICT and National Guidance, 2024; Ministry of ICT and National Guidance, 2023/20242027/2028; Ministry of (Ministry of ICT)

Study Population

The population under study included three groups of respondents who included local government officials, ICT officers and the citizens that used local government services. These classifications have been chosen since they are the key players in the digital governance process. Information about administrative processes and organizational performance can be obtained by the local government officials; technical skills about system operation and limitations of implementation can be obtained by the ICT officers; user perception of accessibility, convenience, the transparent nature, and effectiveness can be obtained by the citizens. Similarly, recent studies on digitalization of local governments and digital public services indicate that neither institutional nor service users alone can be used to understand digital governance (Mofokeng et al., 2025; Popescu et al., 2024; Xu and Dai, 2024). (LocalGov Research & Innovation)

Sample size as well as sampling plan.

The quantitative part relied on 120 valid responses to the survey, which aligns with the response counts as reported in the results section. The sample was designed to get both the providers and users of the local government services. Multistage sampling strategy was employed. In the initial phase, purposive selection of local governments was used since the local governments offered pertinent environments where digital governance practices including electronic records, online payments as well as service portals were existing or underway. At the second phase, the categories of respondents were identified in such a way that they all included administrative, technical and citizen viewpoints. Such combinations of stages are justified by the recent methodological literature in which it is necessary to select cases context-specifically before proceeding with wider respondent recruitment (Memon et al., 2025; Noor et al., 2022; Zrineh et al., 2026). (Jasem Journal)

The key informants, especially the officers in charge of ICT and senior local government officials, were identified through purposive sampling since these respondents had specialist knowledge of digital systems, administrative processes and barriers to implementation. In the survey element, simple random sampling was employed in the available staff and service-user frames to ensure that the respondents who were eligible stood equal opportunity to get selected. The purposive selection of information-rich cases and the random selection of the overall questionnaire sample enhanced both relevance and representativeness and minimized overdependence on one sampling logic (Memon et al., 2025; Noor et al., 2022; Zrineh et al., 2026). (Jasem Journal)

The methods of sampling was thus congruent with the rationale behind the mixed-methods inquiry: the qualitative strand was more concerned with depth, expertise, and contextual description, the quantitative strand with patterned evidence in relation to stakeholder groups. This combination made the study stronger as it allowed cross-perspective comparisons and minimized the possibility of conclusions only being based on managerial, only based on technical, or only based on citizen perspectives. Such complementary design whereby various strands are used to address different but related inferential questions is increasingly being advocated by mixed-methods advice (Kurtaligi et al., 2024; Page-Reeves et al., 2025; Rana and Chimoriya, 2025). (ScienceDirect)

Data collection methods and procedures.

It employed three methods of complement, namely; structured questionnaires, semi structured key informant interviews, and document review. The questionnaire produced some standardized quantitative data on the degree of adoption of digital governance, the perceived impacts in enhancing efficiency in service delivery and the perceived barriers to implementation. Majority of the items were closed-ended items and a few were arranged on a five point Likert scale to represent the degree of the perceptions of respondents. The instrument was organized in line with the aims of the study such that each of the constructs might be followed to an identifiable analytical space, which is commensurate with existing best practices in questionnaire design and silent data gathering (Handerer et al., 2024; Rana and Chimoriya, 2025; Repke et al., 2024). (Frontiers)

There was a standardised process of questionnaire administration. Respondents were sampled in the local government offices and service points after obtaining institutional permission and informed consent. The study was justified, confidentiality was assured and the respondents allowed ample time to fill the instrument. A clarification where it was needed was done without affecting responses and even the filled questionnaires were verified as being complete before any coding. These actions align with the methodological and research ethics approaches recent that place emphasis on clarity, voluntariness, understanding, and privacy in data gathering processes (Holtz et al., 2025; Miteu et al., 2024; Scheytt et al., 2024). (Taylor & Francis Online)

To gain the in-depth explanations of the digital governance practices, experiences of implementation, institutional constraints, and perceived service delivery outcomes, semi-structured interviews were conducted among purposely selected key informants. Open-ended questions in the interview guide were also related to the study objectives but also presented the opportunity to probe into detail, examples, and clarification. Interviews were recorded by using detailed notes and depending on consent to have the audio recorded which could be transcribed and later coded. Recent advice on in-depth interviewing emphasizes the necessity of meticulous

guide formulation, transparent recording protocols and formal reporting with a view to maximize the credibility of qualitative and analytical rigor (Lochmiller et al., 2026; Xu et al., 2025; Mars, 2025). (Sage Journals)

Surveys and interviews were corroborated by document review as evidence. Relevant policy reports, local government reports, administrative records, and online governance implementation materials were also reviewed to determine the formal structures, priorities, and procedures that drive digital transformation initiatives. Documentary data proved to be of particular use to verify the presence of specific systems like electronic document management, tax payment portals, and service portals. Document analysis is beneficial in mixed methods and triangulation-oriented studies since it enables researchers to make comparisons between formal institutional assertions and respondent descriptions and observed practices in administration (Page-Reeves et al., 2025; Rana and Chimoriya, 2025; Schlunegger et al., 2024). (Taylor & Francis Online)

Validity, Reliability, and Trustworthiness

The quality of the evidence was enhanced with several procedures. In the case of the quantitative tool, close matching of the items on the questionnaire with the purpose of the study and the most important dimensions of the theoretical framework contributed to content validity. Relevance, comprehensive, and comprehensibility of the items to represent relevant, comprehensive and understandable representations of the constructs of efficiency in digital governance and service delivery was assessed by expert review by knowledgeable colleagues or supervisors. Unclear, redundant, or either poorly congruent items were edited prior to administration. It aligns with the recent practice which defines content validity through the lens of relevancy, comprehensiveness, and comprehensibility (Handerer et al., 2024; Masuwai et al., 2024; Mokkink et al., 2025). (Frontiers)

The pretesting and internal consistency tests were done to take care of reliability of the questionnaire. Pilot administration: A pilot administration in an environment similar to that of the study setting was employed to determine ambiguous wording, difficulty in response, and sequence problems. Cronbach alpha was then used as a pragmatic measure of the relationship between grouped items using alpha and alpha as an indicator of internal consistency. The application of alpha as an internal consistency measure is still endorsed by recent methodology literature, but approaches to take should include not just viewing any cut-off as absolute but should also encourage researchers to consider reliability in relationship with item performance and the quality of the instrument design (Ahmad et al., 2024; Edelsbrunner et al., 2025; Repke et al., 2024). (Apps Penang)

In the qualitative strand, credibility, dependability, and confirmability were the procedures employed to enhance the trustworthiness. Triangulation of interviews, surveys and documents was used to strengthen the credibility. Reliability was ensured with the help of an interview guide that was associated with the objectives of the study and clear track of the decision to make on the decisions of the coders. Direct excerpts and a calculated intent to make the distinction between the accounts of the participants and the interpretations of the researcher enhanced the confirmability. Scholarship on the qualitative approach to methodology highlights in its recent years the importance of the practices as the key to defensible qualitative inquiry and explicit presentation of research quality (Lochmiller et al., 2026; Stahl and King, 2020; Braun and Clarke, 2021). (Sage Journals)

Data Analysis

Descriptive statistics were employed to code and analyse the quantitative data in the form of frequencies, percentages and mean scores. The prevalence of digital governance practices and barriers to implementation should have been presented by frequencies and percentages, whereas means scores would have been relevant to summarize the levels of agreement expressed by respondents to service delivery outcomes. These are fairly common in survey-based research of digital public services as they offer a concise and understandable picture of the response profiles of major variables and groups of stakeholders (Popescu et al., 2024; Repke et al., 2024; Xu and Dai, 2024). (MDPI)

Thematic analysis was used to analyse qualitative data of interviews and documents. The interpretation accepted a thorough repetition of field notes and transcripts, the extraction of significant textual units, coding frequent concepts, and snowballing of codes to general themes of adoption of digital governance, efficiency in service delivery, and constraints on implementation. Integration took place at the interpretation level wherein the

qualitative themes were applied in explaining, expanding and at times, qualifying the quantitative data. Existing methodological advice advocates the thematic analysis as a flexible yet strict strategy in case researchers passively transition building familiarization to coding, theme-building, reviewing, and interpretative synthesis (Ahmed, 2025; Braun & Clarke, 2023; Page-Reeves et al., 2025). (ScienceDirect)

Ethical Considerations

The study ethics were adhered to. The involvement was done on a voluntary basis and all subjects were made aware of the objective of the study prior to the data collection process. There was informed consent prior to administration of questionnaires or interviewing. The respondents were reassured that their identities would not be disclosed and that the information they would furnish will be used purely on academic ground. The dataset did not incorporate any personal identifiers and the records were made available securely to reduce the chances of unauthorized access. These steps mirror the existing guidelines that focus on informed involvement, privacy, harm reduction, and safe management of the research material in the social science investigation (Owen et al., 2026; Miteu et al., 2024; Scheytt et al., 2024). (ScienceDirect)

RESULTS

This section presents the study findings according to the stated objectives. Quantitative results are reported through frequencies, percentages, and mean scores, while qualitative evidence is used to explain how respondents experienced digital governance in practice. The revised presentation retains the original empirical pattern but interprets the results more explicitly through the theoretical lens of Digital Era Governance.

Digital Governance Practices in Local Governments

The first objective examined the extent to which digital governance practices had been adopted in local governments. Respondents were asked whether specific systems were present in their institutions or service environments.

Table 1: Digital Governance Systems Implemented in Local Governments

Digital Governance System	Frequency (n = 120)	Percentage (%)
Online tax payment systems	78	65.0
Digital land records management	64	53.3
Online service portals for applications	71	59.2
Electronic document management systems	83	69.2
Mobile communication platforms for citizens	68	56.7

Source: Primary Data, 2026

Table 1 shows that electronic document management systems were the most commonly reported digital governance tool, cited by 69.2% of respondents. This is analytically important because document management sits at the core of administrative reintegration: it affects how quickly files move, how easily information is retrieved, and how reliably departments coordinate their work. Online tax payment systems were reported by 65.0% of respondents, suggesting that local governments have prioritized digitization in revenue-related transactions where efficiency and traceability are especially visible.

Online service portals for applications were reported by 59.2% of respondents, while mobile communication platforms were reported by 56.7%. These tools are more directly related to the needs-based holism dimension of the theoretical framework because they bring government closer to citizens and reduce the need for repeated physical visits. Digital land records management was less widely reported at 53.3%, which may reflect the greater technical and institutional complexity involved in digitizing land administration compared to simpler transaction systems.

Qualitative Findings

Interview evidence supported the survey pattern by showing that digital governance was valued most where it reduced the burden of manual paperwork and file tracing. One ICT officer explained:

“Before the introduction of electronic document systems, many records were kept manually and retrieving them could take several days. With digital systems, records can now be accessed quickly, which has improved the speed of administrative processes.”

Another local government official emphasized the citizen-facing dimension of reform:

“Digital communication platforms such as mobile messaging and online portals have improved communication between citizens and government offices.”

These qualitative accounts suggest that digital governance adoption in local governments is not limited to visible online interfaces; it also involves back-office process changes that shape how quickly services can be handled.

Digital Governance and Efficiency of Public Service Delivery

The second objective assessed how digital governance influences the efficiency of public service delivery. Respondents rated a series of statements on a five-point Likert scale.

Table 2: Perceived Impact of Digital Governance on Service Delivery Efficiency

Statement	Mean Score	Interpretation
Digital systems have reduced service processing time	4.12	Agree
Digital governance improves transparency in service delivery	4.08	Agree
Digital systems reduce opportunities for corruption	3.89	Agree
Digital governance improves citizen satisfaction	4.01	Agree

Source: Primary Data, 2026

The results in Table 2 indicate a consistently positive perception of digital governance across all service delivery indicators. The highest mean score was recorded for reduced service processing time ($M = 4.12$), suggesting that respondents saw digital systems primarily as tools for shortening procedural delays. This finding supports the digitization dimension of DEG, which predicts efficiency gains where manual routines are replaced by faster, standardized workflows.

Digital governance also scored highly on transparency in service delivery ($M = 4.08$). This suggests that digital systems increase the visibility of procedures, records, and application status, thereby reducing uncertainty for service users. Citizen satisfaction also recorded a high mean score ($M = 4.01$), indicating that respondents associated digital systems with more convenient and predictable interaction with government. The slightly lower but still positive score for reduction of corruption opportunities ($M = 3.89$) implies that digital tools may constrain discretionary manipulation, although they do not eliminate governance risks entirely.

Qualitative Findings

Interview participants reinforced the survey results by linking digital systems to faster processing and better communication with citizens.

One local government official stated:

“Previously, citizens had to visit offices multiple times to follow up on service requests. With the introduction of online systems, some services can now be processed electronically, which saves time for both citizens and government staff.”

Another respondent emphasized the transparency effect of digital tracking:

“Digital platforms allow citizens to track the status of their applications. This has reduced complaints about delays and improved trust in local government services.”

Together, the quantitative and qualitative findings suggest that digital governance improves service delivery efficiency most clearly through time savings, process visibility, and easier citizen follow-up.

Barriers to Digital Governance Implementation

The third objective identified the major barriers affecting the implementation of digital governance in local governments.

Table 3: Barriers to Digital Governance Implementation

Barrier	Frequency	Percentage (%)
Limited ICT infrastructure	72	60.0
Poor internet connectivity	67	55.8
Lack of digital skills among staff	59	49.2
Financial constraints	75	62.5

Source: Primary Data, 2026

Financial constraints emerged as the most frequently cited barrier, reported by 62.5% of respondents. This suggests that local governments may recognize the value of digital governance but remain unable to scale or sustain it because of procurement, maintenance, and training costs. Limited ICT infrastructure was the second most common barrier at 60.0%, followed by poor internet connectivity at 55.8%. These findings show that the efficiency gains discussed earlier rest on fragile operational foundations.

The lack of digital skills among staff, reported by 49.2% of respondents, highlights the organizational dimension of digital governance. Technology can only improve service delivery when employees can use systems competently and consistently. From the DEG perspective, this finding is significant because digitization without capacity building weakens the promise of reintegration and needs-based service redesign.

Qualitative Findings

Qualitative evidence made these constraints more concrete.

One ICT officer explained:

“Many local governments do not have sufficient budgets to invest in modern ICT systems. This makes it difficult to maintain digital infrastructure and upgrade existing systems.”

Another respondent linked limited digital skills to uneven implementation:

“Some staff members are not familiar with digital systems, which slows down the adoption of new technologies.”

These accounts demonstrate that digital governance in local governments is shaped by the interaction of technology, resources, and organizational capability rather than by technology alone.

DISCUSSION

The discussion interprets the findings in relation to the theoretical framework and the wider literature. The revised analysis moves beyond simple confirmation that digital tools exist and instead considers how digital governance operates as a governance reform shaped by institutional conditions.

Digital Governance as Administrative Reintegration

The strong presence of electronic document management systems and online tax platforms suggests that local governments have prioritized digital tools that improve internal coordination and transaction processing. This pattern fits the reintegration dimension of Digital Era Governance. Rather than treating digital reform solely as a citizen-facing innovation, the findings indicate that back-office integration is a major mechanism through which efficiency improvements are generated. Faster retrieval of records, easier file movement, and improved departmental coordination reduce the internal friction that often delays local government service delivery.

This interpretation refines earlier literature that tends to equate digital governance with websites or public portals. The evidence here shows that administrative reintegration matters as much as outward digital access. In other words, digital governance should be understood not only as service availability online, but also as the restructuring of internal administrative processes that support service delivery.

Efficiency Gains Are Real but Conditional

The positive mean scores on reduced processing time, transparency, and citizen satisfaction indicate that respondents perceived clear efficiency gains from digital governance. These findings are consistent with studies that report improvements in responsiveness and accessibility when government services are digitized. However, the present study adds an important qualification: efficiency gains are conditional on the organizational and infrastructural context in which digital systems operate.

The literature is sometimes divided between optimistic accounts that view technology as a direct route to better service delivery and more critical accounts that stress institutional mediation. The results of this study align more closely with the latter position. Respondents acknowledged the benefits of digital systems, but they also identified the structural factors that limit those benefits. This suggests that digital governance should be interpreted as an enabling reform whose outcomes depend on funding, skills, connectivity, and institutional coordination.

Citizen-Centered Service Delivery and the Limits of Inclusion

The positive findings on citizen satisfaction and online service access indicate movement toward needs-based holism, where services are increasingly organized around user convenience rather than solely around bureaucratic procedure. Online portals, mobile communication, and electronic follow-up reduce the number of physical visits required and improve predictability for service users. These benefits are particularly important in local governments, where service users often bear high costs in terms of time, transport, and uncertainty.

At the same time, the barriers identified in the study caution against an uncritical celebration of digital access. Weak connectivity and limited digital skills mean that some citizens and staff may be less able to benefit from digital systems. This supports the critical literature arguing that digital governance must be assessed not only by efficiency metrics but also by the inclusiveness of access and use. A service that becomes more efficient for digitally connected users may remain inaccessible for others if the enabling environment is weak.

Implications for Theory and Practice

The findings support the usefulness of Digital Era Governance as a framework for studying local government reform in developing countries. DEG helps explain why the most significant benefits were observed where digital systems improved internal reintegration, citizen interaction, and process digitization simultaneously. The study therefore extends the application of DEG beyond national reform narratives by showing its relevance to sub-national service delivery environments.

Practically, the study suggests that governments should avoid narrow digitalization strategies that prioritize visible platforms without strengthening the institutional conditions needed for those platforms to work. Sustainable improvement in public service delivery requires coordinated investment in infrastructure, staff

capability, system integration, and citizen access. The central lesson is that digital governance is not merely a technical project; it is an administrative reform process whose success depends on organizational readiness and public value orientation.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

This study examined the relationship between digital governance and the efficiency of public service delivery in local governments in developing countries, with particular attention to Uganda. The findings show that digital governance practices such as electronic document management systems, online tax payment platforms, digital land records, and online service portals are increasingly present in local government settings and are associated with improved service delivery outcomes.

The study demonstrates that digital governance contributes to reduced service processing time, greater transparency, and improved citizen satisfaction. However, these gains are not automatic. Financial constraints, limited ICT infrastructure, poor internet connectivity, and inadequate digital skills continue to limit implementation. Theoretically, the study shows that Digital Era Governance provides a useful framework for understanding these results because it links efficiency gains to reintegration, needs-based service design, and digitization of administrative routines.

Overall, the article concludes that digital governance can improve local government service delivery, but only where digital tools are matched by adequate infrastructure, institutional capacity, and inclusive access conditions.

Recommendations

Strengthening ICT Infrastructure. Governments should increase investment in internet connectivity, devices, software maintenance, and interoperable systems within local governments. Infrastructure support should be treated as a foundational requirement rather than as a secondary support activity.

Capacity Building for Local Government Staff. Continuous training should be provided to administrative staff and ICT officers so that digital systems are used consistently and effectively. Training should include technical operation, records management, cybersecurity awareness, and citizen support.

Expanding Citizen-Centered Digital Platforms. Digital reforms should prioritize service interfaces that reduce unnecessary physical visits, clarify application procedures, and allow citizens to track service requests. Mobile-compatible platforms are likely to be especially useful in contexts where mobile access exceeds desktop access.

Aligning Digital Reform with Administrative Process Redesign. Local governments should avoid simply transferring inefficient manual processes onto digital platforms. Process mapping and simplification should accompany digitalization so that technology supports real administrative reform.

Strengthening Policy and Governance Frameworks. Comprehensive digital governance policies should address standards for interoperability, data protection, maintenance responsibilities, and long-term financing. Such policies are necessary for sustainability and for avoiding fragmented digital initiatives.

Study Limitation and Future Research

The study relied primarily on descriptive survey measures and qualitative explanations, which means that its conclusions are strongest in relation to perceived efficiency and implementation experience rather than causal estimation. Future research could extend this work by using comparative local government designs, longitudinal data, or service performance records to test whether digital governance produces sustained improvements over time. Additional work should also examine inclusion effects more directly, especially the extent to which digital reforms benefit or exclude different categories of service users.

REFERENCES

1. Ahmad, N., et al. (2024). Application of Cronbach's alpha in research instruments for reliability analysis. *Universiti Teknologi MARA*.
2. Amirova, A. (2025). Advancing citizen-centered public services in Kazakhstan: Legal, institutional, and digital governance perspectives. *Frontiers in Political Science*, 7, 1679601. <https://doi.org/10.3389/fpos.2025.1679601>
3. Boden-Stuart, Z., et al. (2026). Ethical research for all: Protection from harm, informed consent, and the right to withdraw. *International Journal of Educational Research Open*.
4. Braun, V., & Clarke, V. (2021). One size fits all? What counts as quality practice in reflexive thematic analysis? *Qualitative Research in Psychology*, 18(3), 328–352.
5. Braun, V., & Clarke, V. (2023). Toward good practice in thematic analysis: Avoiding common problems and be(com)ing a knowing researcher. *International Journal of Transgender Health*, 24(1), 1–6.
6. Buyannemekh, B., Picazo-Vela, S., Luna, D. E., & Luna-Reyes, L. F. (2024). Understanding value of digital service delivery by governments in Mexico. *Government Information Quarterly*, 41(2), 101936. <https://doi.org/10.1016/j.giq.2024.101936>
7. Digital Impact Alliance. (2024). Uganda case study.
8. Edelsbrunner, P. A., et al. (2025). The Cronbach's alpha of domain-specific knowledge tests before and after learning: A meta-analysis of published studies. *Educational Psychology Review*.
9. Eom, S.-J., & Lee, J. (2022). Digital government transformation in turbulent times: Responses, challenges, and future direction. *Government Information Quarterly*, 39(2), 101690. <https://doi.org/10.1016/j.giq.2022.101690>
10. Government of Uganda. (2025). Local Government Management of Service Delivery Performance Assessment 2024 national synthesis report.
11. Handerer, F., et al. (2024). Development and content validation of a questionnaire to assess the social determinants of mental health in clinical practice. *Frontiers in Psychiatry*, 15, 1377751.
12. Holtz, B., et al. (2025). Enhancing comprehension of online informed consent. *Ethics & Behavior*.
13. Kurtaliqi, F., et al. (2024). Using advanced mixed methods approaches: Combining PLS-SEM and qualitative studies. *Journal of Business Research*, 175, 114486.
14. Lochmiller, C. R., Cho, Y., & Lester, J. N. (2026). Designing trustworthy qualitative HRD research: Methodological considerations. *Human Resource Development Review*.
15. Mangai, M. S., & Ayodele, A. A. (2025). Reimagining public service delivery: Digitalising initiatives for accountability and efficiency. *Administrative Sciences*, 15(12), 477. <https://doi.org/10.3390/admsci15120477>
16. Mars, M. (2025). A call for progressive qualitative methodologies and transparent reporting of trustworthiness. *Journal of Health Care for the Poor and Underserved*.
17. Masuwai, A., Zulkifli, H., & Hamzah, M. I. (2024). Evaluation of content validity and face validity of a secondary school teacher self-assessment instrument. *Cogent Education*, 11(1).
18. Memon, M. A., et al. (2025). Purposive sampling. *Journal of Applied Structural Equation Modeling*.
19. Ministry of Finance, Planning and Economic Development. (2025). Digital transformation annual monitoring report FY 2024/25. Government of Uganda.
20. Ministry of ICT and National Guidance. (2024, April 14). PS, Ministry of ICT & National Guidance conducts review meeting for local government digital transformation progress. Government of Uganda.
21. Ministry of ICT and National Guidance. (2023/2024–2027/2028). Digital transformation roadmap. Government of Uganda.
22. Miteu, G. D., et al. (2024). Ethics in scientific research: A lens into its importance, history, and future. *Heliyon*, 10(9), e30078.
23. Mofokeng, S., Ramolobe, K. S., & Bogopa, D. L. (2025). Assessing the impact of digital technologies on service delivery in local government. *Journal of Local Government Research and Innovation*, 6, a234. <https://doi.org/10.4102/jolgr.v6i0.234>
24. Mokkink, L. B., et al. (2025). Content validity: Judging the relevance, comprehensiveness, and comprehensibility of an outcome measurement instrument. *Journal of Clinical Epidemiology*, 184, 111647.

25. Morte Nadal, T., & Esteban-Navarro, M. Á. (2026). Improving digital inclusion in e-government services in the European Union: A systematic literature review. *Journal of Information Science*. Advance online publication. <https://doi.org/10.1177/01655515261435201>
26. Noor, S., et al. (2022). Simple random sampling. *International Journal of English Literature and Social Sciences*, 7(5).
27. Organisation for Economic Co-operation and Development. (2022). OECD good practice principles for public service design and delivery in the digital age.
28. Organisation for Economic Co-operation and Development. (2024). 2023 OECD digital government index. OECD Publishing.
29. Organisation for Economic Co-operation and Development. (2025). Government at a glance 2025. OECD Publishing.
30. Organisation for Economic Co-operation and Development. (2026). Delivering digitally enabled public services that meet user needs. In *Digital government review of Biscay, Spain*. OECD Publishing.
31. Page-Reeves, J., et al. (2025). Interpreting discordant results in mixed-method research: Data triangulation, participant voices, and epistemic issues in health research. *International Journal of Social Research Methodology*.
32. Popescu, M. A. M., Barbu, A., Moiceanu, G., Costea-Marcu, I.-C., Militaru, G., & Simion, P. C. (2024). Citizens' perception of digital public services: A case study among Romanian citizens. *Administrative Sciences*, 14(10), 259. <https://doi.org/10.3390/admsci14100259>
33. Rana, K., & Chimoriya, R. (2025). A guide to a mixed-methods approach to healthcare research. *Encyclopedia*, 5(2), 51.
34. Repke, L., Birkenmaier, M., & Lechner, C. (2024). Validity in survey research: From research design to measuring the validity of survey data. *GESIS Survey Guidelines*.
35. Scheytt, C., et al. (2024). Ethical challenges in qualitative sociology: A systematic literature review. *Frontiers in Sociology*, 9, 1458423.
36. Schlunegger, M. C., Zumstein-Shaha, M., & Palm, R. (2024). Methodologic and data-analysis triangulation in case studies: A scoping review. *Western Journal of Nursing Research*, 46(8), 611–622.
37. Stahl, N. A., & King, J. R. (2020). Understanding and using trustworthiness in qualitative research. *Journal of Developmental Education*, 44(1), 26–28.
38. United Nations. (2024). United Nations e-government survey 2024: Accelerating digital transformation for sustainable development.
39. Xu, X., & Dai, M. (2024). Evaluation of local government digital governance ability and sustainable development: A case study of Hunan Province. *Sustainability*, 16(14), 6084. <https://doi.org/10.3390/su16146084>
40. Xu, Z., Wang, Y., & Qian, Y. (2025). The design and application of in-depth interviews in primary care research. *Chinese General Practice Journal*, 2(2), 100062.
41. Yang, C., Gu, M., & Albitar, K. (2024). Government in the digital age: Exploring the impact of digital transformation on governmental efficiency. *Technological Forecasting and Social Change*, 208, 123722. <https://doi.org/10.1016/j.techfore.2024.123722>