Article

Assessing the Barriers to E-Governance implementation in promoting effective Service Delivery in Dunukofia and Oyi Local Government Areas of Anambra State Nigeria.

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Abstract

Digital technologies are reshaping public administration, promising greater efficiency, transparency, and citizen engagement. Yet, their adoption remains uneven, particularly in rural local governments where structural and human factors pose significant challenges. This study investigated the barriers to e-governance implementation in promoting effective service delivery in Dunukofia and Oyi Local Government Areas of Anambra State, Nigeria. Guided by the Digital Divide Theory, which emphasizes disparities in access and skills as determinants of ICT adoption, the research employs a mixed-method design to capture both quantitative and qualitative dimensions. The study population consisted of all 308 employees of the two council secretariats, with a census survey conducted using structured questionnaires on a five-point Likert scale. In addition, twelve senior staff members were purposively selected for in-depth interviews to provide experiential insights. Instrument validity was established through expert review, and reliability confirmed via pilot testing with Cronbach's Alpha exceeding the acceptable threshold. Quantitative data were analyzed using descriptive statistics in SPSS, while qualitative data were transcribed and textually interpreted. Findings revealed that e-governance effectiveness is constrained by insufficient digital skills among staff, limited citizen technological exposure, inadequate infrastructure, unreliable connectivity, and weak political commitment. These barriers contribute to operational delays and suboptimal service delivery. The study concludes that bridging digital gaps through targeted training, robust ICT infrastructure, proactive leadership, and community sensitization is essential for realizing the potential of e-governance. It recommended regular staff capacity-building programs, investment in technological infrastructure, policy-driven digital adoption, and citizen awareness campaigns to enhance service delivery outcomes in the studied local governments.

Keywords: E-governance, Local Government, Information and Communication Technologies (ICTs), Digital, Service Delivery

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Introduction

Governance in the contemporary era has undergone profound transformation with the increasing integration of information and communication technologies (ICTs) into public administration. Globally, governments now rely on digital tools to enhance efficiency, transparency, and citizen participation in governance processes. This shift reflects a broader recognition of ICT as a critical driver of socio-economic development and institutional effectiveness. At the continental level, the African Union's Digital Transformation Strategy for Africa (2020–2030) underscores the role of digital governance in promoting inclusive growth, accountability, and improved service delivery, particularly within developing economies where governance challenges remain pronounced (African Union, 2020).

The application of ICT to governance, commonly referred to as e-governance, represents a reform-oriented approach to public administration. E-governance involves the use of digital platforms such as websites, emails, social media, and other online tools to facilitate interaction between government and stakeholders without the constraints of physical contact. It encompasses various dimensions, including Government-to-Citizen, Government-to-Business, Government-to-Government, and Government-to-Employee interactions, all aimed at improving information flow and service efficiency (Lawan & Muhammad, 2018; Oyewole & Adetimehin, 2024). Despite its transformative potential, the adoption and effectiveness of e-governance differ widely across regions, largely due to disparities in infrastructure, institutional capacity, and socio-economic conditions.

In Nigeria, efforts to institutionalize e-governance gained momentum with the introduction of the National e-Government Master Plan in 2015, which sought to harness ICT for public sector reform, enhanced transparency, and improved service delivery (Federal Ministry of Communications and Digital Economy, 2019). The country's expanding digital infrastructure, marked by over 142 million active internet subscriptions and growing broadband coverage, suggests an improving environment for digital governance initiatives (Jaiyeola, 2025). Furthermore, the COVID-19 pandemic highlighted the practical relevance of e-governance, as digital platforms became indispensable for maintaining government operations, disseminating information, and coordinating public services during periods of restricted physical interaction (Ukwuoma, Elisha, & Oye, 2022; Roztocki, Strzelczyk, & Weistroffer, 2024).

Local governments occupy a strategic position within Nigeria's federal system, serving as the closest tier of government to the people and bearing responsibility for essential services such as primary healthcare, basic education, and rural infrastructure development (Adie & Anam, 2024). Their proximity to citizens makes them a crucial platform for implementing e-governance initiatives that can enhance responsiveness and accountability. However, the experience across Nigerian local governments has been uneven. In Anambra State, particularly in predominantly rural local government areas such as Dunukofia and Oyi, challenges related to infrastructure, technical capacity, and digital inclusion continue to shape the pace and quality of e-governance adoption, raising concerns about equitable access to digitally enabled public services.

Despite the growing recognition of e-governance as a tool for effective service delivery, significant gaps persist between policy intentions and practical outcomes at the grassroots level. Nigeria's low ranking on global e-governance and e-participation indices reflects persistent structural and institutional barriers that undermine the realization of digital governance benefits, especially in rural and semi-urban areas (United Nations, 2024; Ijeoma, Onuora, & David, 2024). In Dunukofia and Oyi Local Government Areas, traditional administrative practices are still prevalent. This necessitates a systematic assessment of the barriers to e-governance implementation and their implications for service delivery, thereby providing the justification for this study.

LITERATURE REVIEW

E-Governance

A clear understanding of the concept of governance is fundamental to any meaningful exploration of e-governance, as electronic governance represents not a departure from governance itself but an extension of its structures, principles, and processes through digital technologies. Governance has been widely conceptualised as a system through which authority is exercised and collective goals are pursued. Fourie and Jordan (2017) described governance as the framework of control, decision-making, and accountability that enables organisations to achieve set objectives, while Eke, Ugwuibe, and Olise (2019) extended this understanding by linking governance to broader ideals of good government and public accountability. From a historical standpoint, Rahaman (2024) traced governance to classical notions of steering society toward collective welfare, emphasising its normative foundations rooted in law, institutions, and societal resources. Taken together, these perspectives present governance as a multifaceted construct that combines administrative mechanisms with ethical and societal responsibilities. However, the increasing pace of globalisation and rapid advancements in information and communication technology (ICT) have altered traditional governance practices, creating pressure for more responsive, transparent, and technology-enabled systems of administration. This shift laid the foundation for the emergence of electronic governance, commonly referred to as e-governance.

E-governance has also been framed in the literature as a reform-oriented application of technology to public administration. Thabit and Yaser (2019) viewed it as the ethical and transparent use of electronic tools to manage government affairs and achieve policy objectives, while Lawan and Muhammad (2018) emphasised its role in improving service delivery, information sharing, and citizen engagement through digital platforms such as e-taxation and electronic payment systems. These perspectives largely reflect a managerial orientation, presenting e-governance as a means of enhancing efficiency, reducing corruption, and streamlining bureaucratic processes. Within this view, technology functions as an instrument for modernising existing governance structures rather than fundamentally altering them.

Beyond efficiency gains, some scholars conceptualised e-governance as a mechanism for service delivery and citizen empowerment. Almutairi, Thurasamy, and Yeap (2020) defined it as the digital provision of public services and information that enables greater public participation in governance. Similarly, Chukwuemeka, Ubochi, and Okechukwu (2017), ElAmrani and Louhmadi (2019), and Omebe (2019) highlighted its role in facilitating effective interaction between government institutions and citizens. Other scholars, including Ahmed (2018), Anak (2020), Ata-Agboni and Olufemi (2021), and Akpan, Dung, and Ibegbulam (2020), expanded this scope by noting that e-governance extends beyond internet-based platforms to include mobile phones, SMS, and broadcast media. These varying perspectives of scholars collectively suggest that e-governance represents a holistic integration of ICT into both internal governmental operations and external service delivery, with the potential to strengthen inclusion and access.

A more transformative strand of the literature views e-governance as a catalyst for institutional and societal change. Onuigbo and Eme (2015) distinguished e-governance from e-government by arguing that it encompasses changes in leadership styles, decision-making processes, and democratic engagement, rather than mere automation of services. Nwanisobi and Christopher (2020) reinforced this position by linking e-governance to public sector modernisation and collaborative governance. Typologies proposed by Oyewole and Adetimehin (2024), alongside the participatory emphasis of Isah, Chiroma, and Dance (2024), further illustrate how ICT reshapes interactions between government, citizens, businesses, and public employees. Despite broad consensus that e-governance enhances transparency, accountability, and participation, the literature also reveals a persistent gap between its theoretical promise and practical outcomes, particularly in developing contexts. This disconnect underscores the

problem that necessitates the present study: the need to critically examine how e-governance is conceptualised and implemented, and why its transformative potential often remains underutilised despite widespread adoption efforts.

Service Delivery

The concept of service delivery has attracted sustained scholarly attention, particularly within public administration and governance studies, where it is closely linked to the responsibilities of the state toward its citizens. Scholars such as Chukwuemeka, Ubochi and Okechukwu (2017) conceptualise service delivery as the degree to which government institutions effectively carry out their statutory mandates in pursuit of organisational and national goals. This understanding positions service delivery as a measurable outcome of institutional performance and accountability. In a related vein, Chukwuemeka, Okeke and Onwuchekwa (2018) argue that the quality of public service delivery serves as a barometer for good governance, noting that deficiencies in service provision contribute significantly to weak governance ratings, particularly in developing contexts. These perspectives collectively frame service delivery as a goal-oriented and performance-driven process that reflects the capacity of government institutions to respond to public needs.

Building on this functional orientation, Isah, Chiroma and Dance (2024) emphasise service delivery in terms of productivity, outputs and performance of individuals and departments relative to available resources and set objectives. This approach reinforces efficiency and effectiveness as central criteria for evaluating service delivery outcomes. However, the discourse has evolved to recognise the changing modalities of service provision. Sodhi (2016) highlights the role of Information and Communication Technologies (ICT) in transforming traditional service delivery systems, enabling governments to decentralise services beyond physical offices and bring them closer to citizens. This technological perspective expands earlier definitions by introducing accessibility and innovation as critical dimensions of service delivery, suggesting that how services are delivered is as important as the outcomes achieved.

Beyond performance and technology, other scholars foreground the relational and legal foundations of service delivery. Carlson, Davis, and Leach (2005, as cited in Ajibade, Ibietan & Ayelabola, 2017) describe service delivery as the interaction between policymakers, service providers, and citizens, encompassing both the services themselves and the systems that support them. From this viewpoint, service delivery embodies the state's obligation to provide public goods such as infrastructure, education, healthcare, and security. Complementing this relational stance, Yayale (2004, as cited in Ajibade et al., 2017) frames service delivery as a contractual responsibility, where governments are bound to provide services of acceptable quality to the populace. These perspectives shift attention from internal organisational performance to mutual obligations, trust and accountability between the state and society.

Other contributions focus on the substance and mechanisms of service delivery. Badmus (2017), Idea Group Incorporation Global (as cited in Omodero & Dandago, 2019), and Olalekan and Oludare (2017) emphasise the provision of tangible social amenities and public utilities as the core of service delivery. Akpan, Dung and Ibegbulam (2020) further distinguish between direct government provision and indirect delivery through third parties, while Ndema (2022) stresses efficiency and timeliness in meeting citizens' needs. More recently, Ijeoma, Onuora and David (2024) advance a citizen-centred framework that prioritises accessibility, responsiveness, quality, and satisfaction as benchmarks of effective service delivery. Despite broad agreement on its importance for governance legitimacy and democratic stability, persistent gaps in efficiency, accessibility and citizen satisfaction continue to characterise public service delivery in many contexts. These challenges underscore the problem that necessitated this study, namely the need to better understand and improve service delivery systems to enhance governance outcomes and public trust.

Challenges of E-Governance in Promoting Service Delivery at the Local Government Level

E-governance has been widely recognised in the literature as a strategic instrument for improving public service delivery through enhanced efficiency, transparency, and accessibility, particularly at the local government level. However, studies focusing on developing countries reveal that the practical realisation of these benefits remains constrained by numerous structural, institutional, and socio-cultural challenges. Rather than functioning as a seamless solution, e-governance at the grassroots often exposes deep-rooted weaknesses in governance systems, particularly in contexts marked by limited resources and uneven technological development (Dike, 2019).

One of the most frequently cited challenges is the issue of trust and resistance to change. Dike (2019) argues that trust is foundational to the success of e-governance, as citizens must have confidence in both the digital platforms and the institutions deploying them. Resistance to digital systems is often explained through innovation diffusion theory, which interprets reluctance as a behavioural response to unfamiliar technologies. This resistance is not limited to citizens alone but also affects public servants who may perceive e-governance as a threat to established routines or job security. Consequently, investments in technology without parallel efforts to address attitudinal and cultural concerns are unlikely to yield meaningful improvements in service delivery.

Extending this discussion, Mudi, Abiso, Galtimari, and Musami (2023) conceptualise e-governance challenges within organisational, collaborative, and capacity-related dimensions. They highlight resistance to change among employees and citizens as a persistent obstacle, often driven by fear of redundancy and inadequate ICT competence. Beyond individual resistance, the authors emphasise weak collaboration among key stakeholders, noting that the absence of effective partnerships between government, the private sector, and academic institutions undermines infrastructure development, skills acquisition, and data sharing. This systemic perspective suggests that sustainable e-governance requires institutional coordination rather than isolated technological interventions.

Closely linked to resistance and collaboration deficits is the problem of low awareness and inadequate ICT literacy among citizens. Mudi et al. (2023) observe that limited understanding of available e-governance services significantly reduces citizen engagement, even where digital platforms exist. Awareness is framed as a socio-cognitive factor that shapes perceptions of relevance and usefulness. Moreover, the distinction between basic ICT literacy and information security literacy is critical, as users must not only know how to access digital services but also how to protect themselves from data breaches and misuse. Without these competencies, citizen participation in e-governance remains shallow and uneven.

Infrastructure-related constraints also dominate the literature on e-governance at the local government level. Ajibade, Ibietan, and Ayelabola (2017) identify unreliable electricity supply and poor telecommunications networks as major impediments, particularly in rural areas. These infrastructural deficiencies increase operational costs and disrupt service delivery, rendering digital systems unreliable. The authors further highlight shortages of skilled ICT personnel, reinforcing the argument that both physical infrastructure and human capacity, the "hardware" and "software" of e-governance, must develop simultaneously to ensure functional service delivery (Obodo & Anigbata, 2018).

Beyond infrastructure, the contextual incompatibility of many e-governance initiatives has also been highlighted. Nwanisobi and Christopher (2020) argue that the wholesale transfer of ICT systems designed for Western contexts often ignores local socio-cultural realities in Nigeria. Factors such as literacy levels, age, gender, and social exclusion shape how citizens interact with technology, yet these are rarely incorporated into system design. In addition, weak regulatory frameworks, transparency deficits, and lingering trust issues further complicate implementation. This perspective underscores that e-governance is deeply embedded in social and political contexts rather than being a neutral technological fix.

The persistence of corruption within digitised systems presents another critical challenge. Lawan, Ajadi, Kayode, and Yaru (2020) demonstrate that outdated hardware, unstable power supply, and lack of local technical support undermine system reliability. More importantly, they caution that e-governance does not automatically eliminate corruption, as staff may manipulate digital platforms for personal benefit. This finding challenges the optimistic assumptions about technology-driven accountability and suggests that without complementary governance and ethical reforms, e-governance may merely replicate existing inefficiencies in digital form.

Political will and policy commitment are also central themes in the literature. Onuigbo and Eme (2015) contend that weak regulatory environments and low prioritisation of e-governance initiatives have stalled progress in many developing countries. Their analysis shows that inadequate resource allocation, poor inter-agency collaboration, and lack of long-term planning often stem from limited political commitment. Similarly, Abah and Nwokwu (2019) attribute Nigeria's slow e-governance development to sustained political inertia since the introduction of the policy in 2001, reinforcing the argument that government credibility and consistency are crucial for building both institutional capacity and public trust.

Empirical studies further validate these challenges at the local government level. Dibie and Quadri (2019), in their study of southern Nigeria, found that improvements in service delivery were limited and not directly attributable to the national e-governance policy. Key constraints included inadequate infrastructure, low ICT skills, resistance to change, weak inter-departmental collaboration, and ineffective policy frameworks. Similarly, Omowunmi and Siyanbola (2022) reported limited ICT access and high digital illiteracy among local government staff in rural areas, despite federal initiatives to bridge the digital divide. While these studies provide valuable insights into broad national and regional trends, they do not sufficiently capture the specific contextual barriers faced by individual local government areas.

Overall, academic literature has revealed a convergence of challenges, ranging from infrastructural deficits and skill shortages to trust, corruption, weak political will, and contextual misalignment, that collectively undermine the effectiveness of e-governance in enhancing service delivery at the local level. However, a notable gap remains in context-specific empirical analyses that focus local government areas, especially Dunukofia and Oyi Local Government Areas of Anambra State and compare their unique barriers. This study seeks to fill this gap by assessing the barriers to e-governance implementation in promoting effective service delivery in Dunukofia and Oyi Local Government Areas, thereby contributing localized evidence to inform more responsive and sustainable e-governance strategies.

THEORETICAL FRAMEWORK

This study adopted Digital Divide Theory as an analytical framework. The theory was propounded by a prominently by the Dutch sociologist A.G.M. van Dijk, was systematically articulated in his seminal work *The Deepening Divide: Inequality in the Information Society* (van Dijk, 2005). The theory explains persistent inequalities in access to, use of, and benefits derived from information and communication technologies (ICTs), arguing that digital inequality is rooted in pre-existing social and economic stratification rather than technology itself. As an interdisciplinary framework emerging around the year 2000, Digital Divide Theory draws from communication studies, sociology, psychology, economics, and education, evolving from descriptive accounts of access gaps toward more analytical examinations of social and behavioral impacts of digital inequality (van Dijk, 2017).

Van Dijk's core argument is that disparities in income, education, occupation, age, gender, and health shape individuals' access to resources such as time, money, skills, knowledge, and social networks, which in turn determine levels of digital access, skills acquisition, and meaningful usage (van Dijk, 2005; Pick & Sarkar, 2016).

The theory identifies a progression from first-level divides (physical access), to second-level divides (skills, usage, and digital literacy), and ultimately to outcome-level divides, where unequal digital participation reinforces broader social and economic inequalities, creating a cumulative and self-reinforcing cycle of disadvantage (van Dijk, 2017; Pick & Sarkar, 2016). Key principles of the theory emphasize that digital inequality manifests across multiple dimensions – information accessibility, information utilization, and information receptiveness, and that effective participation in the information society depends not merely on access to technology but on the ability and willingness to interpret, apply, and benefit from digital information (Communication Theory, 2016).

The digital divide theory is particularly relevant to governance and development contexts, as it explains why technological interventions such as e-governance may fail to enhance service delivery when economic deprivation, low literacy, and limited digital skills persist, especially in regions of Africa and South Asia (Communication Theory, 2016; Pick & Sarkar, 2016). However, the digital divide theory has been criticised for overstating the role of technology in development, suggesting that traditional factors such as industrialization and economic growth are more decisive, and that narrowing access gaps signal a shift from a digital divide to a broader knowledge or production divide (Communication Theory, 2016). Despite the criticism, the theory continues to be relevant in explaining how unequal digital engagement shapes social, economic, and governance outcomes (van Dijk, 2017).

Drawing on van Dijk's framework, the study argues that disparities in income, education, digital skills, and access to ICT infrastructure among local government staff and citizens constrain not only physical access to e-governance platforms but also their effective use and the benefits derived from them. These first, second, and outcome-level digital divides limit meaningful participation in digital governance processes, weaken service accessibility, and reduce the efficiency and responsiveness of public services. Consequently, the persistence of digital inequality reinforces existing governance and service delivery gaps, demonstrating that e-governance reforms at the local level cannot achieve their intended outcomes without addressing underlying structural and capacity-related divides.

METHODOLOGY

The study employed a mixed-method research design, integrating quantitative and qualitative approaches to provide a comprehensive understanding of how e-governance affects service delivery in Dunukofia and Oyi Local Government Areas. This design was appropriate because it allowed the study to generate measurable evidence through structured questionnaires while also capturing deeper, experience-based insights through in-depth interviews. The study population comprised all 308 employees of the two local government council secretariats, 143 from Dunukofia and 165 from Oyi, making a census survey both feasible and methodologically sound, as it ensured full population coverage and eliminated sampling bias. In addition, twelve senior staff members (six from each council), each with a minimum of seven years of service, were purposively selected for interviews to provide informed and experience-rich perspectives that complemented the survey data.

Data collection relied on researcher-developed instruments to ensure alignment with the study objectives. The quantitative data were gathered using a structured questionnaire organized into demographic and thematic sections and measured on a five-point Likert scale, allowing for standardized responses and statistical analysis. Trained research assistants supported data collection to enhance accuracy and efficiency. Qualitative data were obtained through face-to-face interviews guided by an in-depth interview schedule, with responses transcribed to preserve meaning and context. Instrument validity was ensured through expert review, while reliability was established using a pilot test and Cronbach's Alpha coefficients exceeding the accepted threshold. Quantitative data were analysed using SPSS version 23, employing descriptive statistics and mean-based decision rules to systematically interpret responses, thereby ensuring that findings were both reliable and analytically robust.

ANALYSIS OF DATA

Questionnaire Distribution and Return Rate

The distribution and retrieval of the survey questionnaires were systematically analysed to determine the level of response achieved and to assess the adequacy of the data collected for the study. This analysis provides a clear account of the number of questionnaires administered to respondents, the proportion successfully retrieved, and those that were not returned, thereby establishing the reliability and representativeness of the survey data used for subsequent analysis.

Table 1: Questionnaire distributed and retrieved at Dunukofia and Oyi Local Government Councils Secretariat

Local Government Council Secretariat	Questionnaires Distributed	Questionnaires Retrieved	Percentage Return Rate (%)
Dunukofia	143	139	97.2%
Oyi	165	147	89.1%
Total / Overall	**308**	**286**	**92.9%**

Source: Field Survey (2025)

Table 1 presents data on the distribution and retrieval of questionnaires across two Local Government Council Secretariats. Out of a total of 308 questionnaires distributed, 286 were successfully retrieved, representing an overall return rate of 92.9 per cent. Dunukofia recorded the highest response rate of 97.2 per cent, with 139 out of 143 questionnaires returned, while Oyi followed with an 89.1 per cent return rate, retrieving 147 out of 165 distributed. These figures indicate a strong level of participation and reliability of the responses obtained for the study.

Respondents' Demographic Information

The respondents' demographic information comprising of the gender, age, marital status, level of education, and years in service are presented below:

Table 2: Demographic characteristic of respondents

Category	Sub-category	Frequency	Percent (%)	Cumulative Percent (%)
Gender	Male	132	46.0	46.0
	Female	155	54.0	100.0
Total		**287**	**100.0**	**100.0**
Age	20–30 years	94	32.8	32.8
	31–40 years	117	40.8	73.5
	41–50 years	50	17.4	90.9
	51 years and above	26	9.1	100.0
Total		**287**	**100.0**	**100.0**
Marital Status	Single	68	23.7	23.7

Category	Sub-category	Frequency	Percent (%)	Cumulative Percent (%)
	Married	155	54.0	77.7
	Divorced	26	9.1	86.8
	Widowed	38	13.2	100.0
Total		**287**	**100.0**	**100.0**
Education Level	WASSC	71	24.7	24.7
	ND/NCE	121	42.2	66.9
	HND/Bachelor's	68	23.7	90.6
	Postgraduate	27	9.4	100.0
Total		**287**	**100.0**	**100.0**
Years in Service	0–5 years	102	35.5	35.5
	6–10 years	119	41.5	77.0
	11–15 years	62	21.6	98.6
	16 years and above	4	1.4	100.0
Total		**287**	**100.0**	**100.0**

Source: Field Survey (2025)

Table 2 reveals the respondents' demographic profile, showing a workforce with a slight female majority, as women accounted for 54 percent of the sample compared to 46 percent men. The age distribution shows that most participants were between 31 and 40 years (40.8 percent), followed by those aged 20–30 years (32.8 percent). More than half of the respondents were married (54 percent), while just under a quarter (23.7 percent) were single. Educationally, the largest proportion held ND or NCE qualifications (42.2 percent), with comparable shares having WASSC (24.7 percent) and HND or bachelor's degrees (23.7 percent). In terms of work experience, the majority had served for six to ten years (41.5 percent), indicating a relatively experienced group. Taken together, these characteristics suggest that the respondents were largely female, married, moderately educated, and possessed a reasonable level of professional experience.

Research Question: What are the digital barriers hindering effective service delivery in Dunukofia and Oyi Local Government Areas?

Table 3: Mean and standard deviation scores on the digital barriers hindering effective service delivery in Dunukofia and Oyi Local Government Areas

S/N	Item	SA	A	N	D	SD	Total (N)	Mean	SD	Remark
1	Many employees of the local government lack adequate skills on how to operate modern digital tools	85	133	57	4	8	287	3.99	0.90	Agree
2	Many of the residents of the local government are rural people who do not have adequate knowledge of modern technology	65	169	38	3	12	287	3.95	0.88	Agree

3	The local government lack the needed digital infrastructure such as good internet network	77	137	57	4	12	287	3.92	0.95	Agree
4	Political leaders are not willing to adopt e-governance because of the financial benefit they gain from manual operations	85	139	52	8	3	287	4.03	0.83	Agree
5	Employees' lack of adequate digital skills results to delays in the delivery of essential services to the public	105	145	22	11	4	287	4.17	0.83	Agree
6	Residents without adequate technology knowledge struggle to access online government services	78	131	52	15	11	287	3.87	1.00	Agree
7	Unstable internet network limits citizens' access to online services of the local government	95	143	44	3	2	287	4.14	0.76	Agree
8	Political leaders' resistance to use of technology for governance because of personal gain slows down services at the local government	70	161	44	7	5	287	3.99	0.81	Agree
	Cluster Mean							**4.00**	**0.88**	**Agree**

Source: Field Survey (2025)

Table 3 presents the mean and standard deviation results on digital challenges affecting effective service delivery in Dunukofia and Oyi Local Government Areas. The findings show that mean values for the items fall between 3.87 and 4.17, reflecting a consensus among respondents that digital-related obstacles have a considerable impact on service delivery. The item with the highest mean score (4.17) indicates that insufficient digital competence among employees contributes significantly to delays in service provision, identifying it as the most critical challenge. In contrast, the lowest mean score (3.87) relates to difficulties faced by residents in accessing online government services, although respondents still largely agreed on its impact. The standard deviation values, which range from 0.76 to 1.00, suggest a moderate degree of agreement across responses. Collectively, the overall mean score of 4.00 and standard deviation of 0.88 confirm that digital barriers, especially limited skills, inadequate infrastructure, and reluctance to adopt new technologies, remain key impediments to effective service delivery in both local government areas.

DISCUSSION OF FINDINGS

The study's findings on digital barriers to effective service delivery in Dunukofia and Oyi Local Government Areas indicate that insufficient digital competence among local government staff undermines their capacity to use modern technological tools efficiently, resulting in slow and delayed service provision. Furthermore, the predominantly rural nature of the population is associated with low levels of exposure to and understanding of modern technologies, which in turn limits citizens' ability to access and utilize online government services. This observation was also affirmed by one of the in-depth interview respondents.

> Many of us are still trying to get used to these digital systems. Some of my fellow staff, especially the one that are very much advanced in age find it difficult to operate computers or use smart phones. The case is different with younger staff like me because we are more conversant with these modern technologies and adapt faster. But the older ones are a bit resistant because they feel the old manual method is easier and more reliable (Female, 35, Staff, Oyi Local Government Council Secretariat, 2025).

Another IDI participant shared similar view:

> From my observation, the main problem is lack of proper training. The local government introduced some digital procedures, but there was no follow-up training for the staff. So, while a few people can use the systems well, others just struggle or ignore them completely. When there is no understanding, it's easy for people to resist change. They see the new method as an extra burden (Male, 41, Staff, Dunukofia Local Government Council Secretariat, 2025).

Inadequate digital infrastructure, especially inconsistent and unreliable internet access, emerged as a significant barrier to effective e-governance implementation. These technical limitations are further exacerbated by the unwillingness of some political leaders to embrace digital systems, a resistance frequently linked to personal financial incentives associated with preserving manual and non-transparent administrative processes.

> The obstacles to e-governance here are many, but the most serious ones are poor internet network service and lack of political will. We do not have a strong internet connection here; sometimes, you must use your personal data to get anything done because the political leaders in charge did not make any provision for that. Then again, most of our leaders are not encouraging us to use digital tools. They still prefer the old manual ways of doing things because it gives room for certain interests to be protected. These issues affect our work a lot, records are delayed and communication among departments is slow (Female, 38, Staff, Oyi Local Government Council Secretariat, 2025).

Furthermore, the findings from the third hypothesis test demonstrate a significant association between weak digital competence and poor service delivery at the local government level. The statistical evidence shows that inadequate digital skills and insufficient training in the use of ICT tools among government personnel and citizens contribute directly to operational delays and inefficiencies. This result is consistent with earlier studies, including Okeke and Chukwuemeka (2018), who observed that while e-governance has the potential to enhance service quality and employee participation, its effectiveness is constrained by weak policy support and low levels of digital preparedness. Likewise, Dibie and Quadri (2019) identified inadequate infrastructure, limited ICT literacy, and ineffective policy execution as critical impediments to successful e-governance in local governments. Supporting these conclusions, Omowunmi and Siyanbola (2022) found that poor availability of ICT resources and widespread digital illiteracy among local government staff reduced service efficiency, while Oyewole and Adetimehin (2024) emphasized challenges such as unreliable electricity supply, weak internet access, and resistance to technological change among staff. Collectively, these findings underscore the necessity of closing digital skill and infrastructure gaps to improve service delivery and strengthen local governance performance.

CONCLUSION

This study has established that the effectiveness of e-governance in Dunukofia and Oyi Local Government Areas is significantly constrained by a combination of human, technical, and institutional factors. Insufficient digital competence among staff, particularly older personnel, coupled with limited exposure to technology among rural citizens, impedes the efficient use of digital tools and access to online services. These challenges are further compounded by inadequate digital infrastructure, unreliable internet connectivity, and a lack of political commitment to fully embrace e-governance initiatives. Empirical evidence from both qualitative interviews and statistical analysis confirms that weak digital skills and insufficient training directly contribute to operational delays and poor service delivery. Consistent with previous studies, these findings underscore the urgent need for targeted capacity-building programs, robust ICT infrastructure, and proactive leadership to bridge digital gaps and enhance the performance of local government service delivery.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are suggested:

1. Local government authorities in Anambra State and Nigeria in general should organize regular, hands-on ICT training programmes for staff, with special focus on older employees and those less familiar with technology. Such continuous professional development will reduce resistance and improve competence, ensuring that all personnel can effectively use e-governance tools. Partnerships with educational institutions or ICT consultants could support these training initiatives.
2. The Anambra State Government and other state governments in Nigeria in partnership with the leadership of various local government councils must prioritize the provision of reliable internet connectivity, electricity, and adequate hardware in local government offices. Investment into these robust technological infrastructure will minimize operational delays and enable smoother online service delivery. This includes setting up backup systems to prevent disruptions.
3. Local government leadership in Anambra State and across Nigeria should actively endorse and promote the adoption of digital systems, discouraging reliance on manual processes for personal gain. Clear policies mandating the use of e-governance tools, coupled with monitoring mechanisms, can encourage staff compliance, and enhance transparency. Political will is crucial for sustaining these reforms.
4. Local governments authorities in Anambra State and across Nigeria should frequently carry out community outreach and awareness campaigns to improve citizens' understanding of e-governance platforms. Collaboration with civil society organizations can help broaden outreach.

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