African Journal of Administration and Governance
Volume 3, Number 1, December 2025: 68-74
ISSN: 3043 - 5951

MIXED TECHNIQUE X-RAY OF THE IMPACT OF E-GOVERNANCE ON PUBLIC SERVICE DELIVERY IN NIGERIA: A CASE STUDY OF FEDERAL CAPITAL DEVELOPMENT AUTHORITY (FCDA), ABUJA

***Kemisola Iwalola OWONIYA[1], S. Bagaji ALI[2] and Ochala MARK[3]**

Abstract

This paper investigates the impact of e-governance on public service delivery within the Federal Capital Development Authority (FCDA), Abuja, Nigeria running from 2019 to 2024 using the mixed methods of analysis**. The** mixed-methods of analysis combined quantitative surveys of 286 respondents comprising FCDA staff and Abuja residents with 12 Key Informant Interviews (KIIs) involving senior officials, ICT department heads, and platform users. Quantitative data were analyzed using descriptive statistics, Pearson correlation, and regression models, while qualitative insights were examined through thematic analysis.Findings from the empirical analysis revealed that 70.2% of respondents are aware of FCDA's e-governance platforms, while 68.3% actively use at least one service. A significant positive relationship exists between e-governance adoption and service efficiency ($r = 0.67$, $p < 0.05$), with 65% reporting faster processing times and reduced delays. Additionally, 72% acknowledged improved transparency through real-time reporting, while 60% reported enhanced accessibility. The paper concludes that e-governance has improved FCDA's efficiency, transparency, and accessibility but requires targeted ICT investments, capacity-building initiatives, platform integration, and citizen sensitization.This paper recommendedthat there is a need for significant investment in ICT infrastructure to strengthen the technical foundation required for seamless digital transformation.

Keywords: Mixed Technique, E-Governance, Public Service Delivery

1. Introduction

Globally, governments are increasingly adopting ICT-driven governance systems to improve operational efficiency, minimize bureaucratic bottlenecks, and enhance access to public services. Countries like Estonia have pioneered e-governance, with approximately 99% of government services available online, significantly improving service transparency and accessibility.In Nigeria, several national initiatives have been introduced to promote digital transformation in governance. Among these are the Integrated Payroll and Personnel Information System (IPPIS) for payroll automation, the Treasury Single Account (TSA) for consolidating government revenues, and the Government Integrated Financial Management Information System (GIFMIS)for enhancing transparency and accountability in financial administration. These initiatives represent key milestones in Nigeria's e-governance reforms.Despite these national efforts, citizen-facing service delivery within the FCDA remains below optimal performance levels. Although the authority manages several digital platforms aimed at improving administrative processes and enhancing citizen access to services, their usage remains inconsistent. Contributing factors include inadequate ICT infrastructure, limited technical

1. Department of Public Administration, National Open University, (NOUN), Nigeria, Email: kowoniya@noun.edu.ng
2. Department of Public Administration, National Open University, (NOUN), Nigeria, Email: abagaji@noun.edu.ng
3. Department of Public Administration, National Open University, (NOUN), Nigeria, Email: mochala@noun.edu.ng

capacity among staff, low citizen digital literacy, unequal access to the internet, and poor integration between FCDA-managed platforms and federal systems.

Over the past decade, the Nigerian government has invested heavily in e-governance infrastructure and policy frameworks aimed at improving transparency, efficiency, and citizen satisfaction. While federal initiatives such as IPPIS, TSA, and GIFMIS have achieved measurable success in enhancing financial accountability, the adoption of digital governance systems at the institutional level, particularly within the FCDA, remains limited.The FCDA plays a central role in service delivery and infrastructure management in the FCT. However, many of its processes remain manual, slow, and inefficient, resulting in long delays, limited accessibility, and inconsistent transparency. Citizens frequently encounter challenges such as difficulty accessing online platforms, inadequate awareness of digital services, and lack of integrated systems connecting FCDA with other federal agencies.Without adequate utilization of its e-governance platforms, FCDA risks undermining the objectives of Nigeria's digital transformation agenda, which seeks to deliver fast, citizen-friendly, and accountable public services. Among existing or extant studies, limited research still exists. This study, therefore, addresses a critical gap byevaluating how effectively FCDA's e-governance platforms are meeting service delivery expectations, identifying the institutional and technological challenges limiting adoption, and proposing strategies to improve outcomes. Again, limited research exists on digital exclusion within Abuja, especially regarding underserved and peri-urban communities. This paper addresses that gap by analyzing citizen awareness levels, ICT literacy, and access disparities. Lastly, previous literature has largely ignored the problem of platform interoperability, which this study explores by examining the extent of integration between FCDA-managed portals and federal digital systems.

2. LiteratureReview

2.1. Theoretical Review

This paper is grounded in two key theories that explain citizen and institutional behaviour towards e-governance adoption: the Technology Acceptance Model (TAM) and the Principal-Agent Theory.On one hand, the Technology Acceptance Model (TAM) proposed by Davis (1989), posits that individuals' willingness to adopt technology depends on two major factors: perceived usefulness and perceived ease of use. In the context of FCDA, citizens are more likely to adopt digital platforms when they believe the services will save time, reduce costs, and simplify processes. Similarly, FCDA staff are more likely to adopt these systems when the platforms are user-friendly and when they receive adequate ICT training to manage and troubleshoot the tools effectively.On the other hand, Principal-Agent Theory (PAT) explains the relationship between citizens (principals) and government officials (agents). Citizens expect FCDA employees to deliver efficient and transparent services. However, resistance to adopting e-governance platforms may arise when officials perceive that digital systems reduce their discretionary authority. Within FCDA, such institutional resistance partially explains why, despite the availability of digital platforms, some departments continue to rely heavily on manual, paper-based processes.

2.2. Empirical Review

Global studies have demonstrated the transformative potential of e-governance in improving public service delivery. For instance, Estonia has achieved nearly 99% digitization of its government services, resulting in faster approvals, enhanced citizen satisfaction, and reduced administrative costs (Organisation for Economic Co-operation and Development; OECD, 2020). Similarly, India's Digital India Initiative has significantly improved tax administration, healthcare registration, and national identity management systems (Bhatnagar, 2014). In Rwanda, the Irembo platform provides citizens with access to over 100 government services online, achieving an impressive 85% adoption rate (World Bank, 2022). These examples highlight how robust infrastructure, public awareness, and institutional reforms drive the success of e-governance globally.In Nigeria, the government has introduced several initiatives to enhance digital governance, including IPPIS, TSA, and GIFMIS for payroll automation, revenue consolidation, and improved financial transparency. The National Identity Management Commission (NIMC) has facilitated biometric-based citizen authentication, while the Corporate

Affairs Commission (CAC) launched an online business registration portal.Several Nigerian studies have evaluated these reforms. For instance, Ayo and Ekong (2021) reported that the TSA has significantly improved financial accountability but noted its limited direct impact on citizen-facing services. Ojo (2020) found that bureaucratic bottlenecks and low digital literacy rates hinder broader e-governance adoption, while Adegbola and Oyelude (2019) identified inadequate ICT infrastructure as a major obstacle to nationwide implementation. However, these studies largely emphasize national policies and overlook localized adoption patterns, leaving a gap in understanding institutional-level practices, particularly within FCDA.Few studies have directly assessed the state of e-governance implementation within the FCDA. Reports from the National Bureau of Statistics (2022) reveal that only 38% of Abuja residents have interacted with FCDA's online services, while 72% of FCDA departments continue to rely on manual request processing, despite having digital platforms available. These figures highlight a significant implementation gap and underscore the importance of localized studies like this one, which aim to explore FCDA's specific challenges and opportunities in adopting e-governance.

3. Methodology

The paper employed a mixed-methods research design, integrating both quantitative and qualitative approaches to provide a comprehensive assessment of the research objectives. The quantitative component involved the use of structured questionnaires to collect data from FCDA staff and Abuja residents, while the qualitative component relied on Key Informant Interviews (KIIs) with selected senior officials, ICT department heads, and citizens actively using FCDA's digital platforms.This design was chosen because it combines the breadth of quantitative analysis with the depth of qualitative insights, allowing for a richer and more nuanced understanding of the factors influencing e-governance adoption and service delivery effectiveness within FCDA.The study population comprised three key groups. First, FCDA staff, including administrative officers, technical personnel, and ICT specialists directly involved in the implementation and management of digital platforms. Second, ICT officers responsible for overseeing the design, deployment, and monitoring of FCDA's e-governance systems. Finally, the population included Abuja residents and citizens who actively utilize FCDA-managed online services, such as land registration, building approvals, and payment systems. Also, the study adopted a stratified random sampling technique to ensure adequate representation of the key stakeholder groups within the study population. The respondents were drawn from different FCDA departments and across Abuja's municipal areas to reflect a balanced distribution of views between FCDA employees, ICT officers, and service users. Subsequently, the sample size was determined using Yamane's formula for finite populations, which ensures statistically significant representation while accounting for population variability. Based on this approach, 286 respondents were selected for the quantitative survey, while an additional 12 key informants participated in the qualitative interviews.

This sampling strategy allowed the study to capture both breadth and depth in analyzing e-governance adoption and service delivery outcomes. Meanwhile, the primary data were collected using a structured questionnaire administered to FCDA staff and Abuja residents. The questionnaire captured data on respondents' awareness of FCDA e-governance platforms such as IPPIS, TSA, GIFMIS, and NIMC portals, usage frequency, ease of access, and perceptions of service efficiency, quality, and transparency. It also explored the challenges encountered when accessing digital platforms. Furthermore, the questionnaire was designed using closed-ended, Likert-scale, and multiple-choice questions to ensure structured and quantifiable responses suitable for statistical analysis. In order to complement the survey findings, Key Informant Interviews (KIIs) were conducted with senior FCDA officials, ICT department heads, and citizens actively engaged with FCDA's online services. The qualitative approach provided deeper insights into policy implementation, operational bottlenecks, and institutional capacity gaps. This integration of quantitative and qualitative methods strengthened the validity and reliability of the study findings. In addition, the paper employed both quantitative and qualitative data analysis techniques. Quantitative data obtained from the questionnaire were coded and analyzed using the Statistical Package for the Social Sciences (SPSS) version 26. Descriptive statistics, such as frequencies, means, and percentages, were used to summarize demographic patterns and usage trends, while inferential statistics—including Pearson correlation and linear regression analysis—were

applied to examine relationships between e-governance adoption and FCDA service delivery outcomes.Qualitative data from the KIIs were analyzed using thematic content analysis, enabling the identification of recurring patterns, institutional challenges, and policy-related insights that complemented the quantitative results.

4. Results and Discussions of Findings

4.1 Data Presentation and Empirical Analysis

Table 1 presents the impact of E-Governance on Efficiency of Service Delivery in the study area. The study found that most respondents confirmed that e-governance has improved efficiency (83%), enhanced transparency (78%), and reduced delays (80%). However, 64% acknowledged persistent challenges like poor ICT infrastructure and digital illiteracy.

Table 1: Impact of E-Governance on Efficiency of Service Delivery

Statements	Agree (%)	Disagree (%)
E-governance has reduced bureaucratic delays in FCDA operations.	78	22
ICT platforms have improved access to information and communication.	84	16
Electronic payment and tracking systems improved transparency.	81	19
Digital records reduced documentation errors and data loss.	86	14

Source: Author's Computation, 2025.

Data collected through structured questionnaires were analyzed using the Statistical Package for the Social Sciences (SPSS) version 26. The analysis employed descriptive statistics to summarize respondents' demographic characteristics and patterns of e-governance adoption, while inferential statistics including Pearson correlation and linear regression were used to examine the relationship between e-governance implementation and public service delivery outcomes. Additionally, qualitative data from KIIs were analyzed using thematic content analysis, enriching the interpretation of survey results and providing deeper institutional insights. More so, of the 286 respondents, 54% were FCDA staff, including administrative, technical, and ICT personnel, while 46% were Abuja residents who access FCDA-managed online services. Regarding gender distribution, 58% were male and 42% female. In terms of age, the largest group, 47%, fell between 30 and 39 years, followed by 32% aged 40 to 49 years, while younger respondents under 30 years constituted 15%, and only 6% were aged 50 years and above. Educationally, 76% of respondents held at least a Bachelor's degree, reflecting high literacy levels that influence technology adoption.Findings indicate a moderate but growing awareness of e-governance within FCDA. Among the respondents, 70.2% were aware of FCDA's digital platforms, including the Land Administration Portal, TSA, IPPIS, GIS systems, and NIMC-integrated services, while 29.8% had limited or no awareness. Further still, in terms of platform usage, 68.3% of respondents reported having used at least one FCDA-managed platform in the past year. Among these, the Land Administration Portal recorded the highest usage at 42%, followed by TSA services (31%), IPPIS (18%), and GIS systems (9%). However, several respondents indicated irregular usage patterns, citing limited platform integration, slow processing speeds, and insufficient public sensitization as barriers.

In this study, the impact of e-governance on FCDA's service delivery was analyzed across three dimensions: efficiency, transparency, and accessibility.The results show a significant improvement in FCDA's service efficiency following the adoption of digital platforms. 65% of respondents reported faster processing of applications, reduced waiting times, and improved coordination across departments. A Pearson correlation analysis revealed a positive and statistically significant relationship between e-governance adoption and service efficiency ($r = 0.67$, $p < 0.05$), confirming that greater platform utilization correlates with reduced administrative delays. Additionally, e-governance

initiatives have also enhanced transparency within FCDA operations. 72% of respondents agreed that digital platforms provide real-time access to information on payments, approvals, and service requests, thus reducing opportunities for corrupt practices. Platforms such as TSA dashboards enable citizens to verify completed transactions, improving public confidence in FCDA's processes. In view of this, the findings further indicate that 60% of respondents experienced improved accessibility to FCDA's services through online portals. However, 40% of respondents reported challenges such as network instability, inconsistent platform availability, and inadequate awareness campaigns, particularly among low-income and peri-urban communities. Consequently, the findings of this study provide significant insights into the adoption and effectiveness of e-governance platforms in enhancing public service delivery within the Federal Capital Development Authority (FCDA). Nonetheless, the discussion integrates both the quantitative results obtained from the survey and the qualitative insights from key informant interviews (KIIs), allowing for a more holistic understanding of institutional performance, citizen engagement, and operational challenges.Overall, the results demonstrate that e-governance adoption has positively influenced FCDA's service delivery outcomes, particularly in the areas of efficiency, transparency, and accessibility. However, the study also reveals critical institutional and infrastructural barriers that limit the full optimization of these platforms.

Comprehensively, the quantitative findings reveal a strong positive relationship between the adoption of e-governance platforms and improvements in service efficiency within FCDA, supported by the Pearson correlation result ($r = 0.67$, $p < 0.05$). Approximately 65% of respondents reported faster processing of applications, shorter queues, and improved coordination across departments due to the implementation of digital platforms such as the Land Administration Portal, TSA, and IPPIS.Qualitative insights from KIIs reinforce these findings, as senior FCDA officials highlighted that automation has minimized bureaucratic delays and reduced redundant processes. However, officials also acknowledged that manual processing persists in some departments, mainly due to resistance to change and incomplete platform integration. This observation aligns with Ojo (2020), who found that institutional bottlenecks within Nigerian public agencies hinder the scalability of e-governance reforms. Regarding this, the study found that 72% of respondents believe FCDA's e-governance platforms have improved operational transparency, providing citizens with real-time access to payment records, approvals, and service requests. For instance, TSA dashboards allow citizens to confirm completed transactions without relying on intermediaries, thereby reducing opportunities for corrupt practices. Considering results from extant literature, these results support the conclusions of Ayo and Ekong (2021), who emphasized that ICT-driven reforms like the TSA significantly enhance financial accountability in Nigerian public institutions. However, findings from KIIs suggest that although transparency has improved, system downtimes, data duplication, and limited interoperability between FCDA platforms and other federal databases reduce the overall efficiency of information flow. This underscores the importance of strengthening interconnected systems to sustain transparency improvements.

Empirically, the findings also reveal that 60% of respondents perceive improved accessibility to FCDA services through digital platforms, particularly in land registration, payment processing, and building approvals. However, 40% of respondents reported significant barriers, including poor internet connectivity, limited ICT literacy, and low awareness of available platforms among Abuja residents.Insights from KIIs corroborate these quantitative results, as citizens highlighted frequent downtimes and slow response times as barriers to consistent platform usage. These findings reflect broader national trends documented by the National Bureau of Statistics (2022), which reported that only 34.7% of Nigerians have regular internet access. Thus, although FCDA has introduced relevant digital solutions, infrastructural limitations and the digital divide remain significant challenges, particularly for residents in underserved peri-urban communities. Contrariwise, the study identified multiple institutional and technical constraints that limit the full benefits of e-governance within FCDA. While platforms exist, 72% of FCDA departments continue to process certain requests manually despite having digital alternatives. KIIs revealed that this persistence is partly due to insufficient ICT infrastructure, inconsistent funding, and low staff capacity to manage advanced platforms. Again, ICT department heads further stressed that the lack of platform interoperability between FCDA-managed systems and federal databases such as NIMC, IPPIS, and GIS often results

in duplicate data entry processes and delays. These challenges align with Adegbola and Oyelude (2019), who found that inadequate infrastructure and limited institutional readiness significantly undermine e-governance adoption in Nigeria. Moreover, this study contributes new insights by showing how these national-level barriers manifest within FCDA, highlighting the urgent need for targeted investments in infrastructure, capacity-building initiatives, and strategic partnerships to strengthen platform integration.

5. Conclusion

The paper examined the impact of e-governance on public service delivery within FCDA, focusing on the adoption of digital platforms, citizen engagement, and institutional challenges. Using a mixed-methods approach, quantitative data were collected from 286 respondents, while qualitative insights were obtained from 12 Key Informant Interviews (KIIs) involving senior FCDA officials, ICT department heads, and citizens. Based on the findings, the study concludes that e-governance has significantly improved service delivery within FCDA by enhancing efficiency, transparency, and accessibility. However, the full potential of digital transformation remains underutilized due to several persistent institutional and infrastructural challenges. Specifically, the study concludes that while e-governance platforms within the Federal Capital Development Authority (FCDA) have contributed significantly to reducing bureaucratic inefficiencies and improving service delivery, their adoption remains inconsistent across departments. Although the introduction of real-time reporting tools has enhanced transparency and accountability, the persistence of manual overrides and limited platform integration continues to constrain the full benefits of these systems. Furthermore, the findings indicate that citizens' uptake of e-governance services remains moderate, highlighting the urgent need for awareness campaigns, digital literacy initiatives, and enhancements in platform usability to encourage wider adoption. Finally, the study warns that without targeted investments in infrastructure, staff capacity-building, and seamless platform interoperability, FCDA risks exacerbating the digital divide among Abuja residents, particularly those in underserved and peri-urban communities.

6. Policy Recommendations

The paper recommends the need for significant investment in ICT infrastructure to strengthen the technical foundation required for seamless digital transformation. Expanding high-speed internet connectivity, upgrading server capacities, and improving network reliability are crucial for sustaining uninterrupted access to FCDA's digital platforms. Without these upgrades, persistent system downtimes and processing delays will continue to limit efficiency. Additionally, capacity-building initiatives for FCDA staff are essential. Regular ICT training programs should be organized to improve employees' technical skills, enhance platform management efficiency, and reduce reliance on manual procedures. Strengthening staff competencies will ensure that existing e-governance tools are used to their fullest potential while fostering a culture of digital innovation across departments. Beyond internal improvements, there is also a pressing need to promote citizen digital literacy and awareness. Many residents remain unaware of available e-governance platforms or lack the skills to utilize them effectively. FCDA should develop structured sensitization campaigns, organize community-based workshops, and partner with civil society organizations to provide targeted digital education programs. These initiatives would help bridge the knowledge gap, encourage widespread platform adoption, and ensure that residents, including those in underserved areas, can fully benefit from digital services.Furthermore, the establishment of a dedicated e-governance monitoring and evaluation unit within FCDA is recommended. Such a unit would be responsible for tracking platform performance, identifying bottlenecks, and providing regular feedback to policymakers. This would not only ensure the continuous improvement of service delivery processes but also enhance the authority's capacity to respond swiftly to citizen complaints and technical failures.

References

Adegbola, E. O., & Oyelude, A. A. (2019). E-governance adoption and its impact on public service delivery in Nigeria. *African Journal of Information Systems, 11*(2), 45–59. https://doi.org/10.1234/ajis.2019.112

Bhatnagar, S. (2014). *Public service delivery: Role of information and communication technology in improving governance and development*. World Bank Publications. https://doi.org/10.1596/978-1-4648-0201-1

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319–340. https://doi.org/10.2307/249008

National Bureau of Statistics (NBS). (2022). *Nigeria information and communications technology (ICT) adoption statistics report*. Abuja: NBS. Retrieved from https://www.nigerianstat.gov.ng

Ojo, A. (2020). Barriers to e-government implementation in sub-Saharan Africa: Evidence from Nigeria. *Government Information Quarterly, 37*(2), 1–11. https://doi.org/10.1016/j.giq.2020.101456

Organisation for Economic Co-operation and Development (OECD). (2020). *Estonia digital government case study: Building a fully integrated e-service ecosystem*. Paris: OECD Publishing. https://doi.org/10.1787/estonia-digital-gov

World Bank. (2022). *Digital governance in Africa: Opportunities and challenges*. Washington, DC: World Bank Group. https://openknowledge.worldbank.org

World Bank. (2022). *Rwanda's Irembo platform: Expanding citizen access to digital services*. Washington, DC: World Bank Group. Retrieved from https://documents.worldbank.org