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# E-GOVERNANCE AND LOCAL GOVERNMENT EFFICIENCY IN SERVICE DELIVERY: EVIDENCE FROM SELECTED LGAS IN SOUTHWEST NIGERIA

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## Abstract

The growing demand for transparency, accountability, and responsiveness in public administration has positioned e-governance as a critical tool for improving service delivery, particularly at the grassroots level. This study examines the impact of e-governance adoption on local government efficiency in selected Local Government Areas (LGAs) across Southwest Nigeria. Using a convergent mixed-methods design, data were collected from 300 respondents, including local government officials, ICT officers, and citizens, complemented by key informant interviews and document analysis of digital platforms. E-governance was operationalized through tools such as online tax systems, e-record management, digital complaint platforms, and e-budgeting dashboards, while service delivery efficiency was measured in terms of responsiveness, transparency, and citizen satisfaction. Quantitative data were analyzed using regression and Structural Equation Modelling (SEM), while qualitative data were thematically analyzed. Findings reveal that e-governance adoption significantly improves service delivery efficiency ($\beta = 0.62$, $p < 0.001$), particularly in reducing processing time and enhancing transparency. However, infrastructural deficits, low digital literacy, and institutional resistance limit its full potential. The study concludes that e-governance is a critical enabler of local government reform but requires strategic investment and capacity building to achieve sustainable impact. It recommends strengthening digital infrastructure, enhancing staff training, and promoting citizen engagement through inclusive digital platforms. The study contributes to advancing empirical knowledge on e-governance at the grassroots level and provides policy-relevant insights for improving local government performance in Nigeria and similar contexts.

**Keywords:** E-governance; Local government; Service delivery; Digital governance; Public administration; Nigeria; ICT; Transparency

## 1.0 Introduction

The rapid advancement of digital technologies has fundamentally transformed public administration systems worldwide, reshaping how governments design, deliver, and evaluate

public services. In this context, e-governance defined as the application of information and communication technologies (ICTs) in governance processes has emerged as a critical instrument for enhancing efficiency, transparency, and citizen engagement (United Nations Development Programme [UNDP], 2022; Alshehri, Drew, Alhussain, & Alghamdi, 2021). By digitizing administrative procedures and enabling real-time interaction between government and citizens, e-governance reduces bureaucratic bottlenecks, improves decision-making accuracy, and enhances service accessibility. Empirical studies show that digital governance systems significantly improve service delivery efficiency by reducing processing time, minimizing human errors, and strengthening accountability mechanisms (Bwalya & Mutula, 2022).

Globally, governments are increasingly adopting e-governance frameworks as part of broader public sector reforms aimed at achieving performance-oriented and citizen-centered governance systems. The integration of ICT into governance processes facilitates interoperability across institutions, promotes transparency in public finance and administration, and enhances citizen participation in policymaking (OECD, 2021; UNDP, 2022). These developments align with the principles of New Public Management and digital-era governance, which emphasize efficiency, accountability, and responsiveness in public service delivery (Dunleavy, Margetts, Bastow, & Tinkler, 2006). However, the effectiveness of e-governance depends not only on technological deployment but also on institutional readiness, regulatory frameworks, and user acceptance.

In developing countries such as Nigeria, the adoption of e-governance has gained momentum in response to persistent challenges in public administration, including corruption, inefficiency, and weak service delivery systems. Studies indicate that e-governance initiatives in Nigeria such as digital tax systems, electronic payroll platforms, and public service portals have contributed to improved transparency and administrative efficiency (Ayo, Oni, Adewoye, & Eweoya, 2021). Nevertheless, significant challenges remain, including inadequate ICT infrastructure, limited technical capacity, and low levels of digital literacy among both public officials and citizens (Igbokwe & Adejumo, 2022). These constraints have limited the full realization of the benefits of e-governance, particularly at the sub-national and local government levels.

The local government tier occupies a strategic position within Nigeria's governance architecture, serving as the closest interface between the state and citizens. Local governments are constitutionally mandated to deliver essential services such as waste management, primary healthcare, education, taxation, and community development. However, this tier is often characterized by manual administrative processes, bureaucratic delays, fragmented data systems, and weak citizen engagement, which undermine service delivery effectiveness (Obadan & Adeyeye, 2020). While federal and state governments have made progress in digital transformation, local governments lag significantly behind, resulting in disparities in governance performance and public service outcomes.

The introduction of e-governance at the local level offers significant potential to address these challenges. Digital tools such as online tax administration systems, electronic records management, e-budgeting platforms, and citizen feedback portals can streamline administrative processes, enhance transparency, and improve responsiveness to citizen needs. Empirical evidence suggests that such tools can lead to measurable improvements in service delivery efficiency, including reduced processing time, improved revenue generation, and increased citizen

satisfaction (Fasoyin & Daramola, 2023). However, the effectiveness of these initiatives varies across local governments due to differences in institutional capacity, leadership commitment, and resource availability.

From a theoretical perspective, the adoption and effectiveness of e-governance can be explained using the Technology Acceptance Model (TAM) and Institutional Theory. TAM posits that perceived usefulness and ease of use influence the adoption of technological innovations (Davis, 1989), while Institutional Theory emphasizes the role of organizational norms, structures, and regulatory environments in shaping implementation outcomes (Scott, 2014). In the context of local governance, these frameworks suggest that successful e-governance implementation requires not only technological infrastructure but also supportive institutional environments and stakeholder engagement.

Despite the growing importance of e-governance, empirical research on its impact at the local government level in Nigeria remains limited. Most existing studies focus on federal or state-level initiatives, thereby overlooking the unique governance dynamics and operational challenges at the grassroots. Furthermore, there is insufficient evidence on how e-governance tools influence key dimensions of service delivery, including responsiveness, transparency, and citizen satisfaction, within local contexts.

This study addresses this gap by examining the impact of e-governance adoption on local government efficiency in service delivery across selected LGAs in Southwest Nigeria. By integrating quantitative and qualitative approaches, the study evaluates the types of digital tools in use, assesses their effectiveness in improving service delivery outcomes, and identifies the institutional and infrastructural factors influencing their implementation. The findings provide evidence-based insights for strengthening local government performance, enhancing public trust, and promoting inclusive and efficient service delivery systems in Nigeria and similar developing contexts.

## 2.0 Literature Review

This study is anchored on Human Capital Theory (HCT) and Financial Capability Theory (FCT) to explain how e-governance adoption influences service delivery efficiency at the local government level. Human Capital Theory posits that investments in knowledge, skills, and competencies enhance productivity and organizational performance (Becker, 1993). In the context of e-governance, the digital skills and technical competencies of local government staff constitute a critical form of human capital that determines the effectiveness of ICT deployment in public administration. Empirical studies have shown that public sector organizations with higher levels of human capital are more likely to successfully implement digital innovations and achieve improved service delivery outcomes (Bwalya & Mutula, 2022). Financial Capability Theory extends this perspective by emphasizing the role of access to financial resources, institutional support, and effective resource management in achieving organizational efficiency (Sherraden, 2013). In e-governance contexts, financial capability relates to the ability of local governments to mobilize, allocate, and manage financial resources for ICT infrastructure, system maintenance, and capacity building. Limited financial capability can constrain the adoption and sustainability of e-governance initiatives, particularly in resource-constrained environments such as Nigerian

LGAs. The integration of HCT and FCT therefore provides a comprehensive framework for understanding how human and financial resources jointly influence the success of e-governance and its impact on service delivery efficiency.

E-governance refers to the use of ICT to enhance the efficiency, transparency, and responsiveness of government operations and service delivery (UNDP, 2022). It encompasses a wide range of digital tools, including online service portals, electronic records management systems, digital payment platforms, and citizen engagement applications. The primary objective of e-governance is to improve the quality of public services while reducing administrative costs and bureaucratic inefficiencies. Service delivery efficiency, on the other hand, refers to the ability of government institutions to provide timely, accessible, and high-quality services to citizens. It is typically measured in terms of responsiveness, processing time, cost-effectiveness, and citizen satisfaction (OECD, 2021). Studies have consistently shown that e-governance initiatives can significantly enhance service delivery efficiency by automating processes, reducing manual errors, and enabling real-time monitoring and evaluation (Ayo et al., 2021).

The adoption of e-governance in developing countries has been driven by the need to address governance challenges such as corruption, inefficiency, and lack of transparency. In Africa, several countries have implemented e-governance initiatives to improve public administration and service delivery. For instance, studies by Bwalya and Mutula (2022) highlight how digital platforms in African local governments have improved tax collection, citizen engagement, and administrative efficiency. In Nigeria, e-governance adoption has been more prominent at the federal and state levels, with initiatives such as the Treasury Single Account (TSA), Integrated Payroll and Personnel Information System (IPPIS), and various e-government portals (Ayo et al., 2021). However, the adoption of e-governance at the local government level remains limited, with many LGAs still relying on manual processes and fragmented information systems (Obadan & Adeyeye, 2020).

Empirical evidence suggests that e-governance has a positive impact on service delivery outcomes. Digital systems enable faster processing of transactions, improve accuracy in record-keeping, and enhance transparency in public administration. For example, the introduction of online tax systems has been shown to increase revenue collection efficiency and reduce leakages, while digital complaint platforms improve responsiveness to citizen needs (Fasoyin & Daramola, 2023). E-governance also enhances accountability by providing audit trails and enabling public access to information. This reduces opportunities for corruption and increases trust in government institutions. However, the effectiveness of e-governance depends on the level of adoption, system integration, and user engagement.

Despite its potential benefits, the implementation of e-governance at the local government level faces several challenges. Key barriers include inadequate ICT infrastructure, limited financial resources, low digital literacy, and resistance to change among public officials (Ajayi, 2023). Institutional factors such as weak leadership, lack of policy coherence, and limited inter-agency coordination also hinder effective implementation. Additionally, socio-cultural factors, including low trust in digital systems and limited citizen awareness, affect the adoption and utilization of e-governance platforms. These barriers highlight the importance of addressing both technical and institutional challenges to ensure the successful implementation of e-governance initiatives.

Citizen perception plays a critical role in the success of e-governance initiatives. Studies have shown that when citizens perceive digital platforms as useful, accessible, and reliable, they are more likely to engage with them and trust government institutions (Ishola & Danjuma, 2022). Digital platforms that facilitate citizen participation, such as feedback portals and budget tracking systems, can enhance transparency and accountability. However, low levels of digital literacy and limited access to technology can restrict citizen engagement, particularly in rural and underserved areas.

Despite the growing body of literature on e-governance, significant gaps remain in understanding its impact at the local government level in Nigeria. Most studies focus on federal and state-level initiatives, with limited attention to grassroots governance structures. Additionally, there is insufficient empirical evidence on how e-governance influences service delivery efficiency in local contexts. This study addresses these gaps by providing a comprehensive analysis of e-governance adoption and its impact on service delivery in selected LGAs in Southwest Nigeria. By integrating Human Capital Theory and Financial Capability Theory, the study offers a multidimensional perspective that considers both technical and institutional factors influencing e-governance outcomes. The findings contribute to advancing theoretical and empirical knowledge while providing practical insights for policymakers, local government administrators, and development practitioners seeking to improve service delivery through digital transformation.

## 3.0 Methodology

This study adopted a convergent parallel mixed-methods design integrating multiple regression and PLS-SEM to examine the impact of e-governance on service delivery efficiency in selected LGAs across Ekiti, Ondo, and Osun States. Six LGAs were purposively selected based on ICT readiness, followed by stratified sampling of 300 respondents (officials, ICT staff, and residents). Quantitative data were collected via structured questionnaires measuring E-Governance Adoption (EGA), Human Capital Capacity (HCC), Financial Capability (FC), and Service Delivery Efficiency (SDE) on a 4-point Likert scale, and analyzed using SPSS (v27) for descriptive statistics, cross-tabulation, and regression. PLS-SEM (SmartPLS 4) tested structural paths (EGA → SDE, HCC → EGA, FC → EGA, HCC → SDE, FC → SDE), with reliability and validity assessed using Cronbach's alpha (≥ 0.70), composite reliability (≥ 0.70), AVE (≥ 0.50), Fornell–Larcker, and HTMT, and significance via bootstrapping (5,000 resamples; SRMR < 0.08) (Hair et al., 2022; Kline, 2023). Qualitative data from interviews and document analysis (e-portals, service logs, policy records) were thematically analyzed using NVivo and triangulated with quantitative findings. Ethical standards were observed, and robustness checks (VIF < 5, normality, sensitivity tests) ensured validity and generalizability.

## 4.0 Results and Discussion

**Table 4.1: Descriptive Statistics (n = 300)**

| Variable | Mean | Std. Dev | Min | Max |
|---|---|---|---|---|
| E-Governance Adoption (EGA) | 2.84 | 0.72 | 1.60 | 4.00 |
| Human Capital Capacity (HCC) | 2.91 | 0.68 | 1.70 | 4.00 |
| Financial Capability (FC) | 2.63 | 0.75 | 1.50 | 4.00 |

| Variable | Mean | Std. Dev | Min | Max |
|---|---|---|---|---|
| Service Delivery Efficiency (SDE) | 2.78 | 0.70 | 1.60 | 4.00 |

Table 4.1 indicates that **e-governance adoption (M = 2.84)** is moderate across the sampled LGAs, suggesting that while digital tools are being introduced, their deployment remains uneven and not fully institutionalized. This aligns with existing evidence that local governments in Nigeria are still transitioning from manual to digital systems. Human Capital Capacity (M = 2.91) is slightly higher, indicating that staff possess some level of ICT competence, but not at a level sufficient to drive full-scale digital transformation. The relatively high standard deviation suggests disparities across LGAs, reflecting uneven training and exposure. Financial Capability (M = 2.63) is the lowest among the variables, highlighting funding constraints and limited budget allocation for ICT infrastructure and maintenance. This underscores a critical bottleneck in e-governance implementation. Service Delivery Efficiency (M = 2.78) is moderate, indicating partial improvements in responsiveness and transparency but persistent inefficiencies. The results suggest that while e-governance is being adopted, its full benefits are yet to be realized.

**Table 4.2: Reliability and Validity Results**

| Construct | Cronbach's Alpha | Composite Reliability (CR) | AVE |
|---|---|---|---|
| EGA | 0.88 | 0.91 | 0.65 |
| HCC | 0.86 | 0.90 | 0.64 |
| FC | 0.85 | 0.89 | 0.62 |
| SDE | 0.89 | 0.92 | 0.67 |

The results confirm strong internal consistency and convergent validity. Cronbach's alpha values exceed 0.70, indicating reliable constructs, while composite reliability values above 0.90 demonstrate robustness. AVE values above 0.50 confirm that constructs adequately explain variance in their indicators. These results validate the measurement model and support further structural analysis.

**Table 4.3: Structural Path Coefficients**

| Path | Beta (β) | t-value | p-value | Decision |
|---|---|---|---|---|
| EGA → SDE | 0.62 | 8.45 | 0.000 | Supported |
| HCC → EGA | 0.53 | 7.12 | 0.000 | Supported |
| FC → EGA | 0.48 | 6.38 | 0.000 | Supported |
| HCC → SDE | 0.29 | 3.91 | 0.001 | Supported |
| FC → SDE | 0.24 | 3.45 | 0.002 | Supported |

$R^2$ (SDE) = 0.73

The results show that e-governance adoption has a strong and significant impact on service delivery efficiency (β = 0.62), confirming that digital tools improve responsiveness, transparency, and administrative performance. Human Capital Capacity significantly influences both EGA (β = 0.53) and SDE (β = 0.29), indicating that staff skills are critical for both adoption and outcomes. Financial Capability also plays a significant role (β = 0.48 → EGA; β = 0.24 → SDE), highlighting

the importance of funding and resource allocation. The high $R^2$ value (0.73) indicates that the model explains 73% of the variance in service delivery efficiency, demonstrating strong explanatory power.

**Table 4.4: Mediation Effects**

| Path | Indirect Effect | t-value | p-value | Mediation |
|---|---|---|---|---|
| HCC → EGA → SDE | 0.33 | 4.12 | 0.000 | Partial |
| FC → EGA → SDE | 0.30 | 3.98 | 0.000 | Partial |

The results indicate that e-governance adoption partially mediates the effects of human capital and financial capability on service delivery efficiency. This means that while skills and funding directly improve efficiency, their impact is significantly enhanced through digital systems. This supports both Human Capital Theory and Financial Capability Theory, emphasizing that resources must be effectively utilized through technological platforms.

**Table 4.5: Mean Differences by State**

| Variable | Ekiti | Ondo | Osun |
|---|---|---|---|
| EGA | 2.95 | 2.80 | 2.77 |
| SDE | 2.90 | 2.75 | 2.70 |

Ekiti shows slightly higher e-governance adoption and service efficiency, possibly due to better ICT initiatives and governance reforms. Ondo and Osun lag slightly, reflecting variations in institutional capacity and funding. These differences highlight the importance of context-specific strategies for digital governance.

**Table 4.6: Multiple Regression Results**

| Variable | Beta (β) | t-value | p-value |
|---|---|---|---|
| EGA | 0.62 | 9.88 | 0.000 |
| HCC | 0.27 | 3.76 | 0.001 |
| FC | 0.21 | 3.12 | 0.002 |

$R^2 = 0.70$

The regression results confirm that e-governance adoption is the strongest predictor of service delivery efficiency, reinforcing SEM findings. Human capital and financial capability also contribute significantly, though to a lesser extent. The model explains 70% of the variation in efficiency, indicating strong predictive power.

Qualitative findings reveal that digital tools have improved transparency and reduced delays in service delivery. However, challenges such as poor internet connectivity, inadequate funding, and resistance to change persist. Officials emphasized the need for training and infrastructure, while citizens highlighted improved access but expressed concerns about usability. The findings confirm that e-governance is a critical driver of local government efficiency, but its success depends on human capacity and financial support. The results highlight the need for integrated strategies

combining technology, skills development, and institutional reform to achieve sustainable digital governance.

## 5.0 Conclusion and Recommendations

This study provides strong empirical evidence on the role of e-governance in enhancing local government efficiency in service delivery across selected LGAs in Southwest Nigeria. The findings demonstrate that the adoption of digital governance tools significantly improves service delivery outcomes, particularly in terms of responsiveness, transparency, and administrative efficiency. E-governance emerges as the most influential driver of service delivery performance, confirming its central role in modern public sector reform. The study further establishes that human capital capacity and financial capability are critical enablers of e-governance adoption and effectiveness. Local governments with better-trained personnel and adequate financial resources are more likely to successfully implement digital systems and achieve improved service outcomes. Conversely, limited ICT skills, inadequate funding, and infrastructural deficits remain key barriers to effective e-governance implementation at the grassroots level. The mediation analysis highlights that the benefits of human and financial resources are significantly amplified when channeled through e-governance systems, underscoring the importance of integrating technology with institutional capacity. Additionally, the observed variations across states reveal that contextual factors such as leadership commitment, policy support, and infrastructure availability influence the success of digital governance initiatives. The study confirms that while e-governance offers a transformative pathway for improving local government performance, its impact is contingent upon the alignment of technological, human, and financial resources. It contributes to the literature by providing empirical insights into grassroots digital governance and offers a comprehensive framework for understanding the drivers of service delivery efficiency in developing country contexts.

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

1. Governments should invest in reliable internet connectivity, hardware systems, and integrated digital platforms to support effective e-governance implementation across LGAs.
2. Regular training programs should be organized for local government staff to enhance digital skills, improve system utilization, and foster a culture of innovation in public administration.
3. Dedicated funding should be allocated for ICT development, system maintenance, and digital innovation to ensure sustainability of e-governance initiatives.
4. Strong leadership and institutional support are required to drive digital transformation, reduce resistance to change, and ensure effective implementation of e-governance policies.
5. Local governments should expand the use of citizen-centered digital tools such as feedback portals, mobile applications, and e-participation platforms to improve transparency and trust.
6. Digital systems across departments should be integrated to enable seamless data sharing, improve coordination, and enhance overall service delivery efficiency.
7. Public awareness campaigns and digital literacy programs should be implemented to ensure that citizens can effectively access and utilize e-governance services.

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