

GSAR Journal of Agriculture and Veterinary Sciences
ISSN: 3048-9075 (Online)
Abbreviated key title: Glob.J. Agri.Vet.Sci.
Frequency: Monthly
Published By GSAR Publishers
Journal Homepage Link- https://gsarpublishers.com/journal-gjavs-home/

The Role of E-Governance in Service Delivery in Nigeria

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Article History

Received: 01/11/2026
Accepted: 11/11/2026
Published: 13/11/2026

Vol – 3 Issue –11

PP: -01-09

Abstract

E-governance has become a critical mechanism for enhancing efficiency, transparency, accountability, and effectiveness in public sector service delivery worldwide. In Nigeria, the integration of Information and Communication Technologies (ICTs) into government operations is intended to address longstanding challenges such as bureaucratic inefficiencies, corruption, poor record management, and limited access to public services. This study examined the role of e-governance in improving service delivery in Nigeria by assessing its influence on the accessibility, efficiency, responsiveness, and transparency of government services. It further explored the key challenges impeding its effective implementation, including inadequate ICT infrastructure, unstable electricity supply, cybersecurity threats, insufficient funding, low levels of digital literacy, and institutional resistance to change. Drawing on relevant literature and theoretical perspectives, the study revealed that although e-governance initiatives have contributed to notable improvements in areas such as tax administration, identity management, public procurement, and business registration, their overall effectiveness remains constrained by institutional, technological, and socio-economic limitations. The study concluded that achieving sustainable improvements in public service delivery requires stronger policy implementation, increased investment in digital infrastructure, continuous capacity building for public officials, robust cybersecurity frameworks, and enhanced citizen participation. It therefore recommended a collaborative approach involving government, the private sector, civil society, and development partners to strengthen Nigeria's digital governance framework and foster efficient, transparent, inclusive, and citizen-centred public service delivery.

Keywords: *E-governance, Service Delivery, Information and Communication Technology (ICT), Administration, Digital Governance, Nigeria.*

1.0 Introduction

The rapid advancement of Information and Communication Technologies (ICTs) has transformed public administration globally, making e-governance a vital instrument for improving governance and public service delivery. Governments increasingly utilise digital technologies to streamline administrative processes, enhance transparency and accountability, improve access to public services, and promote citizen participation. Consequently, e-governance has evolved from a technological innovation into a strategic tool for achieving efficient, inclusive, and citizen-centred governance UN, 2022). Globally, e-governance gained prominence in the late 1990s as governments recognised the potential of ICT to strengthen interactions between government, citizens, businesses, and other stakeholders. Beyond computerising public offices, modern e-governance encompasses integrated digital systems that support policy implementation, evidence-based decision-making, electronic transactions, and intergovernmental coordination (Heeks, 2006).

In Nigeria, the adoption of e-governance has been driven by the need to address persistent challenges such as bureaucratic inefficiency, corruption, poor record management, weak accountability, and limited citizen participation. The National Information Technology Policy of 2001 laid the foundation for digital governance by strengthening the National Information Technology Development Agency (NITDA) to coordinate ICT development across government institutions. Subsequent initiatives, including the National Digital Economy Policy and Strategy (2020–2030) and the Nigeria Data Protection Act (2023), have further reinforced the country's commitment to digital transformation (Federal

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Ministry of Communications and Digital Economy [FMCDE], 2020; NITDA, 2020).

Nigeria has implemented several notable e-governance reforms, including the Treasury Single Account (TSA), Government Integrated Financial Management Information System (GIFMIS), Integrated Payroll and Personnel Information System (IPPIS), Corporate Affairs Commission (CAC) online registration, Federal Inland Revenue Service (FIRS) electronic tax administration, National Identity Management Commission (NIMC) digital identity programme, Nigeria Immigration Service e-passport system, and the Joint Admissions and Matriculation Board (JAMB) Computer-Based Testing (CBT). These initiatives have improved administrative efficiency, financial accountability, transparency, and access to public services (World Bank, 2021).

Despite these achievements, the implementation of e-governance continues to face challenges, including inadequate ICT infrastructure, unstable electricity supply, limited broadband penetration, low digital literacy, cybersecurity threats, inadequate funding, institutional resistance to change, and weak inter-agency coordination. These challenges have limited the full realisation of digital governance, particularly in rural communities where access to digital technologies remains constrained (OECD, 2023). Nevertheless, e-governance remains central to Nigeria's public sector reforms because it promotes transparency, accountability, efficient service delivery, and citizen engagement while supporting economic development and sustainable governance. This review therefore examines the concept, evolution, theoretical foundations, major roles, initiatives, challenges, strategies, and future prospects of e-governance in improving service delivery in Nigeria.

2.0 Concept of E-Governance

E-governance refers to the application of Information and Communication Technologies (ICTs) to improve government operations, public administration, and interactions between government and its stakeholders. According to the United Nations (2022), it involves the use of digital technologies to provide efficient, transparent, accountable, participatory, and inclusive public services. Similarly, Heeks (2006) views e-governance as the application of ICT to transform governmental processes, improve decision-making, strengthen democratic governance, and enhance service delivery through institutional and organisational reforms.

Bannister and Connolly (2014) further describe e-governance as the use of digital technologies to create public value by improving governmental efficiency, transparency, accountability, and responsiveness. In Nigeria, e-governance encompasses the adoption of ICT across Ministries, Departments, and Agencies (MDAs) to facilitate electronic service delivery, digital identity management, electronic taxation, online business registration, electronic procurement, and integrated financial management systems (NITDA, 2020).

E-governance operates through four major dimensions. Government-to-Citizen (G2C) facilitates online delivery of services such as passport applications, tax payments, digital identity registration, and information dissemination. Government-to-Business (G2B) supports electronic business registration, licensing, procurement, customs administration, and tax services, thereby improving the ease of doing business. Government-to-Government (G2G) enhances collaboration among government agencies through integrated databases, electronic records, and information-sharing systems, while Government-to-Employee (G2E) improves internal administration through digital payroll, personnel management, staff training, and communication platforms.

Contemporary e-governance also incorporates emerging technologies such as artificial intelligence, cloud computing, blockchain, big data analytics, mobile governance, and cybersecurity frameworks to improve efficiency, secure digital transactions, and support evidence-based decision-making (OECD, 2023). E-governance is more than the digitisation of government activities; it is a comprehensive governance reform strategy that integrates technology, institutional change, and citizen engagement to promote efficient, transparent, accountable, and citizen-centred public service delivery.

2.1 Evolution of E-Governance in Nigeria

The evolution of e-governance in Nigeria reflects the country's efforts to modernise public administration through Information and Communication Technologies (ICTs). Initially, government operations were largely manual, characterised by paper-based record keeping, bureaucratic delays, poor coordination, and widespread inefficiency. Over time, policy reforms and technological innovations transformed e-governance into a key instrument for improving efficiency, transparency, accountability, and public service delivery.

2.1.1 Pre-Digital Administration Era (Before 2000)

Before 2000, public administration in Nigeria relied almost entirely on manual processes. Government services such as passport issuance, company registration, tax administration, and land documentation involved lengthy bureaucratic procedures, resulting in delays, poor record management, and opportunities for corruption (Heeks, 2006). Although some agencies introduced basic computer systems in the late 1990s, ICT adoption remained fragmented and had little impact on public sector performance (Abasilim & Edet, 2015).

2.1.2 Foundation of E-Governance (2001–2006)

Nigeria formally embraced e-governance with the adoption of the National Information Technology Policy (2001), which recognised ICT as a catalyst for socio-economic development and public sector reform (Federal Republic of Nigeria [FRN], 2001). The policy strengthened the National Information Technology Development Agency (NITDA) to coordinate ICT development, promote digital literacy, establish ICT standards, and support e-government initiatives. Although implementation was slow due to infrastructural limitations,

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this period laid the institutional foundation for subsequent digital governance reforms (NITDA, 2020).

2.1.3 Expansion of Digital Government (2007–2015)

Between 2007 and 2015, Nigeria introduced major e-governance reforms aimed at improving financial management and administrative efficiency. Galaxy Backbone was established to provide secure government ICT infrastructure and inter-agency connectivity. Key digital platforms introduced during this period included the Government Integrated Financial Management Information System (GIFMIS), Integrated Payroll and Personnel Information System (IPPIS), and the Treasury Single Account (TSA**)**. These initiatives automated budgeting, payroll administration, and financial management, reduced revenue leakages and payroll fraud, and strengthened accountability and transparency (CBN, 2021; OAGF, 2022; World Bank, 2021).

2.1.4 Digital Transformation (2016–2020)

From 2016, Nigeria expanded online public services across several sectors. The Corporate Affairs Commission (CAC) digitised business registration, while the Federal Inland Revenue Service (FIRS) introduced electronic tax administration. The Nigeria Immigration Service (NIS) enhanced online passport processing, and the Joint Admissions and Matriculation Board (JAMB) implemented Computer-Based Testing (CBT) and the Central Admissions Processing System (CAPS), improving transparency and efficiency in tertiary admissions (Chukwuemeka et al., 2018). The National Identity Management Commission (NIMC) also accelerated the National Identity Number (NIN) programme to support digital identity management and access to government services.

2.1.5 Digital Economy Era (2020–Present)

Nigeria's digital transformation gained momentum with the launch of the National Digital Economy Policy and Strategy (2020–2030), which broadened e-governance to include digital innovation, cybersecurity, broadband expansion, digital literacy, and emerging technologies (Federal Ministry of Communications and Digital Economy [FMCDE], 2020). The COVID-19 pandemic further accelerated the adoption of virtual meetings, remote work, e-learning, telemedicine, and electronic document management.

The enactment of the Nigeria Data Protection Act (2023) strengthened data privacy and cybersecurity, enhancing public confidence in digital services. Today, Nigeria continues to expand e-governance through cloud computing, artificial intelligence, blockchain, integrated digital identity systems, electronic procurement, and e-justice initiatives. Despite challenges such as inadequate infrastructure, digital exclusion, and cybersecurity risks, Nigeria has gradually evolved from fragmented ICT adoption to an increasingly integrated digital governance framework focused on efficient, transparent, and citizen-centred service delivery.

3.1 Objectives of E-Governance

The primary objective of e-governance is to utilise Information and Communication Technologies (ICTs) to improve public administration through efficient, transparent, accountable, responsive, and citizen-centred service delivery. Unlike traditional governance, which depends heavily on manual procedures, e-governance automates government operations, simplifies administrative processes, and strengthens interactions between government, citizens, businesses, and other stakeholders.

A major objective is to improve administrative efficiency by reducing paperwork, eliminating duplication of tasks, accelerating decision-making, and enhancing the accuracy of government records through digital technologies (Heeks, 2006). Closely related is the objective of enhancing transparency, as online platforms enable citizens to access government information on budgets, procurement, policies, and public expenditures, thereby promoting openness and public trust (United Nations [UN], 2022).

E-governance also seeks to promote accountability through electronic audit trails, digital financial management systems, and performance monitoring tools that facilitate oversight and reduce financial irregularities. Similarly, it aims to reduce corruption by limiting direct interactions between public officials and citizens through online services, electronic payments, digital procurement, and automated tax administration. Another important objective is to improve access to public services by enabling citizens to obtain government services online regardless of location. Digital platforms for passport applications, business registration, tax filing, identity management, and licence renewals increase convenience, reduce costs, and promote inclusiveness.

Furthermore, e-governance enhances the quality and responsiveness of public service delivery by reducing processing times, simplifying procedures, and improving customer satisfaction. It also strengthens citizen participation through online consultations, electronic petitions, government websites, and social media platforms, thereby encouraging civic engagement and democratic governance (Bannister & Connolly, 2014). Another objective is to strengthen intergovernmental coordination through integrated databases and information-sharing systems that improve collaboration among Ministries, Departments, and Agencies (MDAs). E-governance also supports public financial management through initiatives such as GIFMIS, TSA, and IPPIS, which improve budgeting, payroll administration, expenditure control, and fiscal accountability (World Bank, 2021).

Additionally, e-governance promotes evidence-based policymaking by facilitating the collection, analysis, and management of reliable government data. It also contributes to economic development by simplifying business registration, taxation, licensing, and regulatory processes, thereby improving the ease of doing business and attracting investment (OECD, 2023).

Finally, e-governance seeks to enhance public sector productivity, promote digital inclusion, strengthen national security through digital identity systems and information sharing, and support the achievement of the Sustainable Development Goals (SDGs) by fostering efficient,

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transparent, accountable, and inclusive public institutions (UN, 2022). In essence, the objectives of e-governance extend beyond the automation of government activities to encompass improved governance, efficient public service delivery, citizen engagement, sustainable development, and national digital transformation.

3.2 Theoretical Perspectives on E-Governance and Service Delivery

The application of e-governance in public administration has been explained through several theoretical perspectives that seek to clarify the relationship between digital technologies, governance, organisational behaviour, and service delivery. These theories provide conceptual frameworks for understanding how governments adopt ICT innovations, how public institutions respond to technological change, and how digital governance influences administrative performance and citizen satisfaction. Among the most relevant theories are the Technology Acceptance Model (TAM), Diffusion of Innovation Theory, New Public Management (NPM) Theory, Institutional Theory, and Public Value Theory.

3.2.1 Theoretical Framework Adopted for the Study

Although several theories explain different dimensions of e-governance, the New Public Management (NPM) Theory provides the most appropriate framework for examining the role of e-governance in service delivery in Nigeria. The choice of NPM is justified because the central objective of e-governance is to improve efficiency, effectiveness, accountability, transparency, responsiveness, and customer satisfaction within public administration. These objectives correspond directly with the fundamental principles of New Public Management, which advocate performance-oriented governance, managerial efficiency, innovation, decentralisation, and citizen-centred service delivery (Hood, 1991).

Nigeria's major e-governance reforms including the Treasury Single Account (TSA), Government Integrated Financial Management Information System (GIFMIS), Integrated Payroll and Personnel Information System (IPPIS), electronic procurement, online tax administration, digital identity management, and electronic business registration reflect the practical application of NPM principles. These initiatives have reduced bureaucratic inefficiencies, strengthened financial accountability, minimised corruption, and improved access to government services. Furthermore, the theory recognises citizens as customers who deserve efficient, timely, transparent, and quality public services. Since this review focuses primarily on the contribution of e-governance to public service delivery, New Public Management provides the most suitable analytical lens for evaluating Nigeria's digital governance reforms.

3.3 The Role of E-Governance in Service Delivery in Nigeria

E-governance has significantly transformed public administration in Nigeria through the application of Information and Communication Technologies (ICTs) to government operations and public service delivery. It has become an important strategy for addressing bureaucratic inefficiency, corruption, poor record management, weak accountability, and limited citizen participation. By digitising government processes, e-governance has improved efficiency, transparency, accessibility, responsiveness, and service quality across various sectors of governance.

1 Improvement in Administrative Efficiency: E-governance has enhanced administrative efficiency by replacing manual procedures with electronic document management, integrated databases, cloud computing, and automated workflows. These innovations have reduced paperwork, eliminated duplication, accelerated decision-making, and improved productivity. Services such as passport processing, business registration, tax administration, and public procurement are now delivered more efficiently (Heeks, 2006).

2 Enhancement of Transparency: Digital platforms have improved transparency by making government information, including budgets, procurement opportunities, financial reports, and policy documents, readily accessible to citizens. Systems such as the Treasury Single Account (TSA) and Government Integrated Financial Management Information System (GIFMIS) enable real-time monitoring of public finances, thereby reducing financial manipulation and strengthening public confidence (World Bank, 2021).

3 Promotion of Accountability: E-governance strengthens accountability through electronic audit trails and digital financial management systems that facilitate monitoring and oversight. Initiatives such as the Integrated Payroll and Personnel Information System (IPPIS) have eliminated ghost workers, improved payroll management, and enhanced financial accountability, while electronic procurement systems ensure compliance with established procedures (Office of the Accountant-General of the Federation [OAGF], 2022).

4 Reduction of Corruption: By automating government services and reducing direct contact between public officials and citizens, e-governance minimises opportunities for bribery, favouritism, and abuse of discretion. Online tax payment, electronic procurement, and digital business registration have improved transparency and reduced corruption in public administration (United Nations [UN], 2022).

5 Improved Accessibility to Public Services: E-governance has expanded citizens' access to government services through online portals, electronic payments, and mobile applications. Services such as company registration, tax filing, passport applications, and identity registration can now be accessed remotely, reducing travel costs, waiting time, and bureaucratic barriers while promoting inclusiveness.

6 Faster and More Responsive Service Delivery: Automation has significantly reduced processing time for

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public services. Electronic systems enable faster verification, communication, and approval of applications. Innovations such as JAMB's Computer-Based Testing (CBT) and the National Identity Number (NIN) programme have improved the speed, efficiency, and credibility of service delivery (Chukwuemeka et al., 2018).

7. Improved Revenue Generation and Tax Administration: Digital tax administration has strengthened revenue collection by enabling online taxpayer registration, electronic filing, digital payments, and issuance of Tax Identification Numbers (TINs). These reforms have broadened the tax base, reduced leakages, improved compliance, and enhanced financial accountability (World Bank, 2021).

8. Enhancement of Public Financial Management: E-governance has strengthened fiscal management through digital systems such as the Treasury Single Account (TSA), Government Integrated Financial Management Information System (GIFMIS), and Integrated Payroll and Personnel Information System (IPPIS). These initiatives have improved budgeting, expenditure control, payroll administration, transparency, and fiscal discipline while reducing fraud and revenue leakages (OAGF, 2022).

9. Improved Record Management: Electronic databases and digital document management systems have replaced manual record keeping, enabling secure storage, quick retrieval, and effective sharing of government information. This has improved institutional memory, administrative continuity, evidence-based policymaking, and disaster recovery.

10. Promotion of Citizen Participation: E-governance has strengthened democratic governance by providing digital platforms through which citizens access information, submit complaints, participate in policy discussions, and provide feedback. Government websites, social media, electronic petitions, and online consultation platforms have enhanced communication between government and citizens, particularly during national emergencies such as the COVID-19 pandemic.

11. Promotion of Economic Development: By simplifying business registration, taxation, licensing, customs administration, and regulatory compliance, e-governance has improved the ease of doing business in Nigeria. These reforms reduce transaction costs, encourage investment, enhance private sector development, and contribute to sustainable economic growth (World Bank, 2021).

12. Improvement of Education Service Delivery: The education sector has benefited from digital innovations such as JAMB's Computer-Based Testing (CBT), online admissions, electronic result processing, and institutional management systems. Universities and other tertiary institutions now utilise electronic platforms for admissions, registration, fee payment, examinations, and student records, improving efficiency and service delivery.

13. Improvement of Healthcare Service Delivery: Digital health technologies, including Electronic Medical Records (EMRs), Hospital Information Management Systems (HIMS), telemedicine, and electronic disease surveillance, have improved healthcare administration, patient management, and public health monitoring. These innovations support better clinical decision-making and emergency response.

14. Enhancement of National Security and Justice Administration: E-governance has strengthened national security through biometric identity systems, electronic passports, integrated crime databases, and information sharing among security agencies. In the justice sector, electronic filing, virtual court proceedings, and digital case management have improved judicial efficiency and access to justice.

15. Promotion of Digital Inclusion and Sustainable Development: Beyond improving service delivery, e-governance supports digital inclusion, institutional modernisation, innovation, and sustainable development. It contributes to the achievement of Sustainable Development Goal 16 by promoting effective, accountable, transparent, and inclusive public institutions while providing a foundation for Nigeria's long-term digital transformation and socio-economic development.

3.4 Major E-Governance Initiatives in Nigeria

The implementation of e-governance in Nigeria has been driven by numerous digital transformation initiatives introduced by the Federal Government through various Ministries, Departments, and Agencies (MDAs). These initiatives are aimed at improving administrative efficiency, strengthening accountability, enhancing transparency, reducing corruption, and providing efficient public services. Over the past two decades, Nigeria has made considerable progress in digitising public administration despite persistent infrastructural and institutional challenges. The following are some of the major e-governance initiatives that have significantly influenced public service delivery in Nigeria.

1. National Information Technology Development Agency (NITDA): The National Information Technology Development Agency (NITDA), established in 2001, serves as the principal government institution responsible for coordinating information technology development and digital transformation in Nigeria. The agency was created following the adoption of the National Information Technology Policy, which recognised ICT as a strategic driver of national development. NITDA develops ICT policies, establishes standards for information technology deployment, promotes digital literacy, coordinates government digital transformation programmes, and supports innovation

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within the public sector. The agency has also played a significant role in implementing the National Digital Economy Policy and Strategy (2020–2030), promoting electronic governance across Ministries, Departments, and Agencies, and strengthening cybersecurity awareness among public institutions (NITDA, 2020).

Through its regulatory and developmental activities, NITDA provides the institutional framework necessary for sustainable digital governance in Nigeria.

2. National Digital Economy Policy and Strategy (2020–2030): The National Digital Economy Policy and Strategy (NDEPS) represents one of Nigeria's most comprehensive digital transformation frameworks. Launched in 2020 by the Federal Ministry of Communications and Digital Economy, the policy seeks to position Nigeria as a leading digital economy by integrating ICT into governance, education, healthcare, commerce, agriculture, and public administration. The policy focuses on eight strategic pillars, namely developmental regulation, digital literacy, digital skills, solid infrastructure, service infrastructure, digital services development, indigenous content development, and emerging technologies. These pillars collectively support the expansion of e-governance by encouraging digital public services, enhancing ICT infrastructure, and promoting innovation across government institutions (Federal Ministry of Communications and Digital Economy [FMCDE], 2020). Implementation of the policy has accelerated digital transformation across federal and state government institutions while encouraging collaboration between government and the private sector.

3 Treasury Single Account (TSA): The Treasury Single Account (TSA) is one of Nigeria's most successful public financial management reforms. Introduced to consolidate government revenues into a unified account maintained by the Central Bank of Nigeria, the TSA aims to eliminate revenue leakages, improve fiscal discipline, and strengthen financial accountability. Prior to the TSA, Ministries, Departments, and Agencies maintained multiple accounts in commercial banks, making financial monitoring difficult and creating opportunities for mismanagement of public funds. The implementation of the TSA has enabled government to monitor revenues in real time, improve cash management, reduce borrowing costs, and enhance transparency in public finance administration (Central Bank of Nigeria [CBN], 2021). The TSA also minimises opportunities for corruption by ensuring that government revenues are centrally monitored and electronically managed.

4 Government Integrated Financial Management Information System (GIFMIS): The Government Integrated Financial Management Information System (GIFMIS) is an integrated digital platform designed to automate public financial management processes across federal government institutions. The system supports budgeting, accounting, expenditure control, financial reporting, procurement, and treasury management. GIFMIS provides real-time financial information that enhances budget implementation, strengthens expenditure control, and facilitates evidence-based financial decision-making. By replacing manual accounting procedures with automated financial systems, GIFMIS has significantly improved accountability, reduced financial irregularities, and enhanced public sector efficiency (World Bank, 2021). The integration of GIFMIS with the Treasury Single Account has further strengthened Nigeria's financial governance architecture.

5. Integrated Payroll and Personnel Information System (IPPIS): The Integrated Payroll and Personnel Information System (IPPIS) was introduced to improve payroll administration and eliminate fraudulent practices within the federal civil service. Before its implementation, payroll management was characterised by the widespread existence of ghost workers, duplicate salary payments, inaccurate personnel records, and weak financial oversight. IPPIS maintains a centralised electronic database containing biometric and employment information for federal government employees. The system automates salary computation, payroll processing, pension deductions, and personnel management while facilitating regular staff verification exercises. The implementation of IPPIS has resulted in substantial savings for the Federal Government through the elimination of ghost workers and improved payroll accountability (Office of the Accountant-General of the Federation [OAGF], 2022).

6. Corporate Affairs Commission (CAC) Online Registration Portal: The Corporate Affairs Commission has significantly modernised business registration through the introduction of an online registration platform. Entrepreneurs can now reserve business names, register companies, upload incorporation documents, make electronic payments, and obtain certificates of incorporation electronically. This initiative has drastically reduced the time required to establish businesses in Nigeria while improving transparency, reducing physical interactions, and enhancing investor confidence. The online registration platform also supports Nigeria's efforts to improve the ease of doing business and promote private sector development.

4.1 Challenges of E-Governance in Nigeria

Despite the considerable progress made in implementing e-governance, Nigeria continues to face numerous challenges that limit the effectiveness of digital public service delivery. These challenges are technological, institutional, financial, legal, socio-economic, and human-capacity related.

1. Inadequate ICT Infrastructure: One of the greatest impediments to successful e-governance in Nigeria is inadequate ICT infrastructure. Effective digital governance depends on reliable internet connectivity,

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broadband access, modern computer systems, secure data centres, cloud infrastructure, and efficient communication networks. However, many government institutions, particularly at the state and local government levels, still operate with obsolete computer equipment, inadequate network facilities, and limited internet connectivity.

Broadband penetration remains uneven across the country, with rural communities experiencing significantly lower levels of internet access than urban centres. According to the Nigerian Communications Commission (NCC), although broadband penetration has improved considerably in recent years, significant disparities remain between urban and rural areas, limiting equitable access to electronic government services (NCC, 2024). The absence of adequate ICT infrastructure affects the speed, reliability, and accessibility of digital public services while discouraging widespread adoption of e-governance initiatives.

2. Unstable Electricity Supply: Reliable electricity is fundamental to the operation of digital governance systems. Unfortunately, Nigeria continues to experience persistent power supply challenges characterised by frequent outages, voltage fluctuations, and inadequate electricity generation. Government institutions often depend on generators and alternative power sources to maintain digital operations. This increases operational costs while reducing system reliability. Frequent power interruptions may result in service downtime, data loss, equipment damage, and disruption of electronic transactions. The unstable electricity supply therefore remains one of the most significant constraints to sustainable implementation of e-governance in Nigeria.

3. Cybersecurity Threats: As government institutions increasingly rely on digital technologies, cybersecurity has become one of the most critical challenges confronting e-governance in Nigeria. The digitisation of public services exposes government information systems to cyberattacks such as hacking, malware infections, phishing, ransomware, identity theft, data breaches, and denial-of-service attacks. These threats compromise the confidentiality, integrity, and availability of government data while undermining public confidence in electronic government services.

Nigeria has experienced a growing number of cyber incidents targeting financial institutions, government agencies, and critical infrastructure. Weak cybersecurity architecture, inadequate investment in cyber defence technologies, shortage of cybersecurity professionals, and low public awareness further increase the vulnerability of digital government platforms. Although the Cybercrimes (Prohibition, Prevention, etc.) Act, 2015 and the Nigeria Data Protection Act, 2023 provide legal frameworks for combating cybercrime and protecting personal data, effective implementation remains a major challenge (Nigeria Data Protection Commission [NDPC], 2023).

Strengthening cybersecurity through continuous monitoring, encryption technologies, multi-factor authentication, regular vulnerability assessments, staff training, and effective incident response mechanisms is therefore essential for sustaining public trust in e-governance.

4. Inadequate Funding: Successful implementation of e-governance requires substantial financial investment in ICT infrastructure, broadband connectivity, software development, cybersecurity, maintenance, capacity building, and continuous technological upgrades. However, funding allocated to ICT development within many government institutions remains inadequate. Budgetary constraints often result in delayed implementation of digital projects, procurement of obsolete technologies, poor maintenance of existing infrastructure, and limited technical support. Furthermore, competing national priorities such as healthcare, education, security, and infrastructure frequently reduce the financial resources available for digital transformation initiatives. The sustainability of e-governance therefore depends on increased government investment as well as strategic partnerships with the private sector, development agencies, and international organisations.

5. Low Digital Literacy: Digital literacy remains one of the major barriers to effective utilisation of e-governance services in Nigeria. A significant proportion of the population, particularly older adults, rural dwellers, and economically disadvantaged groups, lack the digital skills required to access and utilise online government services effectively. Similarly, some public servants possess limited ICT competencies, making it difficult for them to adapt to digital administrative systems. Inadequate computer skills often lead to resistance, operational inefficiency, and underutilisation of digital platforms. To maximise the benefits of e-governance, continuous digital literacy programmes should target both government employees and citizens. Such programmes should focus on computer literacy, internet navigation, cybersecurity awareness, and effective utilisation of electronic government services.

4.2 Future Prospects of E-Governance in Nigeria

The future of e-governance in Nigeria is promising due to rapid technological advancement, increasing internet penetration, growing smartphone adoption, expanding broadband infrastructure, and sustained government commitment to digital transformation. The implementation of the National Digital Economy Policy and Strategy (2020–2030) provides a strategic roadmap for accelerating digital governance and improving public service delivery.

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Emerging technologies such as artificial intelligence (AI), blockchain, cloud computing, big data analytics, the Internet of Things (IoT), machine learning, and robotic process automation are expected to revolutionise public administration. Artificial intelligence can support automated customer service, predictive policy analysis, fraud detection, and intelligent decision support systems. Blockchain technology offers opportunities for secure digital identity management, transparent procurement, land administration, and electoral management.

The continued expansion of digital identity systems through the National Identity Number (NIN) programme will enhance integration of government services, financial inclusion, and national security. Likewise, increasing adoption of electronic healthcare systems, digital education platforms, smart agriculture, e-justice, and electronic procurement will improve efficiency across multiple sectors.

The implementation of Nigeria's Data Protection Act and strengthened cybersecurity frameworks is expected to enhance public confidence in electronic government services while promoting secure digital transactions.

If supported by sustained political commitment, adequate funding, continuous institutional reforms, effective regulatory frameworks, and widespread digital inclusion, e-governance has the potential to transform Nigeria into a digitally enabled, transparent, efficient, and citizen-centred public administration.

5.1 Conclusion

E-governance has become an indispensable instrument for improving governance and public service delivery in Nigeria. Through the application of Information and Communication Technologies, government institutions have made considerable progress in enhancing administrative efficiency, transparency, accountability, financial management, revenue generation, and citizen participation. Digital initiatives such as the Treasury Single Account, Government Integrated Financial Management Information System, Integrated Payroll and Personnel Information System, National Identity Management System, Corporate Affairs Commission online registration platform, electronic tax administration, and Computer-Based Testing by the Joint Admissions and Matriculation Board demonstrate the transformative impact of e-governance on public administration.

Despite these achievements, numerous challenges continue to hinder the full realisation of e-governance objectives. Inadequate ICT infrastructure, unstable electricity supply, cybersecurity threats, insufficient funding, low digital literacy, institutional resistance to change, fragmented information systems, policy implementation gaps, and the digital divide remain significant obstacles to effective digital governance.

Addressing these challenges requires sustained government commitment, increased investment in ICT infrastructure, stronger legal and regulatory frameworks, enhanced cybersecurity, continuous capacity building, improved institutional coordination, and inclusive digital policies that ensure equitable access to electronic government services. Collaboration among government institutions, the private sector, civil society organisations, academia, and international development partners will further strengthen Nigeria's digital governance ecosystem.

Ultimately, the success of e-governance should be measured not merely by the number of technologies deployed but by its capacity to improve citizens' quality of life through efficient, transparent, accountable, and responsive public service delivery. As Nigeria continues its digital transformation journey, e-governance will remain a critical driver of good governance, socio-economic development, and sustainable national progress.

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