DIGITAL TRANSFORMATION AND PUBLIC SERVICE EFFICIENCY: A COMPARATIVE ANALYSIS OF E-GOVERNMENT TRAJECTORIES IN NIGERIA AND SOUTH AFRICA

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Abstract
Digital transformation has become a central strategy for improving accountability, transparency and administrative efficiency all over the world. In Africa, various governments are gradually adopting electronic government (e-government) to enhance governance and public sector performance and productivity. The paper examines the trajectories of e-government development in South Africa and Nigeria, focusing on their influences on public service delivery. Using a comparative research approach and drawing from existing literature, institutional reports, policy documents, journals, textbooks, and online platforms, data were gathered from secondary sources using a qualitative research design. Thus, data were analysed using the Content Analysis Method. The study findings indicated that South Africa had recorded greater institutional integration, strong and constant power supplies, digital infrastructure development and citizens have more access to online facilities compared to Nigeria. Both countries are facing challenges regarding digital inequality, limited digital literacy, inadequate infrastructure and lack of digital literacy. The study also concludes that effective and efficient digital transformation requires robust commitment, investment in infrastructure, institutional coordination and centred service design. It concludes that Nigeria, as a nation with over 250 million population, must prioritise the development of effective national policies on e-government that promote transparency, accountability, and good governance to achieve sustainable development and improve citizens' well-being.

Keywords: E-government, Digital Transformation, Public Service Efficiency, Nigeria, South Africa.

1.0 Introduction
Information and communication technology (ICT) has changed the way governments communicate, operate, interact, make transactions with citizens and deliver services in both public and private sectors. No doubt that digital transformation has become a major aspect of modern governance, enabling government to improve service delivery, increase transparency, reduce administrative and bureaucratic delays, strengthen accountability and reduce administrative costs. The e-government initiative was introduced in the early 90s; hence, Nigeria introduced and adapted e-government in the early 2000s with a clear disposition for improving public service delivery and transparency in governance and to make public service accessible and transparent.

Countries in Africa are increasingly adopting digital governance as a strategy to address inefficiencies with outmoded bureaucratic systems that hitherto characterized its public service. As pointed out by Mudey (2026), as developing countries increasingly invest in digital frameworks, e-government is widely prioritised not merely as a technological upgrade, but as a structural anti-corruption mechanism. This generally aims at achieving simple, moral, accountable, responsive and transparent public service.

Nigeria and South Africa are currently the countries with the largest economies in sub-Saharan Africa. According to NBS (2026), Nigeria's real Gross Domestic Product (GDP) grew by 3.89%

year-on-year in the first quarter of 2026, marking a visible improvement from the 3.13% growth recorded in Q1 2025. The IMF projects overall economic growth to hit 4.1% for the full year 2026 which is set to overtake that of South Africa, shooting the country back to its peak position in the continent. Such sizes of the economies have necessitated a robust commitment to ICT deployment in service provision especially in the public sector. Despite similarities in development goals, their trajectories in implementing e-government reforms differs considerably due to variations of government and private institutional capacity, policy frameworks and government structure.

In the present century, which is termed the era of the Fourth Industrial Revolution, digital transformation serves as a foundational pillar for modernising bureaucratic infrastructure and ensuring an improved public service in both efficiency and transparency. For Sub-Saharan Africa's two largest economies, Nigeria and South Africa, the adoption of e-government strategies aims to eliminate administrative bottlenecks, curb institutional corruption, and ensure maximum utilisation of public services. This, when ideally implemented, should streamline the interface between citizens and the state, leading to drastically reduced transaction times and operational costs while fostering transparency.

However, a profound disconnect exists between the formulation of high-level digital policies and their localised operational execution. As succinctly put by Kayode (2015), the most critical barrier to the success of e-government in Nigeria is the lack of robust ICT infrastructure and reliable energy supply. Systematic reviews show that over 90% of studies identify poor digital architecture and persistent power failure as primary roadblocks. Ministries, departments, agencies, and telecommunications base stations are forced to rely on expensive alternative power generators, inflating the operating costs of digital tools and causing frequent system downtime. This is clear evidence that Nigeria's digital transformation is routinely crippled by acute infrastructural deficits, persistent power grid instability, and fragmented institutional frameworks that cut across ministries, departments, and agencies. Conversely, South Africa boasts a more advanced, highly industrialised digital and financial ecosystem with 75% of its population being internet users (Mongae, 2024);despite this, its e-government initiatives are structurally bottlenecked by massive socio-economic disparities, legacy bureaucratic resistance, severe institutional capacity deficits at the municipal level, and recurring logistical and energy supply shocks. As bitterly discussed by Senamele (2025), a major internal barrier within the South African civil service is the acute shortage of public officials equipped with the modern digital proficiencies required to manage virtual systems. There is notable institutional resistance to technological innovation and a deficiency in capacity-building frameworks. Without continuous software and cybersecurity training, government departments struggle to maintain platform usability, perform system evaluations, and mitigate data management risks. The shortage of skilled manpower to handle e-government initiatives has weakened its implementation in the country's MDAs. Consequently, rather than bridging governance gaps, poorly executed digital rollouts risk exacerbating the digital divide and entrenching bureaucratic delays.

It is against this backdrop that the paper intends to scrutinise digital transformation and public service efficiency in Nigeria and South Africa, which seek to identify factors influencing e-government success and evaluate the extent to which digital initiatives have enhanced public service delivery.

Objectives of the Study

The central objective of this paper is to compare the digital transformation and public service delivery efficiency of Nigeria and South Africa. However, other specific objectives include:

i. To examine the concept and evolution of e-government in Nigeria and South Africa
ii. To assess the contribution of digital transformation on public service efficiency in Nigeria and South Africa.
iii. To compare the e-Government trajectories of Nigeria and South Africa.
iv. To identify obstacles affecting digital transformation initiatives
v. To recommend strategies for improving digital governance and service delivery

Literature Review

E-government or electronic government is the process of government communication and administrative processes and procedures make online through using technologies such as Internet, interactive voice response, call centers and small computer centers and kiosk. According to Nkgapele, S. M. (2024) that e-government "is the continuous optimization of government service delivery, constituency participation and government by transforming internal and external relationship through technologies (internet and new media)".

The philosophy of e-government, digital governance, e-service, e-governance and their related nexus will be defined and utilize as concept in this study. Although similar concept by UNESCO (2005) explained e-government as the application of ICT in the government procedure to facilitate effective, efficient, transparent and speedy interactions with concerned citizens as well as business or other arms of government. In simple terms, digital governance refers as framework of policy, technological tools that guide how government, organization and other concern institutions function and use digital technologies to manage operations, deliver services and engage with stakeholders (OECD, 2020). Aderonmu, Owulabi, & Iyiola, (2019) highlighted that the integration on information and Communication Technology (ICT) into Nigerian public sector as paradigm shift from traditional bureaucratic systems of digital governance to improve efficiency, accountability and speedy process in public service delivery. According to Sing &Naidoo (2004); Naidoo, G. & Kuye, (2003) revealed that three critical metrics to measure the effectiveness of e-Government is applicable and service relevance; thus, citizen and business satisfaction; conservative mind of trust. The adaptation of e-government as key is to find technology applications that can strive the transactions towards a new model of doing business (Akgül, 2024). In an era where technology advance reshaping the world landscape, Nigeria is one of the most populous nation in Africa that stands threshold on digital transactions that promises to revolutionize its governance and public administration. The arrival of e-government by combination of technology and machinery of government, aiming to enhance transparency, accountability, efficiency, effectiveness and citizen engagements is a testimony for Africa taken right directions (Masinde, M., & Mkhonto, 2019). According to Aderonmu, Owulabi, & Iyiola, (2019) and similarly in Maduabum (2008) revealed that while Nigerians embrace of e-government carries with the promise for anticipate future, it equally presents complexity-set of challenges and dilemmas that require considerate and thoughtful considerations. Farogy *et al*, (2020); Hujrat *et al*, (2022); Rust and Alsarraaf *et al*, (2023); Alsarraf, (2023) revealed that in the local municipalities governance, the use of electronic government service has become imperative force in reshaping communication and interactions between government authorities and other private institutions in many African Countries. Therefore, countries are striving to provide services through e-government whereas online products and services to the citizens of states (Faroqi*et al.,* 2020). Murezni and Oliver (2017) highlights that in today's digital era, e-government has emerged as transformative instrument for making credible changes to the service delivery for counties particularly in African states similarly found in Nkgapele, S.M. (2024) study also mentioned that promoting accountability and transparency and citizen participation provides government quality services. Tajedo-Romero *et al*., (2022); Nkgapele, (2024) similarly posited that e-government serves as a crucial mechanism to foster citizen engagement thorough creating opportunities for general public to take parts in the implementation and decision making all through e-participation thereby promote its adoption and usage.

In Nigeria as a nation with dynamic blend of challenges and enormous opportunities, that adapt and implement e-government emergence as auspicious avenue for addressing long-standing administrative challenges, reducing severe corruption and promoting citizen engagement. Nonetheless, any transformative journey, the integration of e-government into the public administrative system brings with range of both positive and negative consequence (Edward and Gabriel, 2024). Therefore, comprehensive explosion aims to examine into multifaceted landscape of e-government in Nigeria. Moreover, Nigeria is slowly making commendable strides in harnessing digital technologies for governance, the exertion journey is devoid of obstacles and

dilemmas. To examine the pro and cons of this technological paradigm shift, the effective use of e-governance presents opportunities for modernization, citizen empowerment, cost reduction and potential obstacles including digital divides, data security concerns and the need for proper capacity-building programs (Aderonmu *et al,*2019).The E-Government initiatives will aids transform public service organizations, however organizations must understand the factors that will hinder and those that will kindle this change. E-Government therefore deals with the transformation of government business engagement to citizens for sustainable developments and other related factors (Galushi & Malatji, 2022). An indication is given of e-Government initiatives undertaken by the South African government in the public service for good governance and less cost of government activities (Naidoo & Van Jaarsveldt, 2004).

Masinde & Mkhonto (2019); Singh (2007); Naidoo *et al*, (2004); Muridzi, G., & Dhliwayo (2025) examined that around 2001, in line with its constitutional mandate, the Department of Public Service and Administration (DPSA) developed an e-Government policy as part of its overall service delivery improvement government programme. In Groundwork for a more convenient, efficient, effective and integrated government service delivery system, the DPSA had commissioned a study in the South African public service. Edward and Gabriel (2024); Naidoo, G. & Kuye, J.O. (2003) posited that the objective of the scoping was to label the optimum process by which government can deliver services to citizens was critical life cycle events, rather than as defined by government structures and systems.

i. improved public access to government information and services;
ii. improved quality and cost-effectiveness of government services;
iii. effective information sharing and communication with its citizens';
iv. improved opportunities for participation in democratic institutions; and
v. processes better relationships with business people and private citizens

Clear evidence have revealed that while both Nigeria and South Africa have invested in e-government to improve public service delivery, South Africa has achieved more advanced and integrated framework, though both nations struggle with significant challenges in terms of infrastructure deficits and bureaucratic resistance where by South Africa has accomplished digital transformation through e-government project compare to Nigeria which implementation and lack of stable internet system and many other related factors remained obstacles as mentioned by theWorld Bank (2023) and United Nations (2024) on *accelerating digital transformation for sustainable development; digital development overview of Sub-Saharan Africa survey*. According to Emmanuel; Lawal and Olasunkanmi (2024), "e-government development is more consistent and centrally coordinated in South Africa, while Nigeria's efforts, though ambitious, have seen more fragmented implementation and lower success rates which similarly revealed in the studies byTejedo-Romero *et al*, (2022); Nkohkwo and Islam (2013)emphasizing on the challenges to the successful implementation of e-government initiative particularly in Sub-Saharan

Although it is no doubt agreed that the internet is a prodigious way to connect between government departments, citizens, as well as businesses in South Africa. However, there is also an unresponsive human element that is lacking with this approach. Many government departments and agencies, businesses and consumers in South Africa are still wary of conducting extensive business over the internet because of the lack of predictable legal protection and an environment governing transactions (Naido, 2008). Furthermore, many government sites in South Africa are no more than electronic brochures and the like. As such, there is a dire lack of understanding of the powerful role the website can fulfil. For instance, South African government sites on the website look electronically enabled but generally have stringencies (Galushi, & Malatji, 2022). Hence, from an online strategy point of view and equally stated that there is no consideration of the customer. Consequently, there is no effort to market these sites online, as similarly mentioned by Galushi & Malatji (2022); Naidoo (2004) further stated that very few government departments in South Africa are employing electronic-model, despite claims that online element of the web is key to entrepreneurial government based on business principles and cost savings.

A Comparison between E-government in South Africa and Nigeria

South Africa significantly outperforms Nigeria in e-government statistics according to the United Nations E-Government Survey (2024). South Africa has higher scores across all key indices, including the overall E-Government Development Index (EGDI) and its sub-components. However:

1. Information and communication Technology (ICT) infrastructure is scarce in geographical areas in which the majority of citizens live because of the apartheid separate development legacy.
2. General education level is still low; ICT degrees are difficult to obtain and informal education on IT
3. general education level is lower and ICT degrees are difficult to obtain, hence there is dependence on introduced ICT goods and services, rather than the development of local solutions within the milieu.
4. The organisations have less and shorter experience in using ICT; it takes some time to offer an inclusive range of services and leverage ICT capabilities.
5. E-Government readiness varies significantly between government departments, provinces and local authorities.
6. Information sharing is not common among public sector organisations, and sometimes within an organisation itself, given the old silo/command structure; the provision of seamless services is usually hampered by fragmented information systems, and fragmented systems will take a while to inter-operate.
7. The South African government finds it difficult to recruit and retain competent ICT professionals. The government accomplishments require some in-house champions to undertake planning and oversee development and other challenges.

Table 1: E-government Statistics (2024)

E-Government Statistics (2024 Values)

Index	Nigeria Score	South Africa Score	World Average
EGDI (Overall)	0.481	Data not explicitly in snippets	0.6382
Online Service	Data not explicitly in snippets	Data not explicitly in snippets	Data not explicitly in snippets
Telecommunication	Data not explicitly in snippets	0.895	Data not explicitly in snippets
Human Capital	0.630 (2020 value)	0.803	Data not explicitly in snippets
E-Participation	0.370	Data not explicitly in snippets	Data not explicitly in snippets

Source: Retrieved from e-government database: https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/125-Nigeria

Note: Specific 2024 values for all South Africa metrics were not available in the snippets, but the data consistently indicates a significant lead over Nigeria.

Challenges of E-government in Nigeria

Adegbola & Oyewole (2020)study revealed that critical barriers, including weak digital literacy, weak Information and Communication infrastructure, constant power supply, inclusivity and entrenched corruption, continued to challenge full transformation in most Nigerian Ministries, Departments and Agencies (MDAs). The study concludes that while Nigeria has been making

remarkable progress, enhanced digital literacy and sustainable digital governance require stronger investment, policy consistency and a transparent system for citizen inclusivity. Edward and Gabriel (2024) highlighted that the adoption and implementation of e-government have emerged as a positive avenue for addressing long-standing administrative challenges, reducing severe corruption and promoting citizen engagement. Nigerian e-government has not been addressing the supportive baseline, such as basic power, training government employees and other stakeholders to have sustainable knowledge and skills that will support its policy on e-government platforms (Nwambuko, 2025).

Nwambuko *et al*, (2025) stated that from the targeted 300 respondents drawn from three crucial Federal government MDAs of Nigeria and citizen interacting with e-government platforms, the study revealed that digital governance initiatives have been improving and there are good signs in terms of efficiency and transparency, particularly through federal government platforms including; Integrated Payroll Information System (IPPIS), Treasury Single Account (TSA), Government Integrated Financial Management Information System (GIFMIS) but the result shows that systematic barriers including low digital literacy, weak Information Communication Technology and entrenched corruption continue to undermine full-sized transformation compare to other nations.

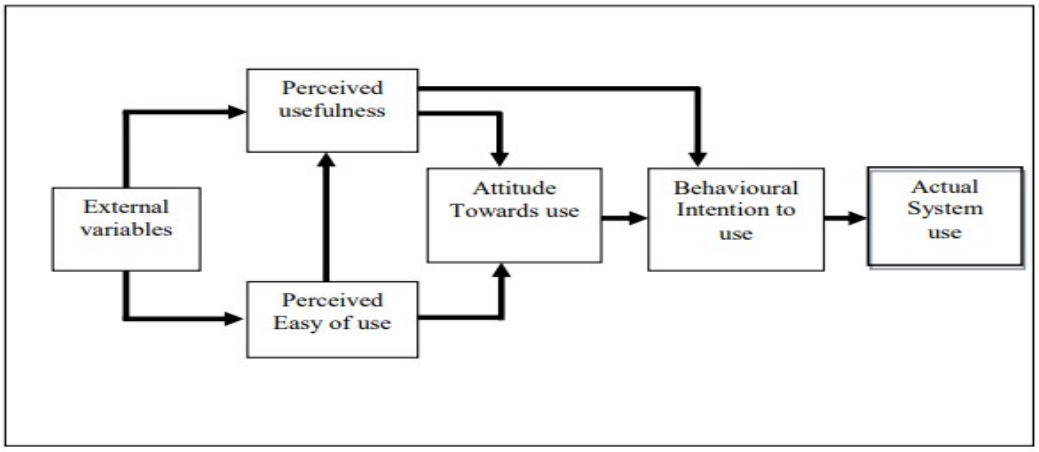
Table 2:
Nigeria E-government Development Index as at 2024

2024 Nigeria	2024	2022	2020	2018	2016	2014
E-Government Development Index rank	144	140	141	143	143	141
E-Government Development Index value	0.48146	0.4525	0.4406	0.3807	0.3291	0.29287
E-Participation Index rank	115	117	114	117	118	97
E-Participation Index value	0.3699	0.3068	0.4881	0.4831	0.35593	0.33333
Online Service Index value	0.53719	0.525	0.5176	0.5278	0.41304	0.30708
Telecommunication Infrastructure Index value	0.48355	0.3886	0.3534	0.1883	0.19582	0.19045
Human Capital Index value	0.42357	0.4439	0.4507	0.4261	0.37843	0.3811

Source: Retrieved from E-government Knowledgebase:https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/125-Nigeria

Theoretical Framework
Technology Acceptance Model (TAM)
A theory developed by Fred Davis in 1989, TAM users' acceptance and adoption of technology including; *Perceived Useful (PU)* the degree of which users believe a system improves performance, *perceived Ease of Use (PEOU),* the level users believe a system is easy to use. The TAM application to e-Government is that citizens and public servants are more likely to adopt e-government services when they perceive relevance as useful, assessable and user-friendly. This model helps explain factors influencing citizens on digital and online government services. Davis (1989) explains that the influence of how a system can be appliedis known as perceived usefulness (PU). Public servants also accept a digital initiative that is seen to be both easy to use and making the job easier. Public servants are bound to reject a digital software that might require a technical skill that they may not have.

Figure 1: Technology Accepted Model (TAM)



Adopted from: Ajzen (1991) in Gibson M., &Shepherd D., (2025).

Methodology

The study adopted a qualitative research design method using content analysis to analyse policy documents, published data, statistical reports, and other relevant texts by identifying themes, patterns, and trends. The data were solely collected through secondary sources such as peer-reviewed journal, textbooks, official reports, and internet material.

Table 3:
Coding Framework for e-government development in Nigeria and South Africa

Codes	Themes	Nigeria Findings	South Africa Findings
ICT Infrastructure	Digital Infrastructure Development	Uneven internet connectivity, inadequate broadband coverage, unstable electricity supply	Relatively advanced ICT infrastructure with wider broadband penetration and better electricity access
Government Policy	Policy and Regulatory Framework	Existence of National E-Government Master Plan but weak implementation	Strong policy implementation supported by clear digital transformation strategies
Service Delivery	Public Service Efficiency	Gradual adoption of online services such as IPPIS, Treasury Single Account (TSA), and online tax systems	Extensive online government services including e-filing, social grants, and municipal services
Citizen Participation	Public Engagement and Accessibility	Low digital literacy and limited citizen participation in online governance	Higher citizen engagement through digital platforms and e-participation initiatives
Institutional Capacity	Human Resource and Administrative Capacity	Inadequate technical expertise and resistance to organizational change	Better-trained workforce and stronger institutional support mechanisms
Transparency	Accountability and Anti-Corruption	E-government initiatives contribute to reducing corruption but challenges persist	Digital systems improve transparency and accountability in public administration
Funding	Financial Commitment	Insufficient funding and dependence on external support for some projects	More sustainable funding mechanisms and stronger public investment
Cybersecurity	Information Security and Privacy	Emerging cyber security framework with implementation challenges	More developed cyber security regulations and institutional structures

Codes	Themes	Nigeria Findings	South Africa Findings
Digital Inclusion	Accessibility and Equity	Significant urban-rural digital divide	Efforts toward broader digital inclusion, though inequalities remain significant
Innovation	Technological Advancement	Slow adoption of emerging technologies	Greater integration of digital innovation and smart governance initiatives

Sources: Federal Government of Nigeria (2023); NITDA (2024); Adam, I.O. (2020); Galushi & Malatji (2022); Survey by the United Nations. (2024); Federal Government of Nigeria. (2020); International Telecommunication Union. (2023).

The above coding analysis indicated that while Nigeria and South Africa have adapted e-government as a tool for improving governance and public service delivery. It is evident that South Africa has accomplished greater success due to better policy implementation effectiveness, cyber security management, and broader lesson embayment's and high institutional capacity (UN, 2024; UNESCO, 2022). Nigeria has achieved progress in its e-government but can benefit from similar adopted strategy as a lesson from South Africa in some areas such as infrastructural development, implementation effectiveness, cyber security management, digital inclusion. Thus, competitive coding framework provides a foundation for understanding the factors that influencing e-government development and offering insights for policy improvement in Nigeria as similarly mentioned by the (UNs, 2023; World Bank, 2024).

Thematic Analysis

Policy and institutional framework

Both counties have established policies aimed at providing digital governance. Nigerians National Digital Economy policy provides a framework for digital transformation whereas South Africa has implemented comprehensive and integrated e-government policies. Thus, findings suggest that policy consistency and institutional coordination contribute significantly to successful implementation.

Digital Infrastructure Development

The coding revealed that infrastructure remains a crucial determinant of e-government success in both nations. South African proves stronger success ICT infrastructure that characterized by higher internet penetration and broadband accessibility. In comparison and contrast, Nigeria continues to face challenges associated with inadequate power supply and limited connectivity in rural areas.

Information Security and Cyber security.

This has emerged as a significant theme, therefore counties recognize the importance of protecting digital government systems. Meanwhile, South Africa exhibits more developed cyber security framework. Nigeria continues to strengthening its legal institutions for cyber security protections.

Implementation challenges

Challenges identified include funding limitations, resistance to organizational change, infrastructural deficiencies and digital inequality. Thus, the harshness of these challenges is greater in Nigeria than in South Africa.

9.8 Final Answer: Findings from the literature review and data analysis of different studies and published data policies of e-government starting from Global, regional and narrow down to South Africa and Nigeria; it has clearly revealed that Nigeria has long way to go notwithstanding implementing e-government policy adjustment on various projects to promote transparency, accountability e.g. G2G where GIFMISS, IPPIS, TSA platforms have reduced corruption and implanted figure in governance tremendously for economic growth, social welfare, environmental

sustainability, and cultural preservation as similarly seen in study by Aderonmu, Owulabi, & Iyiola, (2019). The political landscape and institutional strength directly impact how policies are created and implemented.

Table 1.3 below, has clearly analyse and compared the e-government development in Nigeria and South Africa.

Table 4:
Comparison of e-government development of Nigeria v South Africa

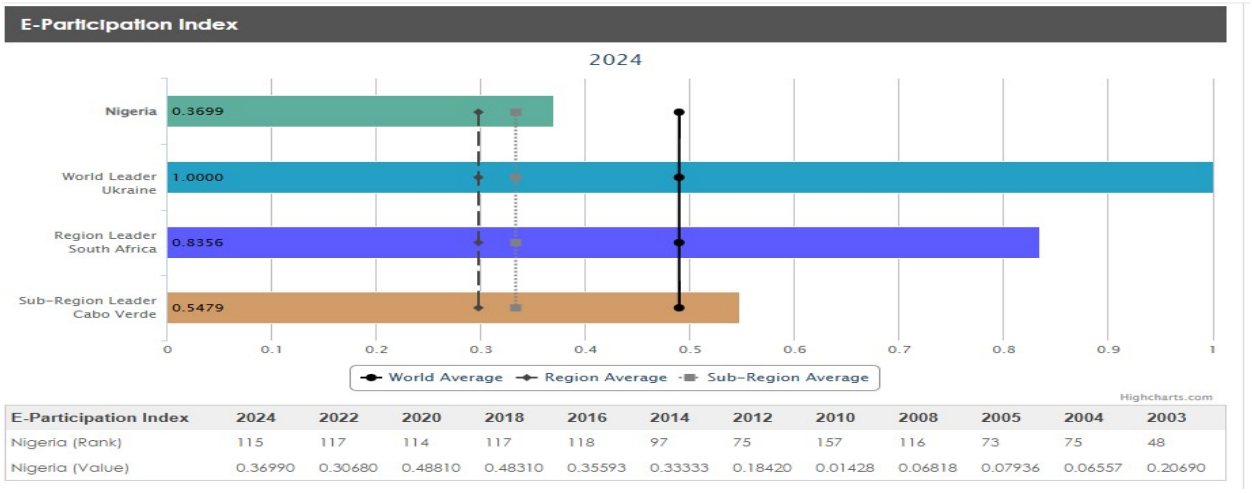
Features	Nigeria	South Africa	Result/Remark
Maturity stage	Nigeria has mixed results, with some services being digitized but weak transactional capabilities. While foundational initiatives exist, implementation is often fragmented. With the recent digital transformation of e-government.	More advanced, with mature, comprehensive online services and significant progress toward integrated digital public infrastructure	In term of maturity South Africa has gone far considering its technological infrastructure where Nigeria is still struggling with unstable internet challenges, lack of basic power supply,
Infrastructure	Nigeria faces significant infrastructural deficits, especially in rural areas, including poor and inconsistent power supply, low broadband penetration, and high internet costs (United Nations, 2024). Existence of National E-Government Master Plan but weak implementation	Higher internet use and better infrastructure, though uneven access persists between urban and rural areas similarly mentioned by Nkgapele (2024).Relatively advanced ICT infrastructure with wider broadband penetration and better electricity access	Infrastructure remain relatively challenge in Africa particularly in Nigeria. Strong policy implementation supported by clear digital transformation strategies World Bank. (2023).
Initiatives	***Treasury Single Account (TSA)***: A unified bank account system for federal government revenue to reduce corruption. **Integrated Payroll and Personnel Information System (IPPIS)**: An automated employee payroll system. **National Identity Management System (NIMS)**: A centralized database for citizens. **Government Service Portal (services.gov.ng)**: A central hub for various government service	**Single Digital Identity (Mzansi App)**: A forthcoming initiative for a centralized digital ID to access all government services. **SARS e-filing**: A highly successful electronic tax submission and payment system. **e-Justice**: Digitization of court administration to reduce backlogs. **Home Affairs National Identification System (HANIS)**: A biometric system for identification and verification.	It is found that gradual adoption of online services such as IPPIS, Treasury Single Account (TSA), GIFMIS, and online tax systems in Nigeria with less encouragements on digital skills. Extensive online government services including e-filing, social grants, and municipal services has been found in both counties similarly found by Muridzi & Dhliwayo (2025).
Challenges	**Fragmented approach**: E-government is often implemented by individual ministries without a central framework. **Weak policy and political will**: Inconsistent policies and bureaucratic resistance often undermine progress. **Low digital literacy**: A significant portion of the population lacks the skills to use e-services. **Corruption**: Manual processes are often favored to facilitate corrupt practices.	**Digital divide**: Similar to Nigeria, a significant gap in internet access and digital literacy exists between urban and rural populations. **System incompatibilities**: Historical fragmentation of government systems has led to incompatible databases	Information and communication Technology (ICT) infrastructure is scrawny in geographical areas in which the majority of citizens live because of the apartheid separate development legacy. E-Government readiness varies significantly between government departments, provinces and local authorities. The information

			sharing is not common among public sector organizations, and sometimes within an organization itself, given the old silo/command structures, hence the provision of seamless services is usually hampered by fragmented information systems, and fragmented systems will take a while to inter-operate. Both countries government finds it difficult to recruit and retain competent ICT professionals Government accomplishments require some in-house champions to undertake planning and oversee development and many other challenges.
Governance	Lacks a consistent, structured approach to e-governance, resulting in duplication of efforts and inefficiencies.	Adopts a more structured approach with a central roadmap and active inter-ministerial coordination, aiming for a cohesive ecosystem.	Greater integration of digital innovation and SMART e-governance initiatives

Source: Dada *et al,* (2020); Aderonmu, *et al.,* (2019); Singh, (2007); World Bank (2022); United Nation (20230); Muridzi & Dhliwayo (2025).

Nigerian and South African e-government development shares similar goals of improving service delivery, transparency and accountability, but South Africa has gone far with significant achievement through a more integrated, stable, consistent, reliable, and sophisticated systems. Key differences lie in infrastructure quality, strategic integration, and digital inclusivity.
Based on the programs and policies on E-government in South Africa, it is clear that Nigerian e-government has long way to go and the following are some issues which government needs to implement.

Figure 2: E-Government participation Index of Nigeria South Africa and other Countries



E-Participation Index	2024	2022	2020	2018	2016	2014	2012	2010	2008	2005	2004	2003
Nigeria (Rank)	115	117	114	117	118	97	75	157	116	73	75	48
Nigeria (Value)	0.36990	0.30680	0.48810	0.48310	0.35593	0.33333	0.18420	0.01428	0.06818	0.07936	0.06557	0.20690

Source: United Nation Survey, 2024

Figure 2 aboveshows a clear evidence that strategic efforts should be speedily made to coordinate and embrace host of stakeholders, to ensure that policies, procedures and processes are put in place, that critically address the needs. Naidoo (2008; 2023) stated that South African government should see its role as an enabler, facilitator, educator and law enforcer to prevent Cyber Crimes as commonly experienced in Nigeria.

Table 4: Table: Top Ranking Countries of E-Government in Africa

Country	*Rating class*	*EGDI rank*	*Subregion*	*OSI*	*HCI*	*TII*	*EGDI (2024)*	*EGDI (2022)*
South Africa	V2	40	Southern Africa	0.8872	0.8026	0.8951	0.8616	0.7357
Mauritius	V1	76	Eastern Africa	0.5903	0.7456	0.9159	0.7506	0.7201
Tunisia	HV	87	Northern Africa	0.5951	0.6497	0.8357	0.6935	0.6530
Morocco	HV	90	Northern Africa	0.5618	0.6078	0.8827	0.6841	0.5915
Seychelles	H3	92	Eastern Africa	0.4638	0.6769	0.8913	0.6773	0.6793
Egypt	H13	95	Northen Africa	0.7002	0.6150	0.6946	0.6699	0.5895
Ghana	H2	108	Western Africa	0.6084	0.5586	0.7281	0.6317	0.5824
Kenya	H2	109	Eastern Africa	0.7770	0.5271	0.5901	0.6314	0.5589
Cabo Verde	H2	111	Western Africa	0.6892	0.5694	0.6128	0.6238	0.5660
Botswana	H2	112	Southern Africa	0.3985	0.5719	0.8649	0.6118	0.5495
Eswatini	H2	113	Southern Africa	0.4557	0.5836	0.7851	0.6081	0.4498
Namibia	H2	114	Southern Africa	0.4996	0.5738	0.7288	0.6007	0.5322
Algeria	H2	116	Northern Africa	0.3320	0.6418	0.8129	0.5956	0.5611
Rwanda	H2	118	Eastern Africa	0.8207	0.5467	0.3724	0.5799	0.5489
Gabon	H2	121	Middle Africa	0.3187	0.5772	0.8263	05741	0.5521
Cote D'Ivoire	H1	124	Western Africa	0.5219	0.4848	0.6693	0.5587	0.5467
Libya	H1	125	Northern Africa	0.0808	0.5951	0.9639	0.5466	0.3375
Zambia	H1	130	Eastern Africa	0.4958	0.6225	0.5088	0.5424	0.5022
Senegal	H1	135	Western Africa	0.4749	0.3380	0.7328	0.5162	0.4479

Source: United Nations Survey (2024)

Table 4 above shows that while South Africa is topping the chart for e-government development in Africa, Nigeria does not appear among the first twenty countries in Africa. Within the West African sub-region, Ghana is taking the lead with a global ranking of 108 as against South Africa's 40.

Lessons Nigeria can learn from South Africa

Nigeria has many lessons to learn from South Africa, especially in view of the ranking in Table 4 above.

1. Adopt a unified national digital public infrastructure and **create a central framework**: South Africa's approach of establishing a cohesive Digital Public Infrastructure (DPI) with a single digital identity (Mzansi App) and data exchange is more effective than Nigeria's fragmented, ministry-by-ministry approach. Also, to ensure interoperability, Nigeria can learn to enforce standards for information exchange across ministries to avoid system incompatibilities and create a seamless citizen experience (Adegbola & Oyewole 2020; Heeks, 2002).

2. Strengthen leadership and political will: Nigerian leaders and policymakers must demonstrate consistent political will to overcome institutional inertia and bureaucratic resistance to digital reforms. A structured governance framework is needed to oversee the e-government programme and ensure it aligns with national strategies, as similarly stated by Naidoo, (2008).

3. Prioritise digital inclusion: South Africa's use of mobile-compatible services and community access points like tele-centres can help Nigeria address the large rural-urban digital divide. Beyond basic infrastructure, Nigeria must implement continuous digital literacy training for both public servants and citizens to increase adoption.

4. Enhance security and privacy measures: Nigeria must prioritise cyber security, legal frameworks, and data protection to build citizen trust, which is critical for the adoption of e-services. By replicating South Africa's e-filing success and integrating anti-corruption mechanisms, Nigeria can reduce opportunities for graft found in manual processes (Heeks, 2005).

5. Embrace a user-centric design: Following South Africa's lead, Nigeria's e-government platforms should be designed around citizens' life events, making services easier to find and use. Gather citizen feedback: Implementing robust feedback mechanisms, like South Africa's contact centres, can ensure that e-government services genuinely meet the needs of thxe public.

Summary of Findings

1. In Nigeria, e-government started with separate computer systems in different departments and later shifted to a more organised approach under the National E-Government Master Plan. Still, most planning happens at the federal level, and it has been slow to spread to state and local governments. However, in South Africa, e-government began with modernisation efforts following apartheid. It later evolved into a formal system shaped by the State Information Technology Agency (SITA) and the National Development Plan (NDP) 2030. The country sees e-government as a way to make democracy more accessible, but old social and geographic divisions remain.

2. In Nigeria, digital transformation has significantly led to efficiency, especially within fiscal and revenue-generating settings. Initiatives such as the Treasury Single Account (TSA), the Integrated Personnel and Payroll Information System (IPPIS) have notably enhanced transaction transparency and also cut institutional leakages in the country. In South Africa, digitalisation has also enhanced high-level civic and financial interactions. The automation of the South African Revenue Service (SARS) filing systems, integrated municipal billing portals, and digitized business registration frameworks have, to a greater extent, reduced transaction costs, accelerated processing speed, and made institutional data-handling more effective.

3. The study reveals that while both nations are the economic anchors of Sub-Saharan Africa, they follow highly asymmetric e-government tracks. Nigeria's trajectory is characterized by rapid, bottom-up fintech innovation in the private sector that drastically outpaces a rigid, slow-moving public sector bureaucracy. Conversely, South Africa's trajectory is characterized by top-down institutional maturity, boasting a highly advanced, integrated financial and digital ecosystem that operates efficiently at the macro level but struggles with deep socio-economic delivery gaps at the municipal grassroots level.

4. The main obstacle to effective e-government implementation are severe infrastructural deficits, including acute power grid instability and fragmented, unintegrated institutional systems. Additionally, the lack of robust cyber-legal frameworks and active institutional resistance from actors profiting from bureaucratic opacity hamper system integration. While in South Africa, the core challenges are rooted in economic accessibility rather than a lack of basic technology. High data costs create affordability barriers for a majority of citizens, while persistent municipal fiscal distress, local capacity shortages, and a specialised public-sector ICT skills deficit stall local-level rollout.

Conclusion and Recommendations

Both Nigeria and South Africa are facing challenges in the full adoption of e-government policies while that of Nigeria relates to power and infrastructure, South Africa suffers high cost of internet services and shortages of skillful personnel especially at the municipal levels. It is against this backdrop that the following recommendations are made:

1. Decentralisation of the National E-Government Master Plan by the Federal Government: The federal government should establish a matching-grant fund or technical assistance framework to help state and local governments adopt unified digital platforms similar to the ones at the federal

level. E-government should not stop at Abuja; it requires localised frameworks that mirror federal successes.

2. Build resilient digital infrastructure: Government should provide critical and reliable infrastructure for effective e-government adoption in the MDAs. One effective way is to prioritise solar-powered, off-grid digital centres for local government offices to bypass power grid instability. To address institutional resistance to IT change, government should also tie agencies' budgetary allocations directly to their compliance with digital systems (such as TSA and IPPIS). They should also mandate a transition to cyber-legal frameworks that criminalise deliberate data-handling bypasses.

3. The South African government should shift the focus from macro-level technological capability to economic accessibility by implementing a Zero-Rating policy for all essential municipal and national e-government portals, ensuring citizens do not need active data balances to access basic services. They should also build a partnership with telecommunication companies to ensure the provision of subsidies that will enhance civic access to the internet.

4. The South African government should also address the ICT skills shortage, especially at the grassroots level. This can be achieved by launching a National Public-Sector ICT Cadet Programme through SITA to deploy specialised tech talent directly to struggling municipalities.

5. The two African nations - Nigeria and South Africa, should establish a formal channel for technology transfer in order to learn from each other's asymmetric strengths. South Africa can learn how to foster grassroots inclusion using low-cost technology from Nigeria. Nigeria can also learn from South Africa how they can build institutional centralized structure just like SITA, and how to implement a macro-level system that is very organised, just like South Africa's SARS.

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