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THE NATIONAL STATE OF DIGITAL INCLUSION IN NIGERIA: A TRANS-CONTINENTAL OUTLOOK

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Abstract

Digital inclusion is a critical driver of socio-economic development and social equity in the contemporary global landscape. This study assesses the current state of digital inclusion in Nigeria within a trans-continental framework, comparing its progress, challenges, and opportunities to those of select African countries and global benchmarks. Nigeria faces significant disparities in infrastructure, digital literacy, and socio-economic access, leading to a stark digital divide that hampers equitable growth. While recent advancements such as increased mobile coverage and government initiatives have propelled the country forward, infrastructural deficits, policy gaps, and socio-economic barriers continue to impede widespread inclusion. Drawing on comparative data from regional and international contexts, this research highlights best practices, innovative solutions, and collaborative strategies that Nigeria can adopt to bridge its digital divide. The findings underscore the importance of integrated policymaking, regional cooperation, and targeted investments to foster a more inclusive digital future. Ultimately, this trans-continental outlook provides a comprehensive understanding of Nigeria's current positioning in digital inclusion, guiding policy frameworks aimed at promoting equitable access, digital literacy, and innovative growth for all segments of its population.

Keywords: Digital inclusion, Nigeria, digital divide, Africa, ICT, socio-economic development, infrastructure, policy, regional comparison, digital literacy

Introduction

Digital inclusion is crucial for fostering equitable access to technology, particularly in rapidly developing regions like Nigeria. This overview examines the national state of digital inclusion, highlighting the challenges and opportunities within the Nigerian context and considering its position in a broader trans-continental perspective. Digital inclusion—the equitable access to and use of information and communication technologies (ICT)—has emerged as a pivotal factor in fostering socio-economic development, social cohesion, and political participation worldwide (World Bank, 2016). As nations traverse the digital age, disparities in access to digital resources threaten to exacerbate existing inequalities, thereby undermining efforts toward sustainable development. Nigeria, Africa's most populous country, stands at a critical juncture in its journey toward comprehensive digital inclusion, grappling with infrastructural deficits, socio-economic disparities, and policy gaps that hinder equitable access for all segments of its population. Nigeria's digital landscape has

experienced significant growth over the past decade, driven by increased mobile phone penetration, expanding internet services, and government initiatives aimed at digitizing public services. Recent statistics indicate that approximately 49% of the Nigerian population had internet access as of 2023 (National Bureau of Statistics, 2023). This progress underscores a burgeoning digital economy fueled by innovations in fintech, e-commerce, e-governance, and education. However, these advancements are unevenly distributed geographically, socio-economically, and demographically, creating a stark digital divide that threatens to marginalize large segments of the population.

The digital divide in Nigeria is multifaceted, encompassing disparities in infrastructure, affordability, digital literacy, and relevance of available content (Ojo & Oloruntoba, 2020). Rural areas, in particular, face infrastructural deficits, with limited internet coverage, unreliable power supply, and low device ownership. Meanwhile, urban centers tend to enjoy better connectivity, but socio-economic barriers such as poverty restrict equitable access. Additionally, digital literacy remains a significant challenge, especially among marginalized groups such as women, persons with disabilities, and the elderly, impeding their ability to participate fully in digital society (Olumide et al., 2019).

Trans-Continental Perspective

Looking beyond Nigeria, the continent of Africa exhibits a wide spectrum of digital inclusion progress. Countries like Kenya, South Africa, and Rwanda have made substantial strides, leveraging innovative policies, regional collaborations, and technological startups to bridge the digital divide (ITU, 2021). Kenya's pioneering mobile money platform, M-Pesa, exemplifies how inclusive digital financial services can foster economic participation among low-income populations. Similarly, Rwanda's investments in broadband infrastructure and digital skills training have positioned it as a regional leader in digital transformation.

In contrast, many African nations still face significant hurdles—limited infrastructure, political instability, lower literacy levels, and insufficient policy frameworks—that hinder progress in digital inclusion. Comparative assessments reveal that Nigeria's challenges are compounded by its size, population diversity, and infrastructural constraints, making a holistic, trans-continental outlook crucial for contextualizing its opportunities and obstacles in achieving digital inclusion.

Significantly, Understanding Nigeria's current state of digital inclusion within a broader African and global context is vital for devising effective strategies to close the gap. This requires examining infrastructural capacities, policy environments, socio-economic factors, and technological literacy to identify leverage points and barriers. Additionally, considering trans-continental experiences allows policymakers and stakeholders to adopt best practices, innovative financing models, and regional collaborations that can accelerate Nigeria's progress.

Furthermore, digital inclusion is intrinsically linked to Nigeria's broader development goals, including poverty reduction, educational attainment, health outcomes, and democratic participation (United Nations, 2016). As the country aims to harness the benefits of digital transformation, addressing the persistent digital divide remains a paramount challenge and an opportunity for inclusive growth.

By situating Nigeria's digital inclusion status within a broader, trans-continental outlook, this research seeks to fill existing knowledge gaps and contribute to informed policy dialogues. It underscores the importance of regional cooperation, innovation, and multi-stakeholder engagement in overcoming infrastructural deficits, bridging inequalities, and ensuring that no one is left behind in the digital age. Digital inclusion is a fundamental driver of equitable development and social cohesion in the 21st century. For Nigeria—a nation characterized by rapid demographic growth and socio-economic diversity—achieving comprehensive digital inclusion is both a pressing necessity and a formidable challenge. This trans-continental outlook provides a nuanced understanding of Nigeria's positioning within the global and African digital landscape, serving as a foundation for strategic policymaking, investment, and collaborative efforts geared toward fostering an inclusive, resilient, and sustainable digital future

Overview of Digital Inclusion in Nigeria

Digital inclusion encompasses various elements, including equitable access to the internet, the ability to use digital technologies effectively, and ensuring that marginalized groups can engage with the digital economy. In Nigeria, digital inclusion is a pressing issue, given the country's vast population of over 225 million people (World Bank, 2023). The National Bureau of Statistics (NBS) reports that internet penetration stands at approximately 50% as of 2023, indicating a significant portion of the population remains offline (NBS, 2023).

Historically, the introduction of internet services in Nigeria in the late 1990s marked the beginning of the digital revolution in the country. However, rapid urbanization and socio-economic disparities have led to unequal access. Major urban areas like Lagos and Abuja have advanced connectivity levels, while rural regions suffer from inadequate infrastructure (Adeniran, 2021). Socio-Economic Factors Influencing Digital Inclusion

Several socio-economic factors contribute to the state of digital inclusion in Nigeria:

1. Income Disparity: A significant proportion of the population lives below the poverty line, affecting their ability to afford digital devices and internet services. The World Bank (2023) estimates that around 40% of Nigerians live on less than $1.90 a day.
2. Educational Attainment: The educational gap also affects digital literacy. UNESCO (2022) reports that Nigeria has one of the highest rates of out-of-school children, impacting their ability to access

knowledge and skills necessary for digital engagement.

3. Gender Inequality: The gender digital divide is pronounced in Nigeria, with women being 20% less likely to own mobile phones compared to men (International Telecommunication Union [ITU], 2022). This disparity limits women's access to vital information and services. Infrastructure and Technological Landscape

The technological infrastructure in Nigeria, while improving, still faces significant challenges:

1. Internet Connectivity: Despite being Africa's largest telecommunications market, many rural areas lack adequate internet access. The Nigerian Communications Commission (NCC, 2023) has emphasized the need for broadband expansion, yet many communities remain underserved.
2. Power Supply: Erratic power supply is another barrier to digital inclusion. According to the World Bank (2023), around 60 million Nigerians lack access to electricity, hindering their ability to utilize digital technologies effectively.

Government Policies and Initiatives

The Nigerian government has undertaken several initiatives to enhance digital inclusion:

1. National Broadband Plan: Launched in 2013, this plan aims to increase broadband penetration to 30% by 2025 (NCC, 2023). Progress has been made, but many areas still lack infrastructure.
2. Digital Economy Policy: The National Digital Economy Policy and Strategy, introduced in 2020, aims to optimize the use of digital technology across sectors and promote digital skills acquisition (Federal Ministry of Communications and Digital Economy, 2020).
3. Public-Private Partnerships: Collaborations between government and private organizations aim to enhance access. Initiatives like the Smart Cities Initiative and engagements from tech giants such as Google and Facebook seek to improve connectivity and digital literacy (Uche, 2023).

Case Studies and Practical Examples

Several initiatives demonstrate efforts to promote digital inclusion in Nigeria:

1. Literacy Programs: Programs such as Learn Africa provide digital content and training to students in rural schools, aiming to bridge the educational gap and enhance digital literacy (Adepoju, 2023).
2. Mobile Payment Solutions: Services like Paga have improved financial inclusion by enabling millions to access banking services via mobile devices, supporting economic participation among underserved populations (Alabi, 2022).

3. Youth Employment: Platforms like Grads.ng connect young graduates with job opportunities, facilitating their entry into the labor market and promoting skills development necessary for the digital economy (Okwudili, 2023).

Regional and Global Perspectives

The state of digital inclusion in Nigeria is connected to broader regional efforts. The African Union's Agenda 2063 emphasizes digital transformation, advocating for enhanced connectivity across African nations (African Union, 2020). Initiatives like the Digital Transformation Strategy for Africa (2020-2030) seek collaborative frameworks to address challenges and harness opportunities (African Union, 2020).

International partnerships, such as engagement with organizations like the International Telecommunication Union (ITU), are also critical in gaining technical support and resources (ITU, 2022). These collaborations can enhance Nigeria's capabilities in bridging the digital divide.

Challenges and Recommendations

Despite progress, several challenges remain:

1. Affordability of Access: The high cost of internet data limits access for many Nigerians (Ogunleye, 2023). Government subsidies and price regulations could help improve affordability.
2. Digital Literacy: Enhancing digital literacy among marginalized populations is vital. Comprehensive educational programs must be implemented, focusing on practical digital skills (NBS, 2023).
3. Regulatory Frameworks: Streamlining regulations to promote innovation and protect consumers can foster a more inclusive digital environment. Creating a supportive regulatory environment encourages local tech startups to thrive (Adeniran, 2021).

The national state of digital inclusion in Nigeria reflects a mix of achievements and ongoing challenges. While significant strides have been made in improving access to digital technologies, socio-economic disparities, infrastructural limitations, and gender inequalities continue to inhibit full participation. To navigate these challenges, Nigeria must leverage collaborative efforts between government, private sector stakeholders, and civil society to create a more inclusive digital landscape. Moving forward, strategic initiatives that prioritize education, accessibility, and innovation will be essential for realizing the full potential of digital inclusion in Nigeria within a trans-continental context.

When comparing the state of digital inclusion in Nigeria, South Africa, Ghana, and Kenya, it is essential to consider various factors such as infrastructure, socio-economic conditions, government policies, and technology adoption. Each of these countries has a unique context that influences their progress toward achieving digital inclusion. Below is a comparative analysis of these nations' approaches to digital inclusion.

Progress so far

Nigeria: As Africa's most populous country, Nigeria has made significant strides in digital technology, with an internet penetration rate of around 50% as of 2023 (NBS, 2023). However, socio-economic disparities and infrastructural challenges hinder widespread access.

South Africa: With a relatively well-developed telecommunications infrastructure, South Africa has a higher internet penetration rate of approximately 70% as of 2023 (Statista, 2023). Despite this, significant disparities exist between urban and rural areas, particularly concerning access to digital technologies.

Ghana: Ghana's digital landscape has evolved rapidly, with internet penetration at about 56% in early 2023 (Statista, 2023). The government's focus on ICT policies has fostered growth, yet challenges such as high costs and limited digital literacy remain.

Kenya: Kenya has become a leader in mobile innovation, particularly with its M-Pesa platform, and has an internet penetration rate of approximately 85% as of 2023 (Kenya National Bureau of Statistics, 2023). The country has invested heavily in fostering an inclusive digital economy, particularly in rural areas.

Digital Infrastructure

Nigeria: The telecom sector is the largest in Africa, yet many rural areas lack reliable connectivity. The Nigerian Communications Commission (NCC) aims to expand broadband access, but challenges persist with high costs and inadequate infrastructure (NCC, 2023).

South Africa: South Africa benefits from a robust telecommunications infrastructure, yet disparities remain. The government has launched initiatives to expand broadband access to underserved areas, recognizing the need for inclusive connectivity (Independent Communications Authority of South Africa [ICASA], 2023).

Ghana: Ghana has made investments in fiber optic networks to enhance connectivity. The National Communications Authority (NCA) reports continued growth in internet subscribers, but costs remain a barrier for many users (NCA, 2023).

Kenya: Kenya is known for its advanced digital infrastructure, particularly in mobile networks. The government has heavily invested in expanding access in rural areas, and as a result, it boasts one of the highest mobile penetration rates in Africa (Kenya National Bureau of Statistics, 2023).

Government Policies and Initiatives

Nigeria: The National Digital Economy Policy and Strategy (2020) aims to create a conducive environment for digital innovation. However, implementation has been uneven, and more efforts are needed to address regulatory and infrastructural challenges (Federal Ministry of Communications and Digital Economy, 2020).

South Africa: The South African government has implemented the National Digital Development Strategy to improve

access and affordability. Initiatives focus on digital skills development and enhancing ICT education, particularly in disadvantaged communities (Department of Communications and Digital Technologies, 2023).

Ghana: Ghana's policy framework focuses on creating an enabling environment for digital innovation. The government promotes digital literacy and has launched initiatives like the National Digital Property Addressing System to facilitate e-commerce and online transactions (Ministry of Communications and Digitalisation, 2023).

Kenya: Kenya has established the National Information and Communications Technology Policy, which emphasizes improving internet access, promoting digital literacy, and fostering innovation. The country also supports a vibrant tech startup ecosystem through initiatives like the Konza Tech City (Ministry of Information, Communications and Technology, 2023).

Socio-Economic Factors

Nigeria: High levels of poverty and unemployment hinder digital access. Approximately 40% of the population lives on less than $1.90 a day (World Bank, 2023), and gender disparities are significant, affecting women's access to technology.

South Africa: While urban areas enjoy better access, rural communities often lag behind due to economic inequalities. The country's Gini coefficient indicates high levels of inequality, which affects access to digital resources (World Bank, 2023).

Ghana: Despite economic growth, Ghana faces challenges related to education and digital literacy. A significant portion of the population remains unserved or underserved due to socio-economic factors (NCA, 2023).

Kenya: Kenya has enacted policies to improve digital literacy and access, which is essential for driving economic growth. Mobile payment solutions like M-Pesa have significantly boosted financial inclusion, particularly among women and rural populations (Njuguna, 2022).

Digital Literacy and Skills Development

Nigeria: Digital literacy is critically low, particularly among marginalized populations. There is an urgent need for comprehensive educational programs to enhance digital skills (NBS, 2023).
South Africa: Despite higher overall digital literacy rates, disparities exist between urban and rural areas. Government initiatives focus on improving digital skills through various educational programs (ICASA, 2023).
Ghana: The government has launched initiatives to improve digital literacy among the youth, aiming to equip them with necessary skills for the job market. However, access to training remains limited in rural areas (Ministry of Communications and Digitalisation, 2023).
Kenya: Kenya has made significant strides in digital skills development, particularly among youth. Programs like the Digital Skills for Jobs initiative aim to enhance employability in the tech sector (Ministry of Information, Communications and Technology, 2023).

Mobile Technology and Innovation

Nigeria: While Nigeria has a strong mobile market, a lack of adequate policy frameworks to support innovation hinders growth. Mobile technology is crucial for accessing services, particularly in rural areas (Adeniran, 2021).
South Africa: South Africa has a competitive mobile sector, and innovation is supported through tech hubs and incubators. The country is a leader in fintech solutions (ICASA, 2023).
Ghana: Ghana's mobile sector is growing, with increasing access to mobile banking and e-commerce platforms. Government initiatives support innovation through tech hubs and partnerships with the private sector (NCA, 2023).
Kenya: Kenya is often regarded as a technology hub in Africa, thanks to innovations like M-Pesa, which has transformed how people conduct financial transactions. The country ranks high in mobile internet usage and tech entrepreneurship (Njuguna, 2022).

Therefore, while Nigeria, South Africa, Ghana, and Kenya all show potential for digital inclusion, they face unique challenges. Nigeria grapples with significant infrastructural and socio-economic barriers, while South Africa confronts urban-rural disparities amid a strong overall infrastructure. Ghana is making advancements in policy and infrastructure, yet still faces challenges in affordability and capacity building. Kenya leads in mobile technology and innovation but must continue to address issues related to rural access and digital literacy. For all four countries, fostering a collaborative approach among government, private sector, and civil society is vital to address the digital divide, advance economic opportunities, and enable inclusive growth through digital inclusion.

Summary

This study explores the current landscape of digital inclusion in Nigeria within a broader trans-continental context, highlighting key opportunities, challenges, and regional insights. As Nigeria positions itself as a digital economy powerhouse in Africa, significant disparities remain in access to ICT infrastructure, digital literacy, and affordability, which perpetuate a widening digital divide. Despite notable progress—such as increased mobile internet penetration, government initiatives like the National Digital Economy Policy and Strategy (NDEPS), and private sector innovations—many demographics, particularly in rural areas and among marginalized groups, remain underserved.

The research compares Nigeria's digital inclusion landscape with select African countries such as Kenya, Rwanda, and South Africa, alongside global benchmarks. It reveals that countries embracing strategic infrastructure investments, inclusive policy frameworks, and multi-stakeholder collaborations have succeeded in fostering more equitable digital access. However, Nigeria's progress is hindered by infrastructural deficits, inconsistent policy implementation, socio-economic barriers, and low digital literacy levels. These challenges are compounded by limited regional cooperation and insufficient digital skill development programs.

To bridge these gaps, the study recommends a multipronged approach involving targeted

investments in rural broadband infrastructure, comprehensive digital literacy campaigns, and robust policy frameworks emphasizing inclusivity and innovation. Additionally, fostering regional partnerships and leveraging international best practices can catalyze Nigeria's progress toward achieving comprehensive digital inclusion.

In conclusion, Nigeria's journey toward digital inclusion is at a pivotal stage. By learning from regional and global successes, Nigeria can create a more inclusive digital environment that empowers all citizens, accelerates socio-economic development, and sustains long-term growth in the digital age.

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