

Digital inclusion, digital skills, and youth civic participation in Nigeria: Mapping opportunities, barriers, and policy pathways.

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Abstract

Digital inclusion, digital skills, and youth civic participation represent three of the most consequential yet analytically fragmented dimensions of Nigeria's development discourse. Despite growing scholarly attention to each domain individually, there is limited integrative analysis examining how these dimensions interact to shape youth empowerment and democratic governance outcomes in the Nigerian context. This paper addresses that gap through a narrative literature review synthesizing interdisciplinary scholarship spanning Information and Communication Technology for Development (ICT4D), digital governance, civic technology, Education, and youth development studies. Drawing on peer-reviewed journal articles, conference papers, and institutional policy reports published between 2015 and 2026, the review maps the opportunities, barriers, and policy pathways at the intersection of these three domains. The findings reveal that Nigeria's digital divide operates across geographic, socioeconomic, and gendered lines, with rural communities, women, and Not in Employment, Education, or Training (NEET) youth facing compounding barriers that limit both digital access and civic agency. While digital platforms have demonstrably expanded civic space and enabled youth-led mobilization, the democratizing potential of these technologies remains conditional on meaningful digital competence and inclusive institutional design. The paper advances a central argument: digital inclusion alone is insufficient for civic empowerment; it is the convergence of equitable access, functional digital skills, and responsive governance structures that determines whether young Nigerians can participate meaningfully in democratic processes. An integrated policy framework is proposed encompassing infrastructure investment, digital Education reform, youth capacity building, and civic-tech ecosystem development. The paper contributes a unified analytical framework to a field characterized by disciplinary fragmentation, with direct implications for policy and governance in Nigeria and comparable Sub-Saharan African contexts.

Keywords: digital inclusion, digital skills, youth civic participation, digital governance

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The Nigerian Journal of Business and Social Sciences, Volume 13, 2026 (Special Issue)
A Journal of the Faculty of Social Sciences, University of Lagos, Akoka, Lagos, Nigeria
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1.0. INTRODUCTION

The rapid proliferation of digital technologies across Africa has fundamentally altered the socio-economic landscape, creating both unprecedented opportunities and deepening existing inequalities. In Nigeria, the intersection of digital transformation, youth demographics, and governance participation has emerged as a critical arena for policy and scholarly attention. As One of Africa's most populous nations with a predominantly young population, Nigeria occupies a unique position in which the outcomes of digital inclusion efforts carry significant implications not only for economic development but for the future of democratic governance. Scholarly engagement with these themes has grown considerably over the past decade; however, the literature remains largely fragmented across disciplinary boundaries, with limited integrative synthesis connecting digital inclusion, digital skills, and youth civic participation as mutually reinforcing dimensions of development (Mamman, 2020; Arinze, 2024). Digital inclusion, broadly understood as ensuring equitable access to and meaningful use of digital technologies, has been identified across the literature as foundational to sustainable development in Nigeria. Mamman (2020) establishes, through an extensive review of the relevant literature, that the poor state of Nigeria's economy, weak ICT infrastructure, and inadequate funding for public institutions collectively undermine digital inclusion and its contribution to sustainable development, and concludes that meaningful progress requires sustained public-private partnership. Similarly, Arinze (2024) synthesizes published data to argue that while digital innovation holds transformative potential for Nigeria's economy across sectors including agriculture, healthcare, and finance, persistent challenges around the digital divide, particularly the lag of rural areas relative to urban centers, continue to limit equitable distribution of these gains. Abah (2019), in reviewing the theoretical and conceptual foundations of digital inclusion in the Nigerian context, further contends that the country's economic and social transformation rests on its ability to harness its large youthful population as a demographic dividend through effective digital inclusion strategies. Taken together, these conceptual contributions establish digital inclusion not merely as a technical or infrastructural concern but as a fundamental precondition for national development. The digital divide in Nigeria, as synthesized across the literature, is not merely a question of infrastructure; it is deeply layered along geographic, socioeconomic, and educational lines. Reviews of rural digital access consistently reveal that limited infrastructure, low digital literacy, and poverty are the primary barriers to digital inclusion, with mobile phones emerging as a critical but insufficient gateway (Okocha & Dogo, 2023). In examining isolated communities in southern Kaduna, Okocha and Dogo (2023) conclude that the absence of reliable internet connectivity and inadequate digital skills compounds existing vulnerabilities, rendering meaningful digital participation largely inaccessible. This rural-urban disparity is further reinforced in reviews of early childhood Education contexts, where socioeconomic inequalities, poor teacher preparation, and the gap between policy ambition and practical implementation perpetuate a growing digital disconnect (Abu, 2025). At the higher Education level, Ahmad et al. (2025) demonstrate through a review of digital inclusion frameworks applied to Nigerian university students that equitable access remains contingent on affordability, reliable connectivity, and strong digital skills support, conditions that large segments of the student population still lack. Collectively, these studies paint a consistent picture of a multi-dimensional divide that cannot be resolved through infrastructure investment alone. The educational dimension of the digital divide extends into higher Education systems globally and in Nigeria specifically, where institutions face the urgent challenge of

integrating digital tools into curricula to prepare graduates for a technology-driven economy. Alenezi et al. (2023), synthesizing the literature on digital Education in higher Education, argue that Education systems must actively pursue digital transformation to remain competitive and to produce graduates equipped to meet the demands of the modern labor market. In reviewing digital skills programs targeting women and youth in Nigeria, Nwokoro et al. (2025) document how targeted training initiatives that leverage community partnerships and emerging technologies have enhanced employability and economic resilience, while also identifying persistent infrastructure deficits as a barrier to full inclusion. The World Bank's review of strategies for enhancing digital skills among Africa's NEET youth similarly identifies approximately 72 million young Africans not in employment, Education, or training as facing acute marginalization risk in a rapidly digitalizing global economy, with two-thirds of this population being young women (Gala et al., 2025). These reviews consistently foreground the need for scalable, context-sensitive digital skills strategies that go beyond access to address meaningful competence and participation. The relationship between digital technologies and youth civic participation has received increasing attention in the literature on Sub-Saharan Africa, particularly Nigeria. Reviews of digital media and civic engagement document how platforms have emerged as powerful tools for political mobilization, advocacy, and participatory dialogue among young people (Otieno, 2025; Muhamad Hakimi et al., 2025). Movements such as the #EndSARS protests in Nigeria are frequently cited in the literature as evidence of social media's mobilizing Power among urban, educated youth (Otieno, 2025). Muhamad Hakimi et al. (2025), in a narrative review of digital technologies and youth democracy, identify civic participation, digital citizenship, and structural challenges as the three intersecting pillars structuring the field, while cautioning that the democratizing potential of digital technologies is constrained by misinformation, political polarization, and structural digital inequalities that disproportionately affect youth in low-connectivity environments. Importantly, the review literature also reveals that evidence on youth civic engagement through digital means is overwhelmingly concentrated in urban and Western contexts, leaving rural and Global South settings, including rural Nigeria, significantly underexplored (Muhamad Hakimi et al., 2025; Otieno, 2025).

In the Nigerian governance context, reviews of digital governance literature highlight how digital tools are reshaping public administration and youth empowerment, with digital platforms improving service accessibility and information dissemination. At the same time, persistent structural inequalities and institutional inertia continue to limit equitable youth participation (Aikomo, 2025). These findings resonate with broader continental reviews, which observe that youth inclusion in African governance frameworks remains largely tokenistic, with meaningful participation, characterized by shared dialogue and co-decision-making between youth and adult institutions, still far from the norm (Mpungose, 2020). Mpungose (2020) identifies a critical policy incoherence across African states in translating normative youth participation frameworks into programmatic realities, a pattern corroborated by Nigerian governance scholarship. The literature therefore points to a structural gap between the articulated goals of digital governance reform and the lived experiences of young Nigerians seeking meaningful civic participation. Furthermore, reviews of youth engagement with digital platforms in Nigeria reveal that sustained participation is driven less by platform availability and more by trust, functionality, and participatory design, suggesting that the design and governance of digital tools are as important as access to them (Umeh et al., 2025). Despite the richness and breadth of the literature surveyed above, a critical analytical gap persists. Studies on digital inclusion in Nigeria have largely concentrated on infrastructure, access, and economic outcomes in isolation. Research on youth civic participation has examined

social media activism and governance engagement as discrete phenomena. Scholarship on digital skills development has focused primarily on employability and educational outcomes without linking these to civic agency. Existing studies treat digital inclusion, digital skills, and youth civic participation as separate domains with limited integrative analysis in the Nigerian context. This siloed treatment obscures the complex interdependencies among these three dimensions and their collective implications for youth agency, democratic governance, and national development. This paper seeks to address this gap through a review and synthesis of the literature, mapping the opportunities, barriers, and policy pathways at the intersection of digital inclusion, digital skills, and youth civic participation in Nigeria, and contributing a holistic conceptual framework to an underexplored but increasingly urgent area of scholarly and policy inquiry.

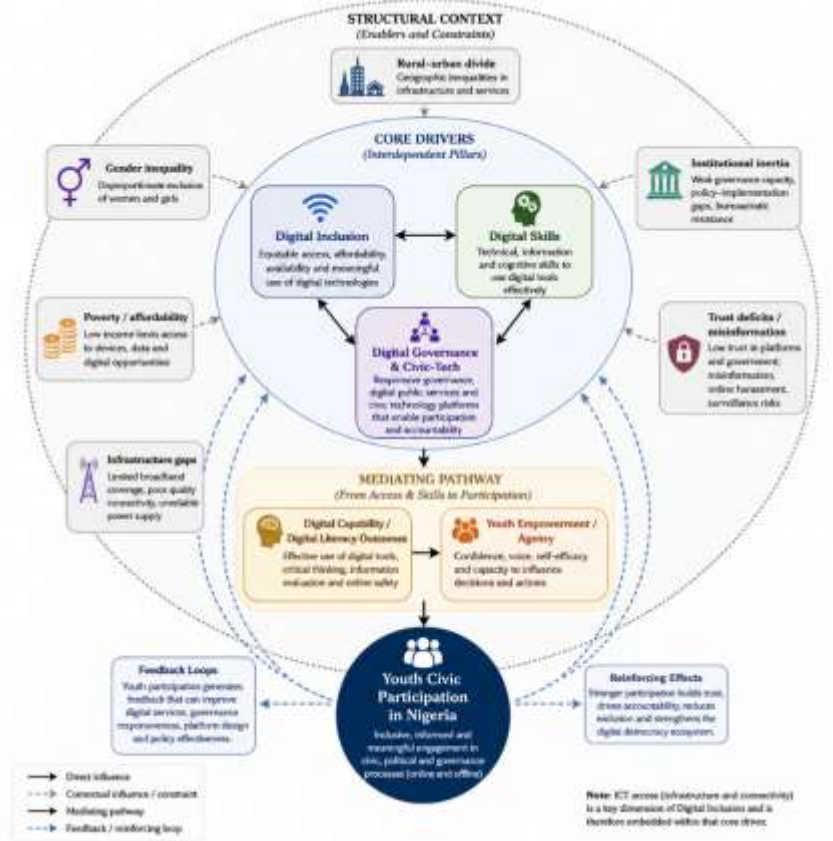


Figure 1: Integrated Conceptual Framework of Digital Inclusion, Digital Skills, and Youth Civic Participation in Nigeria

The framework organizes the review's analytical logic across three interconnected levels. At the outermost level, structural constraints- the rural-urban divide, gender inequality, poverty, infrastructure gaps, institutional inertia, and trust deficits from misinformation and surveillance- shape the entire system, producing compounding barriers most acutely felt by women, rural communities, and NEET youth. At the core level, three interdependent pillars drive the pathway toward civic outcomes: digital inclusion, defined as equitable access and meaningful use of digital technologies; digital skills, encompassing technical, informational, and cognitive competencies; and digital governance and civic-tech, representing the responsive institutions and participatory platforms that convert access and capability into genuine engagement. These pillars are mutually reinforcing rather than sequential. A mediating pathway runs through digital capability outcomes

and youth empowerment and agency before reaching the framework's central outcome: inclusive, informed, and meaningful youth civic participation in Nigeria's governance processes, online and offline.

2.0. METHODOLOGY

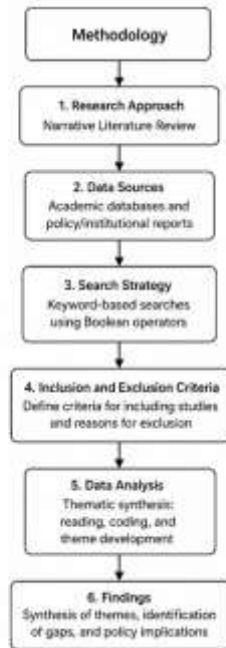


Figure 2: Methodological Flow of the Narrative Literature Review

This study adopts a narrative literature review methodology to synthesize existing scholarly and policy literature on digital inclusion, digital skills, and youth civic participation in Nigeria. A narrative review design was deemed most appropriate given the interdisciplinary and evolving nature of the subject matter, which spans ICT4D, digital governance, civic technology, Education, and youth development studies. Unlike systematic reviews that rely on rigid inclusion protocols and statistical aggregation, narrative reviews enable thematic integration across diverse, heterogeneous sources, making them well-suited for identifying conceptual linkages, policy implications, and research gaps within a fragmented body of literature. The primary aim of this review is to develop an integrated conceptual understanding of how digital inclusion and digital skills collectively shape youth civic participation in Nigeria and to map emerging opportunities, barriers, and policy pathways.

2.1. Data collection

Relevant literature was retrieved from major academic databases including Google Scholar, Scopus, African Journals Online (AJOL), ScienceDirect, and Taylor & Francis Online. These databases were selected to ensure balanced coverage of globally indexed peer-reviewed research and Africa-focused scholarship. Policy and institutional reports from organizations such as the World Bank were also consulted to complement academic literature with practice-oriented evidence.

Search Strategy

A structured search strategy was employed using keyword-based searches and Boolean operators to identify relevant studies. Core search terms included digital inclusion, digital divide, digital skills, youth civic participation, civic engagement, digital democracy, ICT4D, digital governance, and Nigeria. These were combined using Boolean logic to refine results and improve thematic

relevance. Representative search strings included "digital inclusion" AND "youth civic participation," "digital skills" AND "Nigeria," "digital divide" AND "civic engagement," and "digital governance" AND "youth empowerment" AND "Nigeria." The search process was iterative, beginning with broad queries and progressively narrowing toward studies most relevant to the Nigerian and Sub-Saharan African context. An initial pool of approximately 130 records was identified across the databases consulted. Following title and abstract screening against the inclusion and exclusion criteria outlined below, and subsequent full-text review for relevance and quality, 17 studies were ultimately included in the synthesis. These comprised peer-reviewed journal articles, a book chapter, a conference paper, and an institutional policy report.

Inclusion and Exclusion Criteria

Studies were included if they satisfied the following criteria: first, peer-reviewed journal articles, conference papers, or credible institutional policy reports; second, a primary focus on Nigeria or Sub-Saharan Africa; third, direct relevance to digital inclusion, digital skills, or youth civic participation; and fourth, publication between 2019 and 2025 to ensure contemporary relevance. Only English-language sources were considered given database limitations and the scope of the study.

Studies were excluded for the following reasons: non-academic opinion pieces lacking empirical or theoretical grounding; purely technical engineering studies without social, civic, or governance relevance; and studies set outside the African context unless they contributed foundational theoretical frameworks directly applicable to the Nigerian setting.

2.2. Data Analysis

Following literature identification and screening, a thematic synthesis approach was applied, involving systematic reading, annotation, and coding of sources to identify recurring concepts, patterns, and contradictions. The reviewed literature was organized into two core thematic areas: digital inclusion and the development context, and youth civic participation and digital governance. This thematic structure enabled a coherent cross-disciplinary synthesis rather than a descriptive study-by-study summary. It facilitated the identification of conceptual overlaps and gaps that informed the paper's analytical framework and policy recommendations.

3.0. RESULT AND DISCUSSION

3.1 Digital Inclusion and Digital Skills

3.1.1. Digital Inclusion and Access

Digital inclusion in Nigeria remains One of the most persistently documented yet inadequately resolved challenges in the country's development discourse. The literature converges on a set of structural barriers, inadequate infrastructure, poverty, low digital literacy, and policy-implementation gaps that collectively sustain a multi-layered digital divide across geographic, socioeconomic, and demographic lines. Mamman (2020) establishes that Nigeria's poor economic state is a primary driver of digital exclusion, with the absence of ICT infrastructure and chronic underfunding of public institutions compounding the problem. This finding situates digital exclusion not merely as a technological shortfall but as a symptom of broader governance and economic failures, a position reinforced across the literature. Festus and Aminat (2024) complement this structural diagnosis by documenting the rapid growth of digital connectivity among Nigerian youth, noting that while increased internet access and smartphone adoption have created new pathways for learning and participation, they have also exposed persistent gaps in infrastructure and digital literacy that prevent the equitable distribution of these gains.

The rural-urban dimension of Nigeria's digital divide is particularly acute. Okocha and Dogo (2023), examining isolated communities in southern Kaduna, find that limited infrastructure, low

digital literacy, and poverty are the defining barriers to digital inclusion in rural settings, with mobile phones identified as the primary but insufficient gateway to digital participation. Crucially, the study demonstrates that digital exclusion carries consequences beyond economic marginalization, extending to community safety and crisis communication, as affected communities lack the connectivity to request assistance during emergencies. This broader societal cost of digital exclusion is largely absent from policy discussions that focus narrowly on economic productivity metrics. Nwokoro et al. (2025) similarly document persistent connectivity and infrastructure deficits in Owerri, Imo State, including among communities targeted by state-led digital skills programs, suggesting that access barriers remain entrenched even where intervention efforts are present. What distinguishes more recent scholarship is the growing recognition that access alone is insufficient for meaningful digital inclusion. Ahmad et al. (2025), in their study of Nigerian university students, demonstrate that digital inclusion significantly influences wellbeing, but that its effects are mediated by information resources and digital skills rather than access per se. The link between digital inclusion and life satisfaction was notably unsupported in their model, suggesting that connectivity without quality, affordability, and usability produces limited developmental outcomes. This evidence points to a qualitative dimension of inclusion that mere infrastructure provision cannot address. Together, these studies construct a picture of digital inclusion in Nigeria as a multi-tiered challenge requiring simultaneous attention to infrastructure, affordability, skills development, and the quality of digital engagement, dimensions that demand integrated rather than piecemeal policy responses. The educational system represents both a critical site of digital inclusion and a primary arena where exclusion is reproduced across generations. The literature on Nigeria's educational digital landscape reveals a consistent pattern: policy ambition outpaces implementation, and the benefits of digital Education remain concentrated among those already advantaged by geography and socioeconomic status. Abu (2025), reviewing digital inclusion dynamics in Nigerian early childhood Education, identifies a widening gap driven by poor digital infrastructure, socioeconomic disparities among learners, inadequate teacher preparation, and a persistent disconnect between national digital literacy frameworks and classroom realities. The significance of this finding lies in its developmental implications: exclusion from digital learning at the earliest stages of Education compounds over time, deepening inequality and limiting the foundation for lifelong digital participation. Abah (2019) provides a conceptual grounding for understanding this trajectory, arguing that digital inclusion is more than access; it encompasses the skills, content, and services needed for individuals and communities to adopt digital technologies meaningfully. Applied to Education, this framework suggests that equipping schools with devices is necessary but not sufficient; the quality of digital engagement and the pedagogical capacity to harness it are equally determinative. This conceptual position is reinforced by Alenezi et al. (2023), whose synthesis of higher Education literature demonstrates that integrating digital Education requires systemic institutional transformation, including curriculum reform, faculty development, and the adoption of flexible hybrid learning environments. While their analysis draws on a global literature base, its implications are directly applicable to Nigeria's higher Education context, where similar institutional inertia and resource limitations constrain digital transformation. The convergence across these studies points to a shared conclusion: closing the educational digital divide in Nigeria requires an integrated strategy that simultaneously addresses infrastructure deficits, teacher capacity, curricular reform, and affordability. Without this holistic approach, digital Education initiatives risk entrenching rather than reducing existing inequalities, as benefits accrue disproportionately to already advantaged learners in urban and well-resourced institutions.

3.1.2 Digital Skills Development

Digital skills development has emerged as a distinct but interrelated dimension of the broader digital inclusion agenda, with the literature increasingly recognizing that access to technology without functional competence produces limited social or economic returns. Gala et al. (2025) frame this challenge at continental scale, identifying approximately 72 million African youth who are not in employment, Education, or training as acutely vulnerable to marginalization in an economy undergoing rapid digital transformation, with young women constituting the majority of this population. The study identifies substantial structural barriers to digital proficiency among NEET youth, including inadequate infrastructure, limited financial resources, and the absence of culturally relevant training programs. Critically, it positions digital skills not merely as tools for employability but as enablers of broader socioeconomic participation, a framing that connects skills development directly to civic and governance engagement.

In the Nigerian context, Nwokoro et al. (2025) document how community-driven initiatives that leverage mobile applications and e-learning platforms have facilitated the acquisition of skills, including coding, data analysis, and digital marketing, among women and youth in Owerri. The SkillUp Imo Initiative, a state government program developed in collaboration with the Ministry of Digital Economy and E-Government, is cited as an example of institutional intervention that has demonstrably enhanced employability and economic resilience. However, the study simultaneously cautions that limited internet access and inadequate infrastructure continue to constrain the reach and sustainability of such programs, underscoring the dependency of skills development outcomes on the prior resolution of access barriers. The relationship between platform design and sustained youth engagement in digital skills development adds another layer of complexity to the literature. Umeh et al. (2025), examining youth preferences for digital tools in South-East Nigeria, find that while platforms such as WhatsApp, Facebook, and government websites are widely accessed, sustained engagement is driven by functionality, transparency, and participatory design rather than platform popularity. Youth loyalty, the study concludes, is shaped more by trust and ease of use than by social trends, a finding that carries significant implications for the design of government-led digital skills and e-governance platforms. Taken together, these studies establish a clear analytical thread: the translation of digital access into meaningful skills requires not only infrastructure and training programs but also contextually relevant, user-centered platforms and sustained institutional commitment conditions that remain unevenly distributed across Nigeria's digital landscape.

3.1.3. Digital Governance and Tech

Digital governance and civic technology constitute the third interdependent pillar of the framework, representing the institutional and platform-level conditions that determine whether digital inclusion and skills translate into genuine civic engagement. The literature establishes that the relationship between digital tools and civic participation is not automatic; it must be actively designed, institutionally supported, and made equitably accessible. Aikomo (2025) demonstrates that innovations such as e-government platforms and digital public service portals have improved information dissemination and administrative accessibility for youth in Nigeria, while simultaneously identifying institutional inertia and limited governance capacity as persistent barriers to equitable participation. Bufumoh and Eke (2025) extend this analysis, demonstrating that digital spaces can function as platforms for democratic dialogue and accountability only when transparency, inclusivity, and responsible engagement are prioritized as design principles. Umeh et al. (2025) further establish that sustained youth engagement with digital governance platforms depends on trust and functionality rather than availability alone, a finding with direct implications

for how Nigeria's civic-tech infrastructure is designed and governed. Together, these studies position digital governance not as a downstream outcome of inclusion and skills development but as a co-constitutive condition whose quality and responsiveness shape what is possible for civic participation. The evidence reviewed across Sections 3.1.1 to 3.1.3 establishes a consistent pattern: digital inclusion and skills development are foundational conditions whose quality, reach, and equity determine what becomes possible beyond the economic sphere. The question that follows, and that Section 3.2 takes up, is whether and how these conditions translate into youth civic participation and democratic engagement. The literature suggests this translation is neither automatic nor guaranteed; it depends on the design of governance institutions, the trustworthiness of civic platforms, and the extent to which digital empowerment reaches those most structurally excluded. It is at this junction that the paper's central argument becomes most consequential.

3.2. Digital Technology and Youth Civic Participation

3.2.1 *Youth Civic Engagement and Democracy*

The relationship between digital technologies and youth civic engagement has become One of the most productive and contested areas of inquiry in contemporary development scholarship. The literature broadly affirms that digital platforms have expanded the civic space available to young people, enabling new forms of political expression, collective action, and transnational solidarity, while simultaneously introducing risks that complicate simplistic narratives of digital democratization. Muhamad Hakimi et al. (2025), in a narrative review synthesizing a broad interdisciplinary literature, identify civic participation, digital citizenship, and structural challenges as the three intersecting pillars that define the field. Their analysis marks a significant theoretical contribution, reinforcing a shift in how youth are conceptualized in democratic theory, from passive recipients of governance to active, networked agents of political change. This reframing is directly relevant to the Nigerian context, where youth constitute the demographic majority yet remain structurally marginalized from formal political institutions. The Sub-Saharan African literature provides compelling empirical grounding for this theoretical shift. Otieno (2025) documents how digital platforms have fundamentally transformed youth political engagement across the continent, with hashtag-driven movements demonstrating social media's capacity to mobilize large numbers of young people around civic causes. The #EndSARS movement in Nigeria is cited alongside #FeesMustFall in South Africa and the #RejectFinanceBill2024 protests in Kenya as evidence of the organizing Power of networked digital activism, particularly among urban and university-educated youth. In the Nigerian case specifically, #EndSARS illustrated both the ceiling and the floor of digitally mediated civic participation: it demonstrated that young Nigerians could deploy social media to coordinate nationwide protests, sustain international solidarity, and hold security institutions to account in real time, yet its mobilizing Power remained concentrated among urban, connected, and relatively educated youth, with rural communities and those lacking reliable internet access largely excluded from both the activism and its governance reverberations. This geographic and socioeconomic concentration is not incidental; it reflects precisely the access and skills inequalities that this paper's framework identifies as structurally limiting. These case studies collectively illustrate how Uses and Gratifications Theory, the Participatory Communication Model, and Social Network Theory can together explain youth motivations for digital civic engagement, the communal character of online civic spaces, and the networked diffusion of protest messages (Otieno, 2025). Festus and Aminat (2024) reinforce this picture from the Nigerian context specifically, documenting how social media usage has reshaped civic activism among young Nigerians while simultaneously generating risks, including online radicalization, cyberbullying, and the spread of misinformation, risks whose governance

implications remain inadequately addressed in Nigerian digital policy. However, the literature is equally insistent that these achievements are concentrated and uneven. Both Muhamad Hakimi et al. (2025) and Otieno (2025) identify misinformation, political polarization, online harassment, governmental surveillance, and the urban-rural digital divide as persistent constraints on inclusive digital civic engagement. The democratizing potential of digital platforms is thus conditional rather than universal, available primarily to those with connectivity, digital literacy, and freedom from surveillance — conditions that exclude large segments of Nigeria's youth population, particularly those in rural areas and among marginalized socioeconomic groups. This conditional democratization reinforces the central analytical argument of this paper: that digital inclusion and digital skills are not merely economic imperatives but prerequisites for meaningful civic participation.

3.2.2. Governance and Political Participation

The intersection of digital governance and youth political participation in Nigeria reveals a complex and often contradictory picture. On the one hand, the digitalization of public administration has expanded access to government services and created new channels for youth engagement with state institutions. On the other hand, structural inequalities, institutional inertia, and design failures continue to limit the depth and equity of this engagement. Aikomo (2025), analyzing the evolution of digital governance in Nigeria since 2015 through the integrated lens of Digital Era Governance, Empowerment Theory, and New Public Governance, finds that while digital tools have enhanced administrative accessibility and facilitated information dissemination, persistent digital divides and limited institutional capacity constrain equitable youth participation in governance processes. The study's call for a shift from state-centric governance to multi-actor engagement that incorporates youth, civil society, and the private sector reflects a broader theoretical trajectory in the governance literature toward more participatory and collaborative public administration models. At the subnational level, Adeowu and Adeyemi (2025) provide empirical evidence from Osun State, directly linking digital competence to political participation outcomes among pre-service Social Studies teachers. Their findings establish a statistically significant relationship between students' knowledge of digital tools and their level of political engagement, with students possessing higher digital competence demonstrating substantially greater civic and political participation than those with limited digital knowledge. This finding has important implications for educational policy, suggesting that integrating digital civic Education into teacher preparation curricula can serve as a lever for broader democratic participation. However, the study also confirms that structural barriers, particularly inadequate digital infrastructure and restricted access to digital facilities, continue to limit the potential of this relationship, reinforcing the pattern identified across the literature that skills without access produce incomplete civic empowerment. The evidence from Bufumoh and Eke (2025) in Yenagoa, Bayelsa State, converges on a similar conclusion from a community participation perspective. Their study finds that citizens with stronger digital literacy skills participate more actively in civic discussions, contribute more meaningfully to policy dialogues, and are more effective in holding leaders accountable. The study further establishes that genuine civic participation cannot thrive without equitable access to digital infrastructure and affordable internet connectivity, a conclusion that, read alongside Aikomo (2025) and Adeowu and Adeyemi (2025), points to a consistent and replicable pattern across Nigerian subnational contexts: digital competence is a foundational prerequisite for meaningful political engagement, but its realization depends on prior resolution of structural access inequalities.

3.2.3 Civic-Tech and Participation Mechanisms

The emergence of civic technology as a distinct field of practice and inquiry reflects growing recognition that the relationship between digital tools and civic participation is not automatic but must be actively designed, institutionally supported, and made equitably accessible. The Nigerian literature on civic-tech and participatory governance mechanisms reveals both the transformative potential of digital advocacy platforms and the persistent infrastructural and ethical challenges that constrain their inclusive application. Bufumoh and Eke (2025) make an important theoretical contribution in this regard, extending the application of Participatory Communication Theory to the digital advocacy sphere and demonstrating how digital spaces can function as platforms for democratic dialogue, community mobilization, and institutional accountability, but only when inclusivity and responsible engagement are prioritized as design and governance principles. Their findings from Yenagoa establish that misinformation, online hostility, and institutional opacity weaken the quality of civic dialogue and deter participation, underscoring that civic-tech effectiveness is as much a question of digital ethics and institutional trust as it is of connectivity and access. Aikomo (2025) complements this perspective by situating civic-tech within the broader framework of digital governance reform, demonstrating that innovations such as e-government platforms and digital public service portals have improved information dissemination and interactive engagement among youth in Nigeria. The study advocates for governance models that position youth as co-participants in digital governance design rather than as passive beneficiaries of digital service delivery. This distinction aligns with the broader shift in the governance literature toward co-production and collaborative public administration. Otieno (2025) similarly highlights the potential of inclusive participatory communication platforms that integrate online and offline participation mechanisms, arguing that the civic-tech agenda in Sub-Saharan Africa must bridge the gap between digitally connected urban youth and rural communities that remain outside the reach of social media-driven activism. The synthesis across these studies reveals a set of critical design and policy principles for effective civic-tech in the Nigerian context. First, access to technology is necessary but not sufficient; equitable infrastructure, affordable connectivity, and digital literacy must be treated as prerequisites for participatory digital governance. Second, civic-tech platforms must be designed with trust, transparency, and usability as core features, a conclusion supported by both Umeh et al. (2025) in the context of human capital development platforms and Bufumoh and Eke (2025) in the context of digital advocacy. Third, the ethical dimensions of digital civic engagement, including the governance of misinformation and the promotion of responsible online behavior, must be addressed as structural rather than individual concerns. Together, these findings point to a civic-tech agenda for Nigeria that goes well beyond platform development to encompass institutional reform, digital literacy programming, and the cultivation of a trustworthy and inclusive digital public sphere.

3.2.4. Limitations of the Digital Empowerment Thesis

Digital connectivity does not inherently produce civic empowerment; in several documented respects, it actively undermines it. Muhamad Hakimi et al. (2025) identify misinformation, political polarization, and governmental surveillance as structural features of digitally connected civic environments rather than exceptional failures. In contexts where state actors deploy digital infrastructure for monitoring and suppression, expanded connectivity can narrow rather than expand effective civic space. Festus and Aminat (2024) extend this concern to Nigeria specifically, documenting how digital platforms simultaneously enable civic activism and facilitate online radicalization and coordinated misinformation, dynamics that erode democratic discourse even as they expand its reach. Aikomo (2025) and Mpungose (2020) further demonstrate that expanded youth digital participation has not translated into commensurate shifts in institutional

responsiveness, suggesting the pathway from digital voice to governance outcomes remains structurally blocked. Digital inclusion and skills development are therefore necessary. However, not sufficient conditions for civic empowerment, the governance and ethical dimensions of digital platforms must be treated as central, not supplementary, to any credible policy agenda.

3.3. Integrated Opportunities, Barriers, and Policy Pathways

3.3.1 Opportunities

The reviewed literature collectively points to a significant and expanding landscape of opportunity at the intersection of digital inclusion, skills development, and youth civic participation in Nigeria. A critical pattern emerging across studies is that when access to digital technologies is paired with meaningful skills development, the resulting empowerment extends well beyond economic outcomes to encompass civic agency, political voice, and participatory governance. This progression, from inclusion to capability to participation — constitutes the central opportunity that Nigeria's digital transformation presents for its predominantly young population.

Digital innovation has demonstrably created new economic and social entry points for Nigerian youth. Arinze (2024) establishes that digitalization has generated significant employment opportunities by leveraging Nigeria's young, technologically savvy population, with transformative effects across sectors such as agriculture, healthcare, and finance. This economic dimension of digital inclusion provides a material foundation upon which broader civic and political participation can be built, as economically empowered youth are better positioned to engage meaningfully with governance processes. Nwokoro et al. (2025) reinforce this connection, documenting how community-driven digital skills programs in Owerri have enhanced employability and economic resilience among women and youth, while simultaneously expanding their capacity to participate in the digital economy. The flexibility enabled by mobile applications and e-learning platforms has been particularly significant for women, who face disproportionate time and mobility constraints, suggesting that technology-mediated skills development can function as an equity mechanism when appropriately designed. At the governance level, Aikomo (2025) identifies digital platforms as having meaningfully improved administrative accessibility, information dissemination, and interactive engagement between youth and public institutions in Nigeria. The convergence of digital governance reform and youth empowerment creates an institutional opportunity to redesign public administration around participatory principles, shifting from state-centric service delivery toward multi-actor governance models that actively incorporate youth voices. This institutional opportunity is reinforced by evidence from Umeh et al. (2025), which demonstrates that when digital platforms are designed with transparency, ease of use, and participatory features, youth engagement deepens and sustains over time. Platform trustworthiness and functionality, rather than mere availability, are thus the critical variables that convert digital access into genuine civic agency, a finding with direct implications for the design of Nigeria's e-governance infrastructure. Together, these studies suggest that Nigeria's civic-tech ecosystem holds considerable potential, provided that the enabling conditions of access, skills, and institutional trust are addressed in an integrated rather than piecemeal fashion. Comparable experiences from other African contexts offer instructive reference points for Nigeria's policy direction. In Rwanda and Kenya, government-led broadband expansion paired with structured digital literacy programming has demonstrated measurable gains in youth digital participation. At the same time, Ghana and Senegal have made notable progress in deploying civic-tech platforms that integrate community-level engagement with national governance frameworks (Gala et al., 2025). These regional experiences affirm that the progression from inclusion to capability to

participation is achievable under enabling policy conditions and provide a basis for the integrated pathways this paper proposes for Nigeria.

3.3.2. Persistent Barriers

Despite the opportunities outlined above, the literature presents a consistently sobering account of the structural barriers that continue to prevent digital inclusion from translating into equitable civic participation for Nigerian youth. These barriers operate across multiple interconnected dimensions- infrastructural, economic, gendered, and institutional- and their interaction produces compounding effects that narrow the civic space available to already-marginalized groups.

The rural-urban digital divide remains the most geographically acute manifestation of these barriers. Okocha and Dogo (2023) document how limited infrastructure, poverty, and low digital literacy in southern Kaduna communities not only restrict economic participation but also compromise community safety and social cohesion, with digital exclusion directly amplifying vulnerability during security crises. This finding illustrates that the consequences of digital exclusion in rural Nigeria extend far beyond reduced internet access, encompassing diminished capacity for governance engagement, crisis communication, and collective action. Mamman (2020) situates this pattern within a systemic framework, identifying Nigeria's economic underdevelopment, inadequate ICT infrastructure, and chronically underfunded public institutions as the structural foundations of digital exclusion, concluding that the state of digital inclusion and sustainable development in Nigeria leaves much to be desired without sustained public-private partnership. Gender inequality significantly compounds these structural barriers. Nwokoro et al. (2025) document that women in Nigeria face disproportionate exclusion from digital opportunities due to intersecting constraints of limited access to infrastructure, cultural expectations, and limited economic resources, even in urban settings where connectivity is comparatively better. For rural women and girls, these barriers are yet more severe, creating a gendered digital divide that simultaneously limits economic empowerment and forecloses civic participation pathways. At the institutional level, Aikomo (2025) identifies digital divides, institutional inertia, and limited governance capacity as persistent impediments to equitable youth participation in digital governance, even where platforms nominally exist. This institutional dimension is critical: the existence of digital governance tools does not guarantee inclusive participation if the underlying institutional culture remains unresponsive to youth engagement or if digital literacy deficits prevent meaningful use. The cumulative effect of these overlapping barriers is to sever the conceptual pathway from digital inclusion to civic participation at multiple points. Digital access without affordability is unsustainable; connectivity without digital literacy produces passive rather than active citizenship; and participatory platforms without institutional trust generate disengagement rather than empowerment. The literature thus confirms that digital inclusion alone is insufficient as a policy objective; it is the quality, affordability, and skills-enabling dimensions of inclusion that determine whether access translates into meaningful civic agency.

3.3.3. Policy Pathways

The synthesis of opportunities and barriers across the reviewed literature makes clear that fragmented, single-dimensional interventions are insufficient to address Nigeria's digital inclusion deficit or its consequences for youth civic participation. Digital access alone does not produce empowered, civically engaged youth; rather, meaningful participation depends on the convergence of equitable infrastructure, functional digital skills, responsive institutional frameworks, and inclusive governance systems. Mamman (2020) establishes that sustainable digital inclusion in Nigeria requires a coordinated public-private partnership that addresses infrastructure, legal frameworks, and institutional capacity simultaneously. Aikomo (2025) reinforces this by

demonstrating that even where digital governance tools exist, institutional inertia and digital literacy deficits limit their participatory value for youth. Gala et al. (2025) and Nwokoro et al. (2025) further confirm that skills development programs achieve durable outcomes only when embedded within supportive infrastructure and contextually relevant institutional environments. These converging findings point toward an integrated policy logic in which digital inclusion, Education reform, skills development, and civic-tech governance are treated as interdependent rather than sequential priorities.

Table 1: Policy Areas, Challenges and Proposed Pathways

Policy Area	Key Challenge	Proposed Pathway	Expected Outcome	Civic
Digital Infrastructure and Inclusion	Inadequate connectivity, affordability barriers, and rural exclusion are limiting access for youth and women.	Government and private sector co-investment in broadband expansion, data cost subsidization, and mobile-first connectivity strategies	Expanded digital access enabling broader youth participation in civic and governance platforms	
Digital Education Reform	Curricula lagging behind digital transformation needs, teacher capacity deficits across all Education levels	Integration of digital literacy and civic Education into national curricula; teacher professional development programs at all levels	Digitally literate youth capable of informed engagement in democratic and governance processes	
Youth Digital Skills Development	High rates of NEET youth with limited digital competencies; gender gaps in skills access and training participation	Scalable, community-based, mobile-first training programs with public-private partnership models targeting women and marginalized youth	Increased youth employability, economic inclusion, and capacity for civic and political engagement	
Civic-Tech Ecosystem Support	Limited availability of trustworthy, participatory, and youth-responsive digital governance platforms	Investment in user-centered platform design prioritizing transparency, functionality, and participatory features in e-governance systems.	Sustained youth engagement in digital governance, policy dialogue, and civic accountability processes	
Inclusive Governance Frameworks	Institutional inertia, state-centric governance models, and limited youth representation in policy processes	Adoption of multi-actor governance frameworks incorporating youth, civil society, and the private sector in digital policy co-design	Responsive, participatory public institutions that recognize youth as agents rather than beneficiaries of governance reform	

The policy pathways synthesized above are most valuable not as isolated interventions but as components of a mutually reinforcing governance strategy. As Aikomo (2025) advocates, building participatory youth-responsive institutions requires the simultaneous application of digital governance reform, empowerment frameworks, and new public governance principles. Gala et al.

(2025) emphasize that sustainable digital skills outcomes depend on long-term governmental commitment, culturally relevant program design, and robust physical infrastructure, preconditions that must be institutionalized rather than project-dependent. Nwokoro et al. (2025) demonstrate that state-led programs embedded in local partnerships can generate measurable empowerment outcomes, but only when paired with sustained infrastructure investment. Taken together, these findings establish that integrated digital inclusion and skills development, supported by inclusive and responsive governance institutions, remain essential for strengthening youth civic participation and democratic resilience in Nigeria.

4.0 Recommendations and conclusions

The evidence synthesized in this paper points to several targeted recommendations for policymakers, educators, and researchers. Nigeria should adopt a coordinated policy framework that treats digital infrastructure, skills development, and youth civic participation as interconnected rather than separate priorities, since piecemeal approaches consistently yield incomplete outcomes (Mamman, 2020; Aikomo, 2025). Gender-responsive program design is equally essential; mobile-first and flexible delivery models have demonstrated measurable gains in equity for women facing disproportionate access constraints (Nwokoro et al., 2025). E-governance platforms must be redesigned around two-way interaction and participatory features rather than one-way service delivery, given evidence that platform trust and usability, not availability, determine whether youth engage meaningfully (Umeh et al., 2025). Digital skills initiatives should embed civic literacy alongside technical competencies, as integrating civic content into training curricula has been shown to increase political participation outcomes (Adeowu & Adeyemi, 2025). Future research should also adopt longitudinal and interdisciplinary designs to capture better how inclusion and skills development translate into civic agency across Nigeria's diverse geographic and socioeconomic contexts, a gap the current literature base cannot adequately address. This paper has mapped the complex terrain connecting digital inclusion, digital skills development, and youth civic participation in Nigeria, advancing a central argument: these are not parallel concerns but mutually constitutive conditions whose combined presence or absence determines the depth and equity of youth democratic engagement. The synthesis reveals a landscape of structural contradiction: genuine advances in mobile connectivity, e-governance platforms, and community-based skills programs coexist with entrenched rural exclusion, gendered digital inequality, and institutional inertia that collectively sever the pathway from access to meaningful civic agency. NEET youth, rural communities, and women face compounding barriers that no single-dimensional intervention can resolve, and the evidence is unambiguous: connectivity without digital competence produces neither economic inclusion nor civic empowerment. The original contribution of this paper lies in treating digital inclusion, skills development, and youth civic participation as an integrated analytical framework rather than separate fields, tracing the pathway from equitable access through functional competence to youth empowerment and democratic governance. This framework is relevant beyond Nigeria, reflecting the dynamics of infrastructural exclusion, gendered inequality, and institutional unresponsiveness that characterize the civic-tech landscape across West Africa. Nigeria's young, growing population holds substantial democratic potential that structural exclusions continue to suppress, yet these exclusions are neither inevitable nor irreversible. Realizing that potential demands a coherent, long-term governance commitment in which access, capability, and institutional reform are pursued together as inseparable dimensions of the same democratic project.

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