Influence of New Communication Technologies on Digital Communities in South Western Nigeria

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Abstract

This study investigates the influence of new communication technologies on digital communities in Southwestern Nigeria, with particular attention to their transformative impact on communication patterns, community engagement and organizational strategies. As digital platforms powered by artificial intelligence, blockchain and 5G networks become increasingly integrated into everyday life, this study seeks to uncover both the opportunities and challenges these tools present. Anchored in Uses and Gratifications Theory and Technological Determinism, the research analyzes how individuals and organizations adopt, adapt, or resist these technologies in shaping their digital identities and relationships. The study responds to a pressing problem: while communication technologies are rapidly advancing, disparities in access, algorithmic transparency and digital literacy continue to widen social gaps. Using a mixed-methods approach, the study surveyed 300 digital community members and conducted in-depth interviews with 15 key informants, spanning tech practitioners, educators and communication strategists across Lagos, Oyo, Ogun, Osun, Ondo and Ekiti States. Quantitative data were analyzed using SPSS, while qualitative responses underwent thematic analysis using NVivo. Key findings reveal high engagement levels with platforms such as WhatsApp, Telegram and X (formerly Twitter), especially among youth, but also highlight gaps in ethical technology use and inclusive digital policy. The study recommends robust infrastructural investment, localized digital literacy programmes and policy frameworks that foster ethical and inclusive engagement. The conclusion emphasizes that for digital communities to thrive, technology adoption must align with cultural, strategic and ethical considerations that empower rather than exclude.

Keywords: New communication technologies, digital communities, algorithmic bias, digital literacy, participatory culture.

Introduction

In an era increasingly defined by technological convergence, the proliferation of new communication technologies has profoundly reshaped the structure, function and influence of digital communities. These transformations are particularly visible in regions such as Southwestern Nigeria, where mobile connectivity, social networking platforms and algorithm-driven media are redefining social interaction, political participation and knowledge dissemination. New communication technologies such as artificial intelligence (AI), blockchain, 5G networks and real-time collaborative platforms have shifted the dynamics of digital interaction from passive content consumption to active, user-driven engagement (McAfee & Brynjolfsson, 2017; Tapscott & Tapscott, 2017). This digital migration has given rise to hybrid ecosystems where communities are formed not by geography but by shared interests, real-time access and algorithmic visibility (Ford & Green, 2016; Baym, 2015; Jenkins).

In Nigeria, particularly the Southwest geopolitical zone comprising Lagos, Ogun, Oyo, Osun, Ondo and Ekiti States, the digital revolution is accelerating in tandem with a youthful population, increased internet penetration and the rise of tech-based civic and cultural participation (GSMA, 2023). From WhatsApp forums and X communities to AI-powered content creation and digital governance portals, emerging communication tools have transformed how citizens interact, mobilize and co-create value (Adeleke, Ismail & Sulaiman, 2021). Such development of the cultural sphere is a process of changing paradigms which has a level of complexity that surpassed the mere diffusion of online media. In modern society, one has to cope with such issues as the proliferation of misinformation, algorithmic bias, digital fatigue and distrusts that are frequently related to trust and data privacy problems (Lupton & Michael, 2017; Tufekci, 2015).

New research stresses that, despite the possibility of very individualized communication and enhanced inclusion and increased participation offered by digital technology, such mechanisms can also strengthen existing social disparities and inequities, in particular regarding the under-connected or disadvantaged (van Dijk, 2020). To be specific, algorithmic curation and the visibility features inherent in traditional platforms tend to prioritize sensational or viral content to the detriment of verified information and create digital echo chambers, which undermine both civil participation and communal solidarity (Noble, 2018; Boyd, 2010).

Statement of the Problem

The gradual integration of innovative technologies of communication has had a significant impact on changing the modalities of interaction, association and organization of digital communities in Southwestern Nigeria. Despite the increase in access to AI-powered platforms, 5G networks and real-time collaboration tools, several such communities are still struggling with algorithm bias, data privacy, misinformation and digital disenfranchisement.

Despite these technologies offering platforms to communicate civically and share information, they can also create social breakdowns, trust and community fragmentation when implemented without morals and cultural consideration. Organizational and institutional implementations of these tools take place without a fully informed strategy, training, alignment of activities and associated policies, leading to low utilization as well as cases of digital fatigue and fewer results.

The existing research on the digital transformation currently has general considerations but rarely focuses its attention on how such digital technologies influence the lived experiences, trust systems and patterns of participation in local digital communities in the Nigerian contexts. In turn, this study seeks to examine the advantages and the undesirable effects of new communication technologies on the community formation and interaction in Southwestern Nigeria.

Research Objectives

This study aims to explore the impact of new communication technologies on digital communities in Southwestern Nigeria. Specifically, it seeks to:

i. Examine how emerging technologies are shaping communication patterns within digital communities.
ii. Analyze how organizations in Southwestern Nigeria are integrating these technologies into their communication systems.
iii. Assess the influence of algorithm-driven platforms on trust, participation and content engagement.
iv. Identify ethical and cultural issues limiting effective technology use in local digital spaces.

Conceptual Review

New Communication Technologies: An Overview

The new communication technologies include highly sophisticated tools and platforms that have been behind the redefinition of information production, dissemination and perception. Such technologies are AI, blockchain, virtual and

augmented reality (VR/AR), 5G connectivity, the Internet of Things (IoT)and cloud-based collaborative platforms. In Southwestern Nigeria (specifically in innovation-intensive areas, like Lagos and Ibadan), these tools are becoming more and more integrated into the digital infrastructures at businesses, schools and government and community systems. Researchers like McAfee and Brynjolfsson (2017) argue that such tools are no longer optional but a core component to survive in a more technological world.

The systems based on AI have become widely present in the realm of online communication in the form of chatbots, machine news feeds and speakers. These types of systems enable real-time feedback, strengthen personalization and can enable platforms to customize content to individuals at a level that increases relevance and efficiency. However, the principles of algorithmic transparency and biases of digital media are still a subject of debate. Berente, Seidel and Safadi (2021) argue that while AI enhances operational efficiency, it also introduces ethical challenges around trust, fairness and data transparency. In Nigeria, these concerns are valid given the rising use of AI tools in marketing, journalism and even public sector communications.

Blockchain is another emerging technology gaining traction in Nigeria. While still in its early phases, blockchain is being explored for purposes such as digital identity management, electoral transparency and decentralized finance. Tapscott and Tapscott (2017) describe blockchain as a transformative tool for secure and transparent digital interaction, particularly in societies where institutional trust is low. In Southwestern Nigeria, civic tech communities are beginning to explore blockchain for community governance, particularly in student elections, NGOs and cooperatives seeking transparency.

Digital Citizenship in Nigerian Digital Communities

Digital citizenship is an analytical core that is essential to interrogate the working mechanisms and dynamics of digital communities as a form of political participation, civic engagement and identity negotiation in the Nigerian context. Although contemporary research has mainly emphasised the ubiquity of networks like WhatsApp, X and Facebook as key loci of social interaction, a methodological necessity remains to determine whether these interactions produce formative civic obligations and democratic consequences. According to Choi (2016), digital citizenship no longer only involves access to digital technologies or basic literacy, but is rather about how people organise the digital spaces to fulfil their civic rights and responsibilities. The EndSARS protests in Nigeria is

the case where digital communities helped citizens mobilise, organise and demand police reforms, but also prefigured the issue of accountability, misinformation and digital surveillance mechanisms (Adeleke, Ismail & Sulaiman, 2021). Moreover, digital citizenship sheds some light on the conflict between empowerment and exclusion in digital communities. Despite the fact that Nigeria has one of the youngest populations actively pursuing an online conversation, the inequality of internet penetration and computer literacy creates a mismatch of participation, which sabotages the intended inclusivity. Van Dijk (2020) emphasises that digital divides do not only entail access to technology, but also include the ability to move through digital environments in a critical, effective manner. As an example, young people in cities can more frequently use digital tools to organise activism and political discussion and rural communities are not represented in those ways, which reinforces social biases in the so-called democratic online spaces. This situation highlights the urgency of critically assessing whether digital citizenship in Nigeria reinforces the status quo of power or actually promotes inclusivity.

Lastly, the concept of digital citizenship questions the current notion that the very fact of engaging in digital communities could be the same as democratic engagement. Lupton and Michael (2017) maintain that digital platforms can serve as platforms of interaction as well as a surveillance space where the data and online behaviours of individual citizens are tracked and, in some cases, by state actors. In Nigeria, cases of government-imposed internet inspections and the legalisation of offered social-media control bills can be considered examples of how political leaders are looking to curtail online liberties in the name of national security.

Networked Public Sphere in Nigerian Digital Communities

The concept of the networked public sphere provides a critical methodology of analysing digital communities in the context of the Nigerian socio-political environment. According to Castells, digital technologies transform the existence of the masses because they decentralise communication and shift power from the traditional media gatekeepers to more participatory discourses (Castells 2010). In Nigeria, online communities are functioning as networked publics where citizens discuss issues relating to electoral processes and other issues such as governance and social justice.

However, these platforms increase marginalisation, but, at the same time, they have the potential to deepen new forms of exclusion due to the visibility of

algorithms and the echo chamber (Boyd, 2010). The networked public sphere is therefore, particularly helpful in questioning what voices prevail in the digital discourse of Nigerian politics and how power relations are renegotiated on the internet. One of the main issues in the networked public sphere is the impact of the algorithms on the deliberation of the masses. Noble (2018) demonstrates that algorithms are more likely to promote sensational or commercially viable information at the expense of verified information. In Nigeria, this trend has been observed in the election years when online groups turned into places of spreading ethnic, religious and partisan propaganda intensified by the algorithmic mechanics (Klinger & Svensson, 2018). Instead of forming a neutral space of dialogue, in many cases, digital communities in Nigeria reflect socio-political divides that existed before and the digital space reinforces the ideological division. Such a state of affairs undercuts the celebratory portrayals of digital communities as inherently democratic and stresses the necessity to bring critical inquiry to the structural limitations of digital communities.

In addition, the nexus between state authority and digital community activism is enlightened by the networked public sphere. As digital spaces are useful in mobilisation at grassroots, simultaneously, Nigerian authorities have put in place mechanisms to monitor and suppress dissent in these same spaces. Lupton and Michael (2017) emphasise the dual nature of the concept of data-driven government, which, on the one hand, may increase efficiency but, on the other hand, may promote authoritarian behaviours. This can be seen in how the fate of online activism in Nigeria played out, with the #EndSARS movement triggering governmental crackdowns, cyber-policing and efforts to censor the internet. Applying the networked public space to the contextualisation of digital communities, scholars can not only question the participatory possibilities of the online space but also the tensions on the socio-political level that define the functioning of digital communities in Nigeria.

Theoretical Review

The paper bases its discussion on the Network Society Theory and Platform Studies two recent theoretical frameworks that offer subtle understanding of the role of digital technologies in transforming communication practices and societal flows. Such attitudes are especially relevant to the Nigerian experience, where digital platforms act upon broadcasting, civic engagement and cultural exchange more and more determining.

The Network Society Theory by Manuel Castells (1996; 2000) provides a conceptual approach to the study of the shift toward the less hierarchical decentralised networks, based on the decentralised, interconnected networks instead of the hierarchical, centralised structures of communication. Castells maintains that the information age societies are structured around the streams of information, power and capital in both the global and local nodes. This process can be observed in terms of the usage of platforms like WhatsApp, X and Instagram, where the dissemination of information is quick in the network of users, which, in spite of being geographically separated, are closely interconnected digitally. The theory emphasises the ways that these networks contribute to new forms of participation, redefine social relations and support both local and transnational activity.

To illustrate, the use of WhatsApp groups in Southwestern Nigeria shows how communities and individuals organise around a common identity and cause, thus creating networks of meaning that transcend traditional media arrangements. The viewpoint of Castells further clarifies the fact that the network society is confusing the line between the producers and consumers of content because audiences are now creating, cutting up and sharing information. This reconfiguration of communicative practices reinforces how digital connectivity lies at the heart of daily life and how the sustainability of the new technologies in the Nigerian broadcasting business relies on how the new technologies are incorporated within these larger systems of communication.

Closely associated with this is the structure of Platform Studies, which returns the emphasis on networks in general to the socio-technical infrastructures of particular platforms. As Gillespie (2010), Helmond (2015) and van Dijck, Poell and de Waal (2018) point out, platforms are not neutral mediation, but influential forces, which organise visibility, control participation and shape cultural production by its affordances, algorithms and modes of governance. Specific to Nigeria, this framework is especially applicable since the dependency on the global platforms brings up important concerns concerning the ways algorithms influence media consumption, political speech and cultural portrayal.

The Network Society Theory and Platform Studies can be used collectively to give the theory a foundation in this study. Where Castells focuses on the structural change to interconnectedness and the social reorganisation of digital flows, Platform Studies focuses on the materiality of platforms, the way they are governed and the algorithmic power they have in organising everyday practices.

These frameworks are useful in explaining the opportunities and the tensions that come with the adoption of emerging technologies in broadcasting within the Nigerian context, in both the ways in which platforms provide new participatory possibilities and the ways in which platforms constrain through both their political economy and technological design.

Empirical Review

The existence of the nexus linking emerging communication technologies and the futures of digital communities has been the subject of numerous empirical studies, which have provided insights that can be relevant in the Nigerian context. An example is a study by Treem and Leonardi (2017), who reviewed the effects of collaborative technologies changing the exchange and visibility of knowledge in organizations. Their results align with the opinion that applications like Microsoft Teams and Slack can be used to increase transparency, activation and decentralized communication amongst team members. The given evidence is of special relevance in the Nigerian context, where most institutions are already shifting to hybrid reality, where transparent and rapid communication models become necessary.

Adeleke, Ismail and Sulaiman (2021) conducted a Nigeria-specific study to determine the effect of AI-based applications on the participation of the masses in the #EndSARS movement. Their findings indicate that the social media algorithms were able to make the grassroot activism widely visible but have also increased the spread of misinformation. These notes support the twofold role of algorithmic systems on digital trust and civic engagement, particularly in charged political contexts.

At the same time, Okon and Eze (2020) explored the mobilizing potential of mobile technology for the development of a rural community in Southern Nigeria. Their sample study using survey methodology suggested that mobile communication technologies increase the accessibility of health and agriculture related information but the current challenges like incomplete network coverage and computer warehouse, still tend to hinder the growth of mobile communications.

Berente et al. (2021) discussed both moral and corporate consequences of integrating artificial-intelligence-based systems into business communication. Their conclusion has been that the systems are more efficient yet much plagued by emotional intelligence and cultural sensitivity shortcomings, thereby creating

possible disconnects between the organizations and constituents. This is evidenced by the conclusive empirical evidence of Nigeria, where chatbots are most likely to attract complaints by their users due to failure to capture the local linguistic elements or derive suitable responses.
In addition, Lupton and Michael (2017) examined the ramifications of algorithmic governance in online societies, whose character can be observed as influencing a significant number of users who are oblivious to the data-based procedures of the curation of content, which evokes issues of surveillance and trust. These observations can be compared to the situation in Nigeria, which is not very stable in terms of data privacy framework.

Collectively, these empirical studies provide a vision of the dramatic future that the new forms of communication technology may offer and highlight major shortcomings in terms of trust, accessibility, ethics and digital literacy.

Methodology

The current research employed a mixed-methods research design with the aim of examining how new communication technologies have affected digital communities in Southwestern Nigeria. The format of the mixed method was considered suitable so that the results would be generalizable as well as contextual. To do so, a quantitative survey was supplemented with the qualitative and in-depth interviews. In regard to the former, a purposive sampling plan was observed so that the 300 questionnaire respondents who were spread out in the states of Lagos, Oyo, Ogun, Ondo, Osun and Ekiti were active WhatsApp, Telegram and X users. These were people who were in the field of communication practices, those who used technology and educators, who were equally distributed in terms of gender and age. The measurement of the data was based on a structured questionnaire that incorporated a five-point Likert scale, with an expert opinion and piloting resulting in a Cronbach alpha of 0.82. Statistical analysis was conducted in SPSS 27 and it was based on descriptive statistics, Pearson correlation and regression techniques.

At the same time, 15 key informants, including ICT coordinators, media strategists and digital community moderators, were interviewed to provide some supplementary ethical and practical insights regarding adopting the technologies. Infrastructural and cultural heterogeneity was addressed by recruiting participants both in the urban and semi-urban settings. Thematic analysis in NVivo was applied to qualitative data collected using interviews that were semi-structured and focus group discussions via the internet based on the framework described by

Braun and Clarke (2019). Triangulation of quantitative with qualitative evidence and methodological triangulation provided a fuller description of online participation, digital technologies and algorithmic regulation in the area.

Discussion of Findings

The following discussion summarizes the major findings based on the data collected using quantitative and qualitative methods, which analyze how the emergent communication technologies are defining both digital communities in Southwestern Nigeria. The patterns of usage, the degree of trust, the technological adoption processes and the perceived impacts of digital engagement are the points covered in the analysis. Findings are presented in narrative form, supported by tables and cross-tabulations and interpreted with respect to existing literature.

Table 1: Frequency of Communication Technology Usage Across States

State	High Usage (%)	Moderate Usage (%)	Low Usage (%)
Lagos	88	9	3
Oyo	75	17	8
Osun	69	21	10
Ogun	71	20	9
Ondo	64	26	10
Ekiti	58	30	12

Authors Computation 2025

Table 1 shows that Lagos recorded the highest percentage of high communication technology usage (88%), followed by Oyo (75%) and Osun (69%). This suggests that urban centers demonstrate stronger technological penetration, likely due to infrastructure, education and exposure. Ekiti had the lowest high usage (58%), indicating a relative digital lag.

Table 2: Cross-tabulation Between Age Group and Preferred Platform

Age Group	WhatsApp (%)	Telegram (%)	Facebook (%)	X (%)
18-25	82	41	39	70
26-35	74	38	51	61
36-45	63	22	60	42
46+	49	10	64	21

Authors Computation 2025

Table 2 highlights platform preferences by age group. Younger respondents (18–25) predominantly prefer WhatsApp and X, while older groups (46+) lean towards Facebook. This aligns with previous studies suggesting generational

preferences in social media use (Pew Research Center, 2021). Telegram use is relatively lower across all age brackets.

Table 3: Perceived Impact of Technology on Community Engagement

Response Category	Frequency	Percentage (%)
Strongly Agree	140	46.7
Agree	95	31.7
Neutral	30	10.0
Disagree	25	8.3
Strongly Disagree	10	3.3

Author's Computation 2025

According to Table 3, a combined 78.4% of respondents either strongly agreed or agreed that new communication technologies positively impacted their level of community engagement. This supports the notion that digital platforms have enhanced inclusivity, access to information and interactive participation (Castells, 2010). Only 11.6% of respondents disagreed or strongly disagreed, indicating minimal opposition to technological impact.

The findings suggest that communication technologies are reshaping digital communities across Southwestern Nigeria. Usage remains highest in urban and semi-urban states, driven by infrastructure and tech culture. Younger people dominate platforms like WhatsApp and Twitter, driving civic discourse and digital activism. However, generational gaps and regional disparities persist. Trust and engagement levels remain generally high, reinforcing the strategic role of new communication tools in sustaining digital communities. These insights provide a strong empirical basis for future policy frameworks aimed at expanding equitable access to digital participation.

Conclusion

This study evaluates how the emergent communication technologies reorganize the digital communities of Southwestern Nigeria. The results show that tools like WhatsApp, Telegram, X and Facebook are profoundly redefining communication, civic participation and knowledge sharing, especially among the youth and the urban populations. Despite these trends, however, a star-shaped cluster of obstacles—things such as poor infrastructure, low digital literacy levels, algorithm discrimination and data security—remains. The presence of such barriers also points to the need for precautionary policy frameworks and particular

investment measures that will facilitate equivalent access as well as efficient and secure digital interaction.

Recommendations

Based on the findings, the following recommendations are proposed to guide policy, practice and future research:

i. Government and telecom providers should improve internet and power access in underserved areas to promote digital inclusion.
ii. Schools and community centers should offer digital skills training focused on ethics, data protection and critical media use.
iii. Regulatory bodies should enforce clear policies on platform accountability, algorithm transparency and user data governance to strengthen digital trust.

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