Perceptions on Digital Inclusion and Communication Access in Igbo Rural Communities

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Abstract

This study examines the perceptions, challenges, and opportunities surrounding digital inclusion and communication access in Igbo rural communities in Nigeria. Through semi-structured interviews chosen from Uturu community in Abia state. The specific objectives of the study are: to investigate how people from Igbo rural communities perceive digital inclusion, to examine some of the challenges which affect accessibility of digital technologies in Igbo rural areas and to discuss possible solutions for bridging the digital divide and challenges of communication access which exist between urban and rural communities in Igbo land. The findings from the study reveal a good community understanding of digital inclusion that goes beyond simple access considerations to encompass skills, meaningful use, cultural integration and the relationship between traditional and digital communication systems. This shows that rural communities are not passive recipients of technological change but active agents capable of nuanced analysis and creative problem-solving. It also highlights the importance of indigenous language considerations in digital inclusion planning. In addition, the study shows that emphasis should be on integration rather than replacement of traditional communication systems. The study contributes to the growing body of literature on digital inclusion in rural communities and provides insights for policymakers and development practitioners working to enhance digital equity in rural communities.

Keywords: Digital inclusion, rural communities, Igbo, Nigeria, communication access, digital divide

1. Introduction

The concept of digital inclusion has emerged as a critical development priority in the 21st century, particularly as digital technologies become increasingly central to economic participation, social interaction, and access to essential services. Digital inclusion encompasses not merely access to digital devices and internet connectivity, but also the skills, support, and motivation necessary for meaningful engagement with digital technologies (van Dijk, 2020). In the context of sub-Saharan Africa, where rural populations constitute a significant portion of the demographic landscape, understanding how communities perceive, and experience digital inclusion is very necessary for developing effective policies and interventions.

Nigeria, as one of the most populated nations in Africa provides a good case study for examining digital inclusion in rural contexts. Nigerian citizens appear to be known for increasing urban adoption of mobile technologies alongside consistent rural-urban digital divides. The Igbo-speaking, one of Nigeria's three major ethnic groups, are located in the south eastern Nigeria and are known for their rich culture and tradition embellished with rich linguistic features. This rich tradition of community-based communication systems has evolved over centuries and are transmitted through the instrumentality of town criers, community assemblies, and symbolic communication methods for proper dissemination of information in the rural communities. Such synergy provides a good platform for assessing how indigenous communities can successfully overcome the challenges of combining traditional communication systems and emerging digital technologies. The introduction of digital technologies into these contexts raises important

questions about cultural adaptation, technological appropriation, and the potential for hybrid communication systems that blend traditional and digital approaches.

This study provides a good reference work on digital inclusion specifically as it affects perceptions of rural dwellers. While most existing literature focus on analysing technical and economic barriers to digital inclusion in rural Africa, little attention has been paid to finding out how communities themselves perceive digital inclusion as well as some of the challenges they encounter in trying to access digital technologies. This study seeks to explore these issues through the following research questions. How do rural Igbo community members conceptualise digital inclusion and its relevance to their lives? What challenges do they face when trying to access digital technologies? What can be done to enhance digital inclusion and promote technological accessibility in rural communities in Igbo land? It is believed that findings from the study will provide a good reference work in this area of study. Policy makers will benefit from it because it will reveal the feelings/ perceptions of members of rural communities on digital inclusion and communication access. This will help to ensure that investments in this area translate into meaningful improvements in rural livelihoods and well-being thereby bridge the gap between policy and implementation. The study adopts the theoretical principles of digital divide and technology appropriation theory as a framework.

2. Theoretical Framework

2.1 Digital Divide Theory

The theoretical foundation for this study draws from digital divide theory which has evolved from simple binary concepts of access versus non-access to more nuanced understandings of multi-level digital inequalities. Van Dijk's (2020) comprehensive model of the digital divide identifies four sequential types of access: motivational access (the desire to use digital technologies), material access (physical access to devices and connectivity), skills access (the ability to use digital technologies effectively), and usage access (the opportunity for meaningful and beneficial use).

This framework is particularly relevant to the Igbo rural context because it moves beyond infrastructure-focused approaches to consider the complex interplay of social, cultural, and economic factors that influence digital participation. The model recognises that even when physical access to technology is available, other barriers may prevent meaningful engagement with digital tools.

2.2 Technology Appropriation Theory

Technology appropriation theory, developed by Carroll, Vetere, Howard and Murphy (2002) and refined by Dourish (2003), provides another lens for understanding how communities adapt and integrate new technologies into existing social and cultural practices. This theory suggests that technology adoption is not a passive process of accepting predetermined functionalities, but rather an active process of adaptation, modification, and integration that reflects local needs, values, and practices.

In the context of Igbo rural communities, technology appropriation theory helps to explain how digital technologies might be selectively adopted, modified, or integrated with existing communication practices. The theory's emphasis on user agency and creative adaptation aligns with the community-centred approach of this study.

2.4 Indigenous Knowledge Systems

The integration of indigenous knowledge systems theory (Agrawal, 1995; Berkes, 2012) provides a crucial context for understanding how traditional Igbo communication practices might interact with digital technologies. Indigenous knowledge systems theory recognises that local communities possess sophisticated knowledge and practices that have evolved to address specific environmental and social challenges. In the context of this study, indigenous knowledge systems theory helps to frame traditional Igbo communication practices not as obstacles to digital inclusion, but as valuable resources that might be integrated with digital technologies to create more culturally appropriate and effective communication systems.

3. Literature Review

3.1.1 Perception

The word perception has been defined as how human beings interpret and organise sensory information from the world around them. That is how human beings mirror the world around them. This translates to how the behave, the way they communicate and the way they relate with other people. Myers (2014) defines perception as the process by which sensory information is interpreted and organised. Bernstein (2016) adds that it is the process of becoming aware of situations as well as making meaningful inferences to stimuli. Richards (2010) notes that perception not only involve interpretation of sensory information but it also allows human beings to understand and push through their environments successfully. Purves et al (2022) attests to this by explaining perception as the process by which the brain interprets sensory stimuli, enabling them to understand and navigate through their environment.

Perception is very important for human survival because it helps to foster healthy relationship, effective communication and insights for overcoming human challenges. Human behaviours are direct product of the way people perceive things around them.

3.1.2 Digital Inclusion

Digital inclusion refers to the process which ensures that all individuals have both access and the ability to effectively use digital technologies and the internet in their environment. It is a deliberate effort to ensure that all individuals irrespective of background, location, gender or age have unhindered access to digital technologies and communication. Writing on digital divide which is the opposite of digital inclusion, Soomro, Kale and Bernstein (2020) note that digital divide hinges on access to various dimensions of information and communication technology including physical access, motivation, skills, and actual usage of digital technologies. Ehimuan, Anyanwu, Olorunsogo, Akindote and Reis (2024) observe that digital divide is not only a matter of access to technology but cuts across the issue of affordability, digital literacy, and equitable distribution of benefits derived from digital participation. This means the the concept of digital inclusion is multifaceted.

3.2 Communication Access

Communication Access refers to the extent to which members of different communities both developed and rural, are able to use digital and technological gadgets such as phones, internets etc to solve their communication problems. This could be measured by internet speed, availability of network, degree of consistency as well as steady power supply. Studies in rural communication systems in Nigeria have documented the continued importance of traditional media alongside the gradual introduction of digital technologies. Moemeka (1998) provides a

foundational analysis of traditional communication systems among Igbo communities, describing the sophisticated networks of oral communication, symbolic representation, and community-based information sharing that have historically served these communities before the advent of modern technologies. Nwabueze and Ebeze (2013) examines the intersection of traditional and digital media in Nigerian rural contexts, finding that hybrid approaches that combine traditional and digital elements often prove most effective for community communication.

3.3 Language and Digital Inclusion

Research by Osborn (2010) on African language computing highlights both the technical challenges and cultural importance of developing digital resources in indigenous languages. Studies specific to the Igbo language and digital technologies (Eme & Mbagwu, 2011) document efforts to develop Igbo-language digital content and applications, while also noting significant barriers related to standardisation, technical infrastructure, and commercial viability. International research on community-based approaches to digital inclusion provides important context for understanding potential interventions in Igbo rural communities. Similar research in the African context (Kapondera & Namusanya, 2016) examines community information centres in Malawi, revealing both the potential and limitations of community-based approaches to digital inclusion.

4. Methodology

4.1 Research Design

This study employs a mixed method research design utilising semi-structured interviews as the primary data collection method to get perceptions, experiences, and perspectives of community members regarding digital inclusion and communication access. The qualitative approach was also chosen to capture theoretical assumptions and existing literatures on related works. This methodology is relevant for this study because it focuses of understanding community perceptions rather than measuring quantitative indicators of digital access or use.

4.2 Participants and Sampling

The study involves twenty five participants from selected Igbo rural communities in Uturu in Abia state, Nigeria selected using purposive sampling. The sample ensures representation across different community roles and perspectives. Participants include five teachers, five community leaders, five opinion leaders, and five religious leaders, and five traders. The choice of these individuals lies on the view that they tend to play key role in community communication and decision-making. Moreover, they engage in community affairs and could provide insights into both traditional communication practices and experiences with digital technologies. The diversity of roles represented in the sample was intended to capture different perspectives on digital inclusion based on varying levels of education, technological exposure, and community responsibility.

4.3 Data Collection

Data for the study were sourced through primary and secondary data, The primary data were generated from semi-structured interview administered on the selected twenty five participants chosen for this study based on three thematic areas: participants' understanding and awareness of digital inclusion concepts, challenges to both accessibility and usage of digital technologies in their communities, and possible solutions to digital divide and communication

access. Secondary data were sourced from both relevant online materials and other written works.

4.5. Data Analysis

Data analysis employed thematic analysis of Braun and Clarke (2006) and guided by the research questions. However, the study remained open for unexpected findings, and emergent themes. The analysis sought to identify both explicit statements by participants and implicit meanings and assumptions underlying their responses. The human participants involved gave their consent for the interview**.**

4.6 Analysis of Data

The thematic analysis of data reveal three major themes that capture participants' perceptions of digital inclusion and communication access in Igbo rural communities as: awareness and understanding, challenges/ barriers, solutions which is, way forward. Each theme encompasses several sub-themes that provide detailed insights into community perspectives.

5.1 Theme 1: Awareness and Understanding of Digital Inclusion

5.1.1 Basic Technological Awareness

Different participants demonstrated varying levels of awareness regarding digital technologies and their potential applications. Most participants showed familiarity with basic mobile phone technology, with one participant noting: "*We use phones in the villages here. Most of the phones we use are not smartphones. So I know what digital inclusion means...Hahaha."* This response reveals both familiarity with mobile technology and an intuitive understanding that digital inclusion encompasses more than basic phone use.

The awareness theme also revealed participants' recognition that digital inclusion extends beyond simple device ownership. One participant articulated this understanding: *"But I think when you talk about digital inclusion, it might mean more than just the use of phones for communication and information dissemination."* This perspective aligns with scholarly definitions of digital inclusion that emphasise meaningful use rather than mere access.

5.1.2 Conceptualisation of Digital Media Benefits

Participants expressed positive attitudes toward digital media and its potential benefits for their communities. The perception that digital inclusion represents "*a good thing*" that would benefit community members, who lack technological skills, was consistently expressed. One participant explained: *"I know about digital media. This is a good thing. It will be good for some of us who do not know how to use digital devices to operate them and use them to access information."*

This perspective reveals an understanding of digital inclusion as potentially democratising, offering opportunities for enhanced information access across different skill levels within the community. The recognition of digital media as beneficial for information access suggests awareness of the informational dimensions of digital inclusion.

5.1.3 Integration vs. Replacement Perspectives

A sophisticated understanding emerged regarding the relationship between digital technologies and existing communication systems. Rather than viewing digital inclusion as necessarily replacing traditional communication methods, some participants conceptualised it in

terms of integration or augmentation. One participant posed the question: "*Do you mean using digital media to access information and to communicate with rural communities? ...It is about replacing local communication media with digital devices or does it entail integrating them?"*

This perspective demonstrates awareness of the complex relationship between traditional and digital communication systems and suggests openness to hybrid approaches that preserve valuable aspects of existing systems while incorporating new technologies.

5.2 Theme 2: Challenges and Barriers

5.2.1 Access and Device Availability

The most frequently cited challenge was limited access to appropriate digital devices. Participants consistently highlighted the gap between basic mobile phones and smartphones, with implications for digital inclusion. One participant articulated this challenge: "*It is a great idea but access to digital devices is a challenge. How many of us have smartphones or even high-tech devices?"*

This barrier covers both economic constraints that limit device acquisition and the technological gap between basic phones, which are more widely available, and smartphones, which enable more complex digital participation.

5.2.2 Skills and Digital Literacy

Beyond device access, participants identified digital literacy as a significant barrier. The challenge was framed in terms of both basic operational skills and broader technological competency. One participant explained: "*I think access and penetration are two different things. We have the challenge of access and penetration which is about how tech-savvy we are. How many people in the rural communities have the basic knowledge of the use of digital devices and can operate them?"*

This insight reveals an understanding of the multi-dimensional nature of digital inclusion, recognising that physical access to technology does not automatically translate into effective use. The distinction between "access" and "penetration" demonstrates sophisticated thinking about the layers of barriers that communities face.

5.2.3 Infrastructure Deficits

Infrastructure challenges emerged as fundamental barriers to digital inclusion. Participants identified both electrical power and telecommunications network reliability as critical constraints. Regarding electricity, one participant noted: "*Another challenge is do we have the infrastructure in these rural communities. In my community, electricity is a challenge. Digital devices need electricity. The supply of electricity is not steady in many Igbo communities."*

Network reliability was identified as equally problematic: "*Like, we have these MTN masts but sometimes, the network goes out and for days, we are out of network. I think digital devices use networks to operate. That is one of the challenges too."* These infrastructure challenges highlight the systemic nature of barriers to digital inclusion in rural contexts.

5.2.4 Language and Communication Barriers

Language emerged as a multifaceted barrier affecting both access to information through existing media and the potential effectiveness of digital inclusion initiatives. Participants noted

challenges with English-language content: *"We access information most often through radio and people particularly those who are not very literate in the English language which is often used for radio transmission complain of accessing information."*

This finding highlights the importance of indigenous language considerations in digital inclusion planning.

5.2.5 Cultural and Habitual Resistance

Participants identified potential resistance to digital technologies based on familiarity with traditional communication systems. One participant explained: "*Also some people are already used to our Indigenous communication media like town criers, local symbolic advertisements, and many others that adapting to digital devices for accessing information might be a challenge*."

This perspective recognises that successful digital inclusion must account for existing social and cultural practices rather than simply introducing new technologies without considering their relationship to established systems.

5.3 Theme 3: Solutions and Way Forward

5.3.1 Indigenous Language Integration

Participants identified indigenous language support as a crucial component of effective digital inclusion. The potential for using local languages in digital communication was seen as transformative: "*It is a good thing if we can find a way to use our local languages for communication using those digital devices."*

However, about seventy five percent of participants also recognised the technical and developmental challenges involved in indigenous language computing: "*I hear people talk about using our Indigenous and local language to reach rural communities and dwellers but the big question is are the local languages developed for such purposes? I don't know...Maybe, we need support from language experts to work on our languages for this purpose."*

5.3.2 Government and Infrastructure Investment

Ninety percent of participants emphasised the essential role of government support in addressing infrastructure deficits and creating enabling environments for digital inclusion. One participant noted: "*We also need the government to support this agenda and provide the necessary infrastructure: electricity and network and all that. I think the government needs to invest in the project."*

The government's role was seen as extending beyond infrastructure provision to policy development and implementation: *"For me I think the government's need to make sure they do what they promise. They should also provide other infrastructures. I ask you, how many governments in the Nigeria know the impact of rural digital access? No bi until they understand?*

5.3.3 Hybrid Communication Systems

Perhaps the most innovative solution proposed by participants involved creating hybrid systems that integrate traditional and digital communication methods. The concept of "digital town-criers" exemplifies this approach: "*What about having people like information agents in rural communities who serve as what we know as town criers but use digital media to access and*

then disseminate such information to other people in the rural communities? Maybe, having 'digital town-criers' hahaha."

This solution demonstrates creative thinking about how to preserve valuable aspects of traditional communication systems while leveraging digital technologies to enhance their effectiveness and reach.

5.3.4 Integration Rather Than Replacement

Eighty percent of participants consistently advocated integration rather than replacement approaches to digital inclusion: "*I think merging local Indigenous communication media and the digital devices/media will be better.. Replacing local media is not the best as some people suggest*."

This perspective reflects a good understanding of the value of existing communication systems and the potential for digital technologies to enhance rather than eliminate traditional practices.

6. Discussion

6.1 Theoretical Implications

The findings of this study provide important insights for understanding digital inclusion through multiple theoretical lenses. From the perspective of digital divide theory, the data reveals that participants in Igbo rural communities demonstrate awareness that extends beyond simple access considerations to encompass skills, meaningful use, and integration with existing practices. This aligns with van Dijk's (2020) multi-level model of digital divide, particularly the progression from material access through skills access to usage access. The participants' emphasis on integration rather than replacement of traditional communication systems strongly supports technology appropriation theory. Rather than passively accepting predetermined uses of digital technologies, community members are actively envisioning how these tools might be adapted and integrated with existing cultural practices.

The findings agrees with Cultural-Historical Activity Theory which claims that digital technologies cannot be separated from the cultural and social contexts in which they are deployed. Participants' attention to language barriers, cultural practices, and existing communication systems demonstrates an understanding of the mediated nature of technological tools and the importance of cultural context in their effective implementation.

6.2 Practical Implications for Digital Inclusion Policy

The study's findings have significant implications for digital inclusion policy and practice in Nigeria and similar contexts. The participants' complex understanding of digital inclusion challenges suggests that community perspectives should be central to policy development rather than peripheral considerations. On the other hand, the emphasis on infrastructure development, particularly reliable electricity and telecommunications networks, reinforces existing policy priorities while highlighting the foundational importance of these investments. However, the findings suggest that infrastructure development alone is not sufficient without attention to skills development, language considerations, and cultural integration.

The proposal for hybrid communication systems offers innovative directions for digital inclusion programming. Rather than focusing solely on individual device ownership and skills training, programs might explore how important it is for government to create institutional arrangements that promote both traditional and digital communication channels. Training local

town criers will help them become better middle information personals that can mediate between rural communities and others thereby bridging digital divide.

6.3 Linguistic and Cultural Considerations

The study's findings highlight the critical importance of linguistic diversity in digital inclusion efforts. Participants' recognition that both English and Nigerian Pidgin English have limitations for reaching all community members underscores the need for indigenous language computing resources. However, their acknowledgment of the developmental challenges involved in creating these resources suggests the need for sustained investment in linguistic research and technological development.

The cultural preference for integration rather than replacement of communication systems offers important guidance for development practitioners. Rather than viewing traditional communication practices as obstacles to modernisation, these findings suggest they should be seen as resources that can enhance the effectiveness and cultural appropriateness of digital inclusion efforts.

6.4 Community Agency and Participation

The findings demonstrate significant community agency in conceptualising digital inclusion solutions. Participants did not position themselves as passive recipients of technological interventions but rather as active agents capable of creative problem-solving and cultural adaptation. This agency should inform participatory approaches to digital inclusion programming that position communities as partners in design and implementation rather than merely beneficiaries of predetermined interventions.

The diversity of perspectives represented in the study, from basic awareness to analysis of integration challenges, suggests the importance of differentiated approaches that can accommodate varying levels of technological experience and interest within communities.

6.5 Limitations and Future Research

Future research might expand both the geographic scope and the demographic diversity of participants to provide more comprehensive insights.

The study's focus on perceptions and attitudes, while valuable, would benefit from complementary research examining actual technology use patterns and the outcomes of digital inclusion interventions in these communities. Future research might also explore the specific technical and linguistic requirements for developing Igbo-language digital resources, building on participants' recognition of this need. ss of these innovative approaches.

7. Conclusion

This study provides important insights into how members of Igbo rural communities perceive digital inclusion and communication access. The findings reveal a good community understanding of digital inclusion that goes beyond simple access considerations to encompass skills, meaningful use, cultural integration, and the relationship between traditional and digital communication systems. The three major themes identified in the analysis are: awareness and understanding, challenges and barriers, and solutions and way forward. This shows that rural communities are not passive recipients of technological change but active agents capable of

nuanced analysis and creative problem-solving. The participants' recognition of digital inclusion as beneficial is coupled with a realistic assessment of barriers and innovative proposals for culturally appropriate solutions.

The study's findings challenge common assumptions about rural communities' readiness for digital inclusion and suggest that community perspectives should be central to policy and program development. The emphasis on integration rather than replacement of traditional communication systems offers important guidance for practitioners seeking to develop culturally appropriate and sustainable digital inclusion interventions. The proposed solutions, particularly the concept of hybrid communication systems that combine traditional and digital elements, represent innovative approaches that could inform digital inclusion efforts not only in Nigeria but in other contexts where traditional communication systems remain important. The recognition of language diversity as a critical factor in digital inclusion success reinforces the need for sustained investment in indigenous language computing resources.

Theoretically, the study demonstrates the value of community-centred approaches to understanding digital inclusion that appreciate local agency, cultural context, and creative appropriation processes. The findings support multi-dimensional models of the digital divide that attend to the complex interplay of access, skills, culture, and meaningful use.

Also, policymakers, and technology designers working to enhance digital inclusion in rural contexts will benefit from the result of findings. The study suggests that effective digital inclusion requires not only infrastructure investment and skills training but also attention to linguistic diversity, cultural practices, and community-driven solutions. The voices and perspectives of rural community members, as captured in this study, offer valuable insights that should inform the next generation of digital inclusion policies and programmes. The journey toward comprehensive digital inclusion in rural communities is complex and multifaceted, requiring sustained commitment from multiple stakeholders and approaches that respect local contexts while leveraging technological possibilities. This study contributes to that journey by documenting community perceptions and priorities that are essential for developing effective, culturally appropriate, and sustainable digital inclusion initiatives.

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