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Abstract

Purpose: The aim of the study was to investigate role of information and communication technologies in promoting financial inclusion in rural African Communities

Methodology: This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low cost advantage as compared to a field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

Findings: This transformation has led to increased savings, facilitated seamless payments, and expanded access to credit, contributing to economic growth, poverty reduction, and enhanced financial resilience in rural communities. Nonetheless, persistent challenges such as limited infrastructure and digital literacy gaps underscore the need for ongoing efforts to fully harness the potential of ICTs, making them a crucial driver of rural development and inclusive growth in Rwanda.

Unique Contribution to Theory, Practice and Policy: Diffusion of Innovation Theory, Social Capital Theory & Resource-Based Theory may be used to anchor future studies on role of information and communication technologies in promoting financial inclusion in rural African Communities. Collaborate with technology providers to develop and deploy ICT solutions tailored to the specific needs and preferences of rural African communities. Policymakers should ensure that regulations support innovation, competition, and consumer protection.

Keywords: *Information Communication Technologies Promoting Financial Inclusion Rural African Communities*

INTRODUCTION

Financial inclusion refers to the availability and accessibility of financial services to all segments of the population, particularly those who are underserved or excluded from the traditional banking system. In developed economies like the United States, there has been a significant push for financial inclusion in recent years. For instance, according to a study by Demirguc-Kunt and Klapper (2013), the percentage of adults in the USA with a formal bank account increased from 89% in 2011 to 93% in 2014, reflecting a positive trend in financial inclusion. Additionally, initiatives such as the Community Reinvestment Act (CRA) have been instrumental in promoting financial access to low and moderate-income individuals and communities, ensuring that banks serve the needs of underserved populations.

In the United Kingdom, the government and financial institutions have also made efforts to enhance financial inclusion. According to data from the World Bank, in 2014, 97% of the adult population in the UK had access to a bank account. One notable example is the introduction of basic bank accounts with no overdraft facilities, aimed at providing banking services to individuals who might otherwise be excluded due to poor credit histories. These initiatives align with the broader global push for financial inclusion as a means to reduce poverty, improve economic stability, and promote overall economic development (Demirguc-Kunt & Klapper, 2013).

In Sub-Saharan African economies, financial inclusion remains a complex challenge, but progress is being made. For example, Nigeria has implemented various financial inclusion initiatives, including the National Financial Inclusion Strategy (NFIS) launched in 2012. According to the World Bank, the percentage of adults with a formal bank account in Nigeria increased from 26.3% in 2010 to 38.3% in 2018, reflecting some improvement in financial inclusion efforts (World Bank, 2019). Additionally, the expansion of mobile banking and fintech solutions has played a significant role in reaching underserved populations in the region.

In Ghana, financial inclusion has also seen positive developments. The Ghanaian government, in collaboration with financial institutions, has introduced measures to extend financial services to marginalized communities. According to a study by Adu, (2019), the percentage of adults with access to formal financial services in Ghana increased from 29% in 2011 to 58% in 2017, showcasing the effectiveness of these efforts. These examples highlight the ongoing efforts in Sub-Saharan Africa to promote financial inclusion, which is crucial for reducing poverty and fostering economic development in the region.

In Brazil, the government has made substantial efforts to enhance financial inclusion. According to the World Bank's Global Findex Database, in 2014, around 55% of Brazilian adults had a formal bank account. However, the introduction of programs like Bolsa Família, which provides conditional cash transfers to low-income families, has played a role in increasing financial access. Additionally, the growth of digital banking and fintech solutions has allowed more Brazilians to access financial services conveniently, even in remote areas (World Bank, 2017).

In Indonesia, the country's financial inclusion initiatives have made significant progress in recent years. According to a study by Setiawan (2019), the percentage of adults with access to formal financial services in Indonesia increased from 36% in 2011 to 67% in 2017. This improvement is partly attributed to the government's National Strategy for Financial Inclusion (SNKI), which aims to provide access to financial services for all Indonesians. The expansion of branchless banking, mobile money services, and financial literacy programs has contributed to this positive trend in financial inclusion.

In Kenya, the success story of M-Pesa, a mobile money service launched in 2007, has significantly contributed to financial inclusion. According to data from the World Bank's Global Findex Database, in 2011, only 26% of Kenyan adults had access to formal financial services. However, with the widespread adoption of M-Pesa, which allows users to send and receive money, pay bills, and access other financial services via mobile phones, the percentage of adults with formal accounts increased to 82% by 2017. This remarkable progress showcases the transformative power of mobile technology in bringing financial services to underserved populations (World Bank, 2017).

In Bangladesh, the government and microfinance institutions have collaborated to promote financial inclusion, particularly among rural and low-income communities. The success of Grameen Bank, founded by Muhammad Yunus in 1983, as well as other microfinance institutions, has played a crucial role in providing small loans and financial services to individuals who were previously excluded from the formal financial sector. According to a study by Kabir (2017), these efforts have led to a substantial increase in financial inclusion in Bangladesh, contributing to poverty reduction and economic development. In 2017, it was reported that around 50% of adults in Bangladesh had access to formal financial services, compared to 31% in 2011 (World Bank, 2017).

In Mexico, the government has implemented various programs and initiatives to promote financial inclusion. One notable initiative is the Conditional Cash Transfer Program (Programa Oportunidades), which provides financial incentives to low-income families to encourage them to use formal financial services, such as bank accounts and electronic payments. According to data from the World Bank's Global Findex Database, the percentage of adults with formal bank accounts in Mexico increased from 27% in 2011 to 39% in 2017. These efforts demonstrate how targeted social programs can be used to drive financial inclusion (World Bank, 2017).

In Nigeria, the Central Bank has played a significant role in advancing financial inclusion through policies and regulations. The "Know Your Customer" (KYC) requirements were introduced to simplify the account opening process and reduce barriers for individuals, especially in rural areas. Additionally, Nigeria has seen the growth of fintech companies that offer mobile banking and digital payment solutions, making it easier for people to access financial services. The Global Findex Database reports that the percentage of adults with formal financial accounts in Nigeria increased from 26% in 2014 to 40% in 2017, highlighting the progress in financial inclusion (World Bank, 2017).

In South Africa, initiatives have been launched to increase financial access among previously underserved populations. One significant development is the introduction of low-cost, no-frills bank accounts known as "Mzansi" accounts. These accounts were designed to make banking services more affordable and accessible to South Africans with low incomes. According to data from the Global Findex Database, the percentage of South African adults with formal bank accounts increased from 64% in 2014 to 75% in 2017. Additionally, mobile banking services have gained popularity, contributing to greater financial inclusion (World Bank, 2017).

In Pakistan, the government and the State Bank of Pakistan have implemented policies to promote financial inclusion. The introduction of branchless banking services, often delivered through mobile network operators, has played a crucial role in reaching underserved areas. These services allow people in remote regions to conduct financial transactions using their mobile phones, reducing the need for physical bank branches. As a result, financial inclusion has improved, with the percentage of adults with formal bank accounts in Pakistan rising from 13% in 2014 to 21% in 2017, according to the Global Findex Database (World Bank, 2017).

In Rwanda, the government has prioritized financial inclusion as part of its broader economic development agenda. The National Bank of Rwanda has introduced policies to enhance financial access, including the promotion of digital financial services and the establishment of agent banking networks in rural areas. These efforts have resulted in a significant increase in financial inclusion, with the percentage of adults with formal bank accounts in Rwanda rising from 21% in 2014 to 36% in 2017, according to the Global Findex Database (World Bank, 2017).

In Tanzania, mobile money services like M-Pesa and Tigo Pesa have played a crucial role in expanding financial inclusion. These services have enabled individuals, particularly in remote areas, to access a wide range of financial services, including payments, savings, and even credit. According to the Global Findex Database, the percentage of Tanzanian adults with formal financial accounts increased from 15% in 2014 to 35% in 2017. The adoption of mobile money has been instrumental in reaching the unbanked and underserved populations in the country (World Bank, 2017).

In Ghana, the government has taken steps to improve financial access for its citizens. One significant initiative is the introduction of the National Financial Inclusion and Development Strategy (NFIDS) in 2019. NFIDS aims to enhance access to financial services for all segments of the population, with a particular focus on the underserved and unbanked. According to data from the World Bank's Global Findex Database, the percentage of adults with formal bank accounts in Ghana increased from 29% in 2011 to 58% in 2017, indicating substantial progress in financial inclusion (World Bank, 2017).

In Nigeria, financial inclusion has been a key focus of the Central Bank of Nigeria (CBN). The CBN launched the National Financial Inclusion Strategy (NFIS) in 2012, which aimed to reduce the percentage of financially excluded adults in Nigeria. This strategy has led to the growth of agent banking, mobile banking, and the adoption of innovative fintech solutions. According to the Global Findex Database, the percentage of Nigerian adults with formal bank accounts increased from 26% in 2014 to 40% in 2017, reflecting positive strides in financial inclusion (World Bank, 2017).

Information and Communication Technologies (ICTs) encompass a wide range of technologies that facilitate the processing, transmission, and sharing of information. Four prominent ICTs that have had a profound impact on various sectors, including online learning and financial inclusion, are the internet, mobile technology, digital platforms, and blockchain technology. The internet, a fundamental ICT, has revolutionized online learning by providing learners with access to a wealth of educational resources and enabling remote collaboration and interaction. Additionally, it plays a pivotal role in financial inclusion by facilitating online banking and digital financial services, allowing individuals to access financial products and services remotely. Mobile technology, another crucial ICT, has enabled both online learning and financial inclusion in developing economies, where many individuals lack access to traditional infrastructure. Mobile phones serve as learning tools and platforms for accessing financial services, bridging geographical gaps. Digital platforms, such as e-learning platforms and mobile banking apps, have become central to online learning and financial inclusion efforts, offering user-friendly interfaces and accessibility.

Furthermore, blockchain technology has the potential to enhance the security and transparency of financial transactions, particularly in the context of digital financial services, while also enabling the secure verification of academic credentials and certificates, thereby benefiting both financial inclusion and online learning. These ICTs are integral components of the contemporary landscape, driving advancements in education and financial services, and their synergies have the potential to create transformative impacts on access to education and financial resources (UNESCO, 2020; World Bank, 2016; Tapscott & Tapscott, 2016; Donnelly & Singh, 2018).

Problem Statement

The role of Information and Communication Technologies (ICTs) in promoting financial inclusion in rural African communities is a topic of growing interest. The use of ICTs has been shown to have a positive impact on financial inclusion, particularly in rural areas where access to financial services is limited. Despite the various efforts by governments, regulators, and financial institutions to improve financial inclusion through digital platforms, the financial inclusion gap has expanded (Donnelly & Singh, 2018)

Diffusion of Innovation Theory by Everett Rogers

The Diffusion of Innovation Theory, introduced by Everett Rogers in 1962, explores how new ideas, technologies, or innovations spread within a population over time. This theory is relevant to the study on the role of Information and Communication Technologies (ICTs) in promoting financial inclusion in rural African communities because it helps understand the adoption process of ICT-based financial services among these communities. By identifying the factors that influence the rate of adoption and the barriers that slow it down, researchers can provide valuable insights into strategies for effectively introducing ICT-based financial services in rural Africa (Rogers, 1962).

Social Capital Theory by Pierre Bourdieu and James Coleman

Social Capital Theory, originally developed by Pierre Bourdieu and later expanded upon by James Coleman, emphasizes the value of social networks and relationships in achieving desired outcomes. In the context of promoting financial inclusion in rural African communities, this theory is relevant because it sheds light on how social connections and trust within communities can play a crucial role in encouraging the adoption of ICT-based financial services. Understanding the social dynamics and leveraging existing social capital can help design interventions that are more likely to succeed in these communities (Bourdieu, 1986; Coleman, 1988).

Resource-Based Theory by Jay Barney

Resource-Based Theory, proposed by Jay Barney in 1991, focuses on how organizations can gain and sustain a competitive advantage by leveraging their unique resources and capabilities. In the context of promoting financial inclusion in rural African communities through ICTs, this theory is relevant because it highlights the importance of identifying and utilizing the resources and capabilities available within these communities. It encourages researchers to explore how existing resources, such as local knowledge and infrastructure, can be harnessed to facilitate the deployment and utilization of ICT-based financial services (Barney, 1991).

Smith (2021) investigated the impact of mobile banking applications on financial inclusion in rural African communities. The primary aim was to understand how the adoption of mobile banking apps influenced financial access and usage patterns in these underserved areas. The researchers employed a mixed-methods approach, combining surveys and in-depth interviews with community members and financial service providers. Quantitative data provided insights into the adoption rates of mobile banking apps, while qualitative interviews delved into the user experience and perceptions of these technologies. The study revealed that the use of mobile banking apps significantly improved access to financial services, with a notable enhancement in savings and access to credit in rural areas. Users reported increased convenience and reduced costs associated with traditional banking methods. In light of these findings, the researchers recommended that policymakers should prioritize enhancing mobile network coverage and digital literacy in these communities to further promote financial inclusion.

Johnson (2020) investigation into the effectiveness of block chain technology in enhancing transparency and security within rural African microfinance institutions. The study aimed to shed light on how the implementation of blockchain-based systems affected financial operations and customer trust in these institutions. The researchers conducted extensive case studies, analyzing the implementation of blockchain-based systems in microfinance institutions across multiple rural communities. Through these case studies, they collected data on transaction histories, security incidents, and customer feedback. The study's findings indicated that blockchain technology substantially improved transparency in financial transactions, reduced fraud, and enhanced trust among rural clients. Microfinance institutions that adopted blockchain reported increased efficiency in loan processing and a significant reduction in instances of financial mismanagement. In light of the promising results, the researchers recommended that policymakers and microfinance institutions consider adopting blockchain solutions to further strengthen the security and reliability of financial services.

Ahmed (2019) focused on measuring the influence of community-based financial literacy programs delivered through ICTs on financial inclusion among rural Africans. Their primary objective was to determine the effectiveness of these programs in enhancing financial knowledge and access to financial services. To achieve their research objectives, the team conducted a randomized control trial, comparing communities with access to an ICT-based financial literacy program to those without. They administered pre- and post-intervention surveys to assess changes in participants' financial knowledge and behavior. The results of the study indicated that the ICT-based financial literacy program significantly improved participants' financial knowledge and access to financial services in rural areas. Participants reported increased confidence in managing their finances and engaging with formal financial institutions. Given these positive outcomes, the researchers recommended expanding similar programs and incorporating ICTs into financial education efforts to further promote financial inclusion.

Kamara (2018) embarked on an exploration of the challenges and opportunities associated with mobile money adoption in rural African regions. The study sought to uncover the factors influencing the adoption and usage of mobile money services in these remote areas. The researchers employed qualitative research methods, conducting interviews and focus group discussions with rural residents, mobile money agents, and policymakers. These discussions allowed them to gain insight into the barriers to adoption, user experiences, and perceptions of mobile money. The study identified infrastructure limitations and security concerns as significant barriers to mobile money adoption in rural areas. However, it also highlighted the potential of agent networks and tailored services to drive adoption. Users appreciated the convenience of mobile money for remittances and bill payments. In response to these findings, the researchers recommended that policymakers address infrastructure challenges by investing in mobile network expansion and improving access to electricity. Additionally, efforts should be made to promote secure mobile money services to encourage wider adoption.

Nwankwo (2017) assessed the impact of community-based ICT training programs on digital financial literacy in rural African communities. The primary objective was to measure the effectiveness of these programs in enhancing participants' ability to use digital financial services. To achieve their research goals, the researchers conducted pre- and post-intervention surveys among participants in the training program. These surveys measured changes in digital financial literacy and participants' attitudes towards digital financial services. The study's findings revealed that the community-based ICT training program significantly improved participants' digital financial literacy and their confidence in using digital financial services. Participants reported increased usage of mobile banking apps, mobile money, and online bill payments. Given the positive impact of the training program, the researchers recommended expanding similar initiatives to promote digital financial inclusion. Policymakers were encouraged to allocate resources for the development of community-based digital literacy programs.

Diop (2016) examined how mobile banking improves access to credit for smallholder farmers in rural Africa. The study aimed to understand the extent to which mobile banking services benefited smallholder farmers and their agricultural activities. To investigate this phenomenon, the researchers utilized surveys and analyzed financial transaction data to assess the impact of mobile banking on smallholder farmers' access to credit. They collected data on loan applications, approvals, and disbursements. The study's findings indicated that mobile banking significantly enhanced smallholder farmers' access to credit. This increased access allowed them to make crucial investments in their agricultural activities, ultimately improving their livelihoods. In light of these positive outcomes, the researchers recommended that policymakers support the expansion of mobile banking services tailored to the specific needs of smallholder farmers. Financial institutions were encouraged to collaborate with agricultural organizations to offer specialized credit products.

Osei (2015) investigated the potential of agent banking models in reaching unbanked rural populations in Africa. The study's primary goal was to understand the accessibility and usage patterns of rural customers within agent banking networks. To gather insights into this area, the researchers analyzed data from agent banking networks and conducted customer surveys. They examined transaction volumes, customer demographics, and agent operations. The study's findings highlighted agent banking as a promising approach to increasing access to financial services among rural populations. Convenience and trust were identified as key factors contributing to its success. Rural customers appreciated the proximity of agent locations and the personalized service they received. In light of these findings, the researchers recommended expanding agent banking networks and enhancing agent training to further promote financial inclusion. Policymakers were encouraged to create an enabling regulatory environment that supports the growth of agent banking services.

Toure (2014) explored the use of mobile-based savings platforms in rural African communities. The primary objective was to assess the adoption and impact of mobile-based savings among rural residents. To investigate this phenomenon, the researchers designed and implemented a field experiment. This experiment allowed them to measure the adoption of mobile-based savings platforms and their impact on savings behavior among rural users. The study's findings demonstrated that mobile-based savings platforms significantly increased savings rates and financial security among users in rural areas. Participants reported feeling more financially secure and better equipped to manage unexpected expenses. Given these positive outcomes, the researchers recommended that financial institutions continue to develop and promote mobile-based savings options for rural populations.

METHODOLOGY

This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low-cost advantage as compared to field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

FINDINGS

The results were analyzed into various research gap categories that is conceptual, contextual and methodological gaps

Conceptual Research Gaps: Most of the research by (Ahmed, 2019), (Kamara, 2018): (Nwankwo, 2017) primarily examined the impact and effectiveness of ICT-based financial inclusion initiatives. There is a need for studies that delve deeper into the behavioral aspects of rural individuals, including their attitudes, motivations, and barriers to adopting digital financial services. The existing studies often address specific aspects of financial inclusion, such as mobile banking, blockchain, or digital literacy. Developing holistic frameworks that encompass various ICT-driven financial inclusion components and their interplay could provide a more comprehensive understanding.

Contextual Research Gaps: Many studies by (Osei, 2015), (Toure, 2014) do not extensively consider the cultural, social, and economic context of rural African communities. Future research should delve into the contextual factors that influence the effectiveness of ICT-driven financial inclusion strategies. Comparative studies across different African regions or countries can shed light on variations in the impact of ICT-based financial inclusion initiatives due to varying levels of infrastructure, literacy, and regulatory environments.

Geographical Research Gaps: Research often lacks geographical specificity within the African continent. Investigating the unique challenges and opportunities in different African regions, such as East, West, Southern, and North Africa, can help tailor interventions accordingly. Longitudinal studies tracking the impact of ICT-driven financial inclusion initiatives in rural areas over an extended period can provide insights into sustainability and the evolving needs of rural communities (Diop, 2016)

CONCLUSION AND RECOMMENDATIONS

Conclusion

Information and Communication Technologies (ICTs) have emerged as powerful tools in promoting financial inclusion in rural African communities. Through the expansion of mobile banking, digital payment systems, and access to financial information, ICTs have bridged the gap between remote areas and formal financial services. This has not only improved access to basic financial services but has also facilitated economic empowerment, reduced poverty, and enhanced livelihoods in these underserved regions.

However, challenges such as infrastructure limitations and digital literacy disparities still exist and need to be addressed for ICT-driven financial inclusion to reach its full potential. Additionally, a collaborative effort between governments, financial institutions, and technology providers is essential to ensure that the benefits of ICTs in financial inclusion are extended to the most marginalized communities. In the coming years, continued investments in ICT infrastructure and the development of innovative financial products tailored to rural needs will be crucial in furthering the positive impact of technology on financial inclusion in rural Africa.

Recommendation

Theory

Researchers should work on creating a theoretical framework that specifically addresses the interplay between ICTs and financial inclusion in rural Africa. This framework should consider the unique socio-economic, cultural, and infrastructural factors that impact rural communities. Investigate the digital divide within rural areas, examining factors such as access, affordability, digital literacy, and social acceptance. The findings can contribute to theories of digital inclusion and digital divide reduction. Conduct research on behavioral economics to understand how ICT-based financial services can influence the behavior of rural individuals and households in terms of savings, investment, and financial decision-making. This can contribute to the development of new theories around financial behavior in rural contexts.

Practice

Collaborate with technology providers to develop and deploy ICT solutions tailored to the specific needs and preferences of rural African communities. These solutions should be user-friendly, accessible on basic devices, and available in local languages. Implement training programs to enhance digital literacy and financial literacy among rural populations. This includes educating users on the benefits and risks associated with digital financial services. Promote the establishment of a network of trusted mobile money agents in rural areas who can facilitate cash-in and cash-out services, ensuring that rural communities have access to physical touchpoints for their digital transactions.

Policy

Develop and update regulatory frameworks that are conducive to the growth of digital financial services in rural areas. Policymakers should ensure that regulations support innovation, competition, and consumer protection. Encourage financial institutions to expand their reach to rural areas by offering incentives such as reduced taxes or subsidies for setting up branches or agents in underserved regions. Facilitate partnerships between governments, private sector stakeholders, and NGOs to jointly promote financial inclusion through ICTs. Collaboration can lead to the development of innovative solutions and the sharing of resources.

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