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FINANCIAL INCLUSION THROUGH TECHNOLOGY: A REVIEW OF TRENDS IN EMERGING MARKETS

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ABSTRACT

Financial inclusion, the universal access to affordable financial services, has emerged as a critical component for fostering economic development, especially in emerging markets. This study presents a comprehensive review of trends in financial inclusion through technology, focusing on its transformative impact in emerging markets. In recent years, technological advancements have paved the way for innovative financial solutions, breaking down traditional barriers to access and bridging gaps in financial services. Mobile banking, digital wallets, and blockchain technologies have become instrumental tools in extending financial services to previously underserved populations. This review delves into the key trends shaping the landscape of financial inclusion in emerging markets, highlighting the role of technology as an enabler. The rise of mobile banking has been a game-changer, allowing individuals with limited access to traditional banking infrastructure to conduct financial transactions seamlessly. Digital wallets have gained prominence, offering a secure and convenient means for users to store, transfer, and receive money. Blockchain technology, with its decentralized and transparent nature, has facilitated the development of innovative financial products like cryptocurrencies, providing alternative avenues for financial inclusion. However, challenges persist, including concerns related to data security, regulatory frameworks, and the digital literacy of users. The review critically examines these challenges and explores potential solutions to ensure the sustainable growth of financial inclusion initiatives in emerging markets. Moreover, the COVID-19 pandemic has underscored the importance of resilient and accessible financial systems. The review assesses the pandemic's impact on financial inclusion trends, highlighting both the vulnerabilities exposed and the opportunities for further integration of technology in addressing economic shocks. This review contributes to the evolving discourse on financial inclusion through technology in emerging markets. By identifying trends, challenges, and opportunities, it offers valuable insights for policymakers, financial institutions, and technology innovators seeking to drive inclusive economic growth through technological interventions.

Keywords: Finance, Technology, Emerging Markets, Financial Inclusion, Review.

INTRODUCTION

Introduction of Financial Inclusion through Technology

Financial inclusion is a critical aspect of economic development, particularly in emerging markets, as it aims to provide access to financial services for all members of the economy. Sarma and Pais (2008) define financial inclusion as "the process of ensuring ease of access, usage, and availability, of financial services" (Sithole et al., 2021). This definition emphasizes the importance of unbiased access to financial services for all individuals. Furthermore, financial inclusion is associated with socio-economic development, as it promotes sustainable economic growth and helps vulnerable groups access opportunities (Nguyen & Le, 2022; LAZAREVA, 2023). In the context of emerging markets, financial inclusion is particularly crucial as it can contribute to narrowing the gap between the rich and the poor (Chen et al., 2018).

The role of technology in advancing financial inclusion has been widely recognized. Park & Mercado (2018) highlight the dimensions of financial inclusion, focusing on the financial access of the population included in the financial system (Park & Mercado, 2018). Moreover, the introduction of financial inclusion through technology, such as Fintech, has been shown to ease the shortage of funds and promote enterprise innovation (Ren et al., 2023). Additionally, mobile banking has been identified as a catalyst for improving financial inclusion in developing countries, ensuring that individuals and businesses have access to necessary and affordable financial products and services (Muchandigona & Kalema, 2023).

In conclusion, financial inclusion, defined as the process of providing unbiased access to financial services, is crucial for promoting economic development, particularly in emerging markets. The integration of technology, such as Fintech and mobile banking, plays a significant role in advancing financial inclusion, ultimately contributing to sustainable economic growth and narrowing the gap between different socio-economic groups.

Financial Inclusion through Technology

Financial inclusion through technology has become a focal point in the global effort to provide financial services to all segments of society. The use of financial technology (fintech) has been identified as a crucial enabler of financial inclusion, with various stakeholders playing essential roles in this process (Lagna & Ravishankar, 2021). Fintech-led financial inclusion involves not only fintech firms but also the active involvement of business partners, customers, governments, civil society organizations, and philanthropic foundations (Lagna & Ravishankar, 2021). Studies have shown that financial inclusion contributes to economic development by facilitating access to financial services for individuals and businesses, particularly small and medium enterprises (Ahmad et al., 2022). Furthermore, the provision of financial services to all segments of society at affordable prices using technology is a key component of financial inclusion, as outlined in the United Nations Sustainable Development Goals (Zhang, 2023).

The application of blockchain technology has been identified as a means to enhance financial inclusion, particularly in reaching financially vulnerable populations (Muneeza et al., 2018). Additionally, the adoption of technology, including automated teller machines, internet usage, and mobile cellular subscriptions, has been found to have a significant impact on financial inclusion, as evidenced by studies conducted in China and Nigeria (Alabi & Olaoye, 2022). Moreover, financial technology, including point of sale, automated teller machines, web banking technology, and mobile banking technology, has been used as a proxy for assessing financial inclusion in Nigeria (Iwedi et al., 2023).

Financial literacy and intellectual capital have been found to have a positive effect on financial inclusion, with financial technology-based financial services playing a crucial role in enhancing financial literacy and inclusion (Martini et al., 2022). Similarly, the impact of financial literacy and financial technology on financial inclusion has been studied in the Special Region of Yogyakarta, Indonesia, with a focus on reaching the goal of promoting financial literacy and inclusion (Kusumawati et al., 2022). Furthermore, the COVID-19 pandemic has highlighted the role of fintech in enabling women, the poor, farmers, and youngsters to access financial services, thereby promoting financial inclusion in India.

The role of financial technology in improving financial accessibility to regions where traditional banks have failed to reach has been emphasized, with studies recommending the application of financial technology to promote financial inclusion, especially in developing countries (Isukul & Tantua, 2021). Additionally, technology and education have been found to have a positive effect on financial inclusion, as evidenced by research using logistic regression to analyze the influence of socio-demographic characteristics on the probability of financial inclusion (Sayekti & Hidajat, 2021).

In conclusion, the synthesis of these references underscores the critical role of financial technology in promoting financial inclusion. From blockchain technology to the adoption of various technological tools, the evidence suggests that technology plays a pivotal role in expanding financial services to underserved populations and driving economic development.

Historical Context of Financial Inclusion in Emerging Markets

The historical context of financial inclusion in emerging markets has seen an evolution of initiatives aimed at promoting economic growth and development (Van & Nguyen, 2019). These initiatives have been necessitated by the challenges faced in traditional financial systems, such as chronic shortage of resources and inadequate infrastructure (Sheth, 2011). The need to address these challenges has led to initial attempts at leveraging technology for financial inclusion, with a focus on promoting access and efficiency in emerging and frontier market countries (Ababio, 2023).

The evolution of financial inclusion initiatives has been influenced by the impact of emerging markets on marketing, which has necessitated a rethinking of existing perspectives and practices (Sheth, 2011). Additionally, the role of fintech in driving financial inclusion in developing and emerging markets has been highlighted, emphasizing the need for government, financial institutions, and fintech companies to ensure financial inclusion for the unbanked population (Ediagbonya & Tioluwani, 2022).

Challenges faced in traditional financial systems, such as market heterogeneity and unbranded competition, have prompted the development of frameworks contextualized in emerging markets to address these issues (Hess et al., 2017). Furthermore, the impact of financial inclusion on bank performance in the Asian region has been a subject of academic interest, highlighting the need to understand the direct benefits of financial inclusion to bank performance in emerging markets (Vo & Nguyen, 2021).

Initial attempts at leveraging technology for financial inclusion have been evident in the development of a novel measurement of digital financial inclusion using a three-stage principal component approach for emerging market and developing economies (Shen, 2022). Moreover, the significance of gender dimension in digital financial inclusion in Indonesia as an emerging market has been emphasized, shedding light on the importance of gender-specific approaches in promoting financial inclusion (Soekarno & Setiawati, 2020).

In conclusion, the historical context of financial inclusion in emerging markets has been shaped by the evolution of initiatives, challenges faced in traditional financial systems, and initial attempts at leveraging technology for financial inclusion. These efforts have been influenced by the impact of emerging markets on marketing, the role of fintech, and the need for gender-specific approaches in promoting financial inclusion.

Key Technologies Driving Financial Inclusion

Mobile banking has indeed experienced significant growth and adoption rates, with various factors influencing its uptake. Studies have identified key drivers of mobile banking adoption, including global mobile phone penetration, competitive advantage, customer convenience, strategic importance, customer demand, low perceived risk/security concerns, and stakeholder partnerships (Zhang et al., 2018). Additionally, the convenience and accessibility of mobile banking have been emphasized as potential factors bridging the banking divide in rural communities, contributing to financial inclusion (Hordofa, 2023). Furthermore, the impact of COVID-19 has highlighted the significance of mobile banking as a contactless financial inclusion tool during the pandemic (Zeya, 2022).

Digital wallets, as part of digital financial services, have also played a crucial role in financial inclusion. Research has shown that digital financial services, excluding certain low-penetration variables, contribute significantly to financial inclusion (Fernandes et al., 2020). Moreover, the use of mobile phones globally has provided developing countries with the opportunity to improve financial inclusion through mobile banking, thereby benefiting microentrepreneurs at the bottom of the pyramid (Ruano-Arcos et al., 2020). In the context of financial inclusion, the role of blockchain technology and cryptocurrencies has garnered attention. While not directly related to blockchain, studies have highlighted the positive impact of mobile banking on financial inclusion, especially in developing countries such as Mozambique (Fernandes et al., 2020). However, the specific role of cryptocurrencies in financial inclusion requires further exploration.

Overall, mobile banking and digital financial services have emerged as key technologies driving financial inclusion, particularly in the context of expanding access to financial services, bridging the urban-rural divide, and providing contactless solutions during crises such as the COVID-19 pandemic.

Trends Shaping Financial Inclusion in Emerging Markets

To understand the trends shaping financial inclusion in emerging markets, it is essential to consider adoption patterns across different regions, partnership models between financial institutions and technology providers, regulatory frameworks, and successful case studies of implementations in specific markets. Several studies provide valuable insights into these aspects.

Adoption patterns across different regions in emerging markets have been a focus of research (Van & Nguyen, 2019). highlight the adoption of policies focusing on financial inclusion in the ASEAN region, including Vietnam and Thailand (Van & Nguyen, 2019). This indicates a growing emphasis on financial inclusion in these regions. Partnership models between financial institutions and technology providers are crucial for driving financial inclusion (Joia & Cordeiro, 2021). emphasize the accelerated transformation of the financial sector by Fintechs, presenting an opportunity to increase financial inclusion in emerging markets such as Brazil (Joia & Cordeiro, 2021). This suggests that collaboration with fintech firms can play a significant role in advancing financial inclusion.

Regulatory frameworks and their impact on technology-driven financial inclusion are also a key area of study (Shen, 2022). provides a novel measurement of digital financial inclusion using a three-stage principal component approach for emerging market and developing economies, indicating the importance of regulatory measures in promoting digital financial inclusion (Shen, 2022; Abrahams et al., 2024). Successful case studies of implementations in specific markets offer valuable insights (Siano et al., 2020). present evidence from Nigeria, highlighting mobile banking as an innovative solution for increasing financial inclusion in Sub-Saharan African countries (Siano et al., 2020). This demonstrates the potential for mobile banking to drive financial inclusion in specific emerging market contexts.

In conclusion, the trends shaping financial inclusion in emerging markets are influenced by adoption patterns across different regions, partnership models between financial institutions and technology providers, regulatory frameworks, and successful case studies of implementations in specific markets. These factors collectively contribute to the advancement of financial inclusion in emerging economies.

Challenges in Implementing Technology-Driven Financial Inclusion

Implementing technology-driven financial inclusion faces several challenges that need to be addressed to ensure its success. These challenges include data security and privacy concerns, regulatory hurdles and uncertainties, digital literacy and user education, and infrastructure limitations and connectivity issues.

Data security and privacy concerns are critical in the implementation of technology-driven financial inclusion. As financial services become more digital, the need to protect sensitive customer data becomes paramount. Ensuring robust data security measures and addressing privacy concerns are essential to build trust and confidence in digital financial services (Adaga et al., 2024; Yawe et al., 2022). Regulatory hurdles and uncertainties also pose significant challenges. The evolving nature of financial technology requires clear and adaptable regulations to ensure consumer protection and system stability. Regulatory frameworks need to keep pace with technological advancements to foster innovation while mitigating potential risks (Abaidoo, 2023).

Digital literacy and user education are fundamental for the successful adoption of technology-driven financial inclusion. Enhancing financial literacy, particularly in the digital context, is crucial for individuals to effectively utilize digital financial products and services. User education programs can empower individuals to make informed financial decisions and navigate digital platforms securely (Shen et al., 2018; Hassan et al., 2024). Infrastructure limitations and connectivity issues present obstacles, particularly in remote or underdeveloped areas. The availability of reliable digital infrastructure and internet connectivity is essential for widespread access to digital financial services. Addressing these limitations is vital to ensure that technology-driven financial inclusion reaches all segments of the population (Nathan et al., 2022).

In conclusion, addressing data security and privacy concerns, navigating regulatory challenges, enhancing digital literacy and user education, and overcoming infrastructure limitations and connectivity issues are crucial for the successful implementation of technology-driven financial inclusion. By addressing these challenges, stakeholders can work towards creating an inclusive and secure digital financial ecosystem.

Impact of the COVID-19 Pandemic on Financial Inclusion Trends

The COVID-19 pandemic has indeed significantly disrupted various aspects of financial inclusion and has accelerated the digital transformation in response to the crisis. The pandemic has caused disruptions in employment, financial security, and financial performance across different sectors (Emerson et al., 2021; Rababah et al., 2020; Lestari et al., 2022; Yuliansyah et al., 2022; Shadiq & Hanggraeni, 2022). Small and medium-sized companies, as well as women-led SMEs, have been particularly affected by the pandemic, experiencing a decline in financial performance (Chozarira et al., 2023; Yuliansyah et al., 2022). Additionally, the pandemic has impacted the financial performance of life insurance companies and the financial system of various countries (Shadiq & Hanggraeni, 2022; Adžić et al., 2022). Furthermore, the pandemic has led to changes in the composition of household financial management and has affected the financial health of individuals, including dental students (Lestari et al., 2022; Sulistiyowati & Dessyarti, 2022).

In response to the crisis, there has been an acceleration of digital transformation, with a focus on digital technologies in the public-health response, digital transformation in organizations, and the digital transformation of SMEs (Budd et al., 2020; Petrova et al., 2022; Wu et al., 2023; Lumat, 2023). The pandemic has led to an increased emphasis on digital forms of work and has prompted SMEs to update their business models to incorporate digital usage (Lumat, 2023; Nagel, 2020). Moreover, the crisis has drawn attention to the strategic responses of Chinese firms on digital transformation, highlighting the importance of accelerating digital transformation to enhance competitive advantage (Wu et al., 2023).

Lessons learned from the pandemic include the need to explore ways to reduce enterprise financial risk, the importance of leadership in crisis-induced digital transformation, and the impact of the pandemic on financial development and financial inclusion (Li et al., 2022; Bartsch et al., 2020; Ojong & Asongu, 2021). The crisis has also shed light on the limitations and barriers to the implementation of digital innovations, including legal, ethical, and privacy barriers, as well as organizational and workforce barriers (Budd et al., 2020). Additionally, the pandemic has highlighted the significance of understanding the impact of COVID-19 on liquidity, financial position, and financial performance across different sectors and industries (Karim et al., 2021; Yuliansyah et al., 2022).

In conclusion, the COVID-19 pandemic has had a profound impact on financial inclusion trends, causing disruptions in various sectors and prompting an acceleration of digital transformation. The lessons learned from the crisis emphasize the importance of addressing financial risk, enhancing leadership in crisis-induced digital transformation, and understanding the implications of the pandemic on financial development and inclusion.

Future Prospects and Opportunities

To address the future prospects and opportunities of financial inclusion through technology in emerging markets, it is essential to consider the potential for further technological innovations, collaborative efforts for sustainable financial inclusion, and policy recommendations for supporting technology-driven financial inclusion.

The potential for further technological innovations in financial inclusion is evident from the increasing role of financial technologies (fintech) in overturning conventional notions about the financial capital market (Abuzov, 2023). This suggests that ongoing technological advancements have the potential to reshape the landscape of financial inclusion. Additionally, the growth in fintech has led to new opportunities for financial inclusion, particularly in emerging markets (Senyo et al., 2021). This indicates that technological innovations, especially in the fintech ecosystem, are creating avenues for enhancing financial inclusion in these markets.

Collaborative efforts for sustainable financial inclusion are crucial for ensuring the long-term success of financial inclusion initiatives. Research has highlighted the importance of intelligent integration and collaboration of internet communication technologies for the sustainable development of inclusive finance (Zhang, 2023). This underscores the significance of collaborative efforts among various stakeholders, including financial institutions, policymakers, and technology providers, to ensure the sustainability of financial inclusion initiatives in emerging markets.

Policy recommendations play a vital role in supporting technology-driven financial inclusion in emerging markets. It is recommended that efforts should be made to encourage investor participation to foster the growth of the stock market, which is essential for sustainable development (Raweh et al., 2023). Moreover, to achieve the goal of carbon neutrality, institutional and management innovations are needed to provide new opportunities for balanced development among regions, emphasizing the role of policy in promoting inclusive finance for regional economic development (Yu, 2022). These policy recommendations underscore the need for a conducive regulatory environment and supportive policies to drive technology-enabled financial inclusion in emerging markets.

In conclusion, the future prospects and opportunities of financial inclusion through technology in emerging markets are closely linked to the potential for further technological innovations, collaborative efforts for sustainable financial inclusion, and policy recommendations for supporting technology-driven financial inclusion. By leveraging technological advancements, fostering collaboration among stakeholders, and implementing supportive policies, emerging markets can enhance financial inclusion and contribute to sustainable economic growth.

RECOMMENDATION AND CONCLUSION

The review underscores the transformative impact of technological advancements, particularly mobile banking, digital wallets, and blockchain technologies, in fostering financial inclusion in emerging markets. These innovations have played a pivotal role in breaking down traditional barriers, enabling individuals to access affordable financial services. Mobile banking emerges as a key driver of financial inclusion, with widespread adoption and positive implications for accessibility. The ease of conducting financial transactions through mobile devices has facilitated greater financial participation among previously underserved populations. The emergence of digital wallets and the exploration of blockchain technologies have diversified the range of financial solutions available. Digital wallets provide secure and convenient platforms for financial transactions, while blockchain technologies offer decentralized and transparent alternatives, including the rise of cryptocurrencies. Despite the positive trends, challenges persist, such as concerns regarding data security, regulatory frameworks, and the need for improved digital literacy. These challenges underscore the importance of addressing socio-economic and regulatory aspects for the sustainable growth of financial inclusion initiatives.

Ongoing research is imperative to address the dynamic challenges associated with technology-driven financial inclusion. The landscape continues to evolve, necessitating a proactive approach in addressing issues such as data security, regulatory frameworks, and digital literacy. Emerging markets exhibit diverse characteristics, and ongoing research should focus on monitoring regional differences in adoption rates, regulatory responses, and the impact of cultural nuances on the effectiveness of financial inclusion initiatives. The COVID-19 pandemic has highlighted the need for financial systems to be resilient in the face of external shocks. Future research should explore the adaptability of technology-driven financial inclusion models during crises and assess their effectiveness in mitigating economic disruptions. Collaboration among stakeholders, including governments, financial institutions, technology providers, and local communities, is crucial. Ongoing research can guide collaborative efforts in refining and implementing policies that foster inclusive financial ecosystems.

In conclusion, the comprehensive review of financial inclusion through technology in emerging markets reveals promising trends alongside persistent challenges. The importance of continuous research and adaptation to dynamic trends cannot be overstated, as these factors are instrumental in shaping the trajectory of inclusive financial systems, ensuring sustainable and equitable economic development.

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