East African Scholars Journal of Economics, Business and Management
Abbreviated Key Title: East African Scholars J Econ Bus Manag
ISSN 2617-4464 (Print) | ISSN 2617-7269 (Online)
Published By East African Scholars Publisher, Kenya
Volume-7 | Issue-6 | Jun-2024 | DOI: 10.36349/easjebm.2024.v07i06.003

OPEN ACCESS

Original Research Article

Financial Technology and Financial Inclusion in the Banking industry in Kenya

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Article History
Received: 29.04.2024
Accepted: 08.06.2024
Published: 20.06.2024

Journal homepage:
https://www.easpublisher.com

Quick Response Code

Abstract: Financial technology (Fintech) marked by technological developments in financial services, has become a significant player in the world of finance. It has the potential to increase financial services' availability and affordability, particularly for marginalized people. The main purpose of this study was to establish the effect of Fintech on financial inclusion in the banking sector in Kenya. The proposed objectives are: to determine the effect of mobile money on financial inclusion in the banking sector in Kenya and to evaluate the role of mobile banking on financial inclusion in the banking sector in Kenya. This study was grounded in financial intermediation theory and information asymmetry and adverse selection theory. This study employed desktop research methodology. This study adds to the debate on how technology and finance intersect, opening the door for additional investigation of creative solutions for financial inclusion while promoting the attainment of sustainable development goals and sustainable development. This study established that mobile money greatly improves financial inclusion by reducing gaps for disadvantaged groups and boosting accessibility, especially in rural areas with limited traditional banking infrastructure. This study also found that mobile money services greatly improve financial inclusion in Kenya's banking sector, particularly in rural areas, by democratizing access to financial services and closing gaps for underserved populations. Furthermore, by improving accessibility, security, and efficiency, mobile banking significantly advances financial inclusion. The study recommends that regulators, financial institutions, and mobile money service providers in Kenya should work together to promote innovation and competition in the mobile banking sector.

Keywords: Financial technology, mobile money, mobile banking, financial inclusion.

Introduction and Background of the Study

Financial inclusion, according to Wandeda *et al.*, (2023), refers to the ease of access and effective use of official financial services such as banking, credit, insurance, and payment services. It plays a crucial role in promoting economic progress that benefits everyone and reduces poverty. It ensures that all segments of society, especially those who have been historically disadvantaged, may use important financial tools. The concept originated from the realization that a significant proportion of the world's population does not have access to basic financial services, which hampers their capacity to invest, save, or protect themselves from economic shocks (World Bank, 2018a). Demirgüç-Kunt *et al.*, (2018) highlight the need of inclusive economic development, which requires a diverse range of financial services to promote societal welfare and prosperity. Financial inclusion is a complex concept that encompasses various aspects, including the involvement of financial institutions in markets, the availability of services, and their consumption by customers (Omar & Inaba, 2020; Ratnawati, 2020). This comprehensive approach emphasizes the importance of financial inclusion as a driver for decreasing economic inequalities and promoting sustainable development.

Makina (2019) argues that there is are connections between financial technology (Fintech) and financial services. Smith and Johnson (2018) describe Fintech as the innovative application of technology in

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financial services, transforming the delivery, access, and utilization of financial products. Mamonov (2020) notes that Fintech encompasses technology-enabled innovations that lead to new business models, applications, processes, or products, thereby improving the accessibility and efficiency of financial services. This innovation significantly impacts financial inclusion by expanding access, reducing costs, and providing customized solutions, particularly for disadvantaged populations (Demirgüç-Kunt *et al.,* 2018). Fintech innovations like mobile banking and digital payment platforms make financial services more accessible, affordable, and secure, especially in remote areas (GSMA, 2021). These technologies can sometimes replace traditional banking, shifting away from conventional bank branches and further influencing financial inclusion (Kumar & Varghes, 2021).

By combining financial services with its cutting-edge technologies, Fintech may increase public access to and utility of these services. This trend is backed up by Ali *et al.,* (2019) who demonstrated that Fintech has a significant potential influence on both conventional and Islamic finance. Ali *et al.,* (2019) add that Fintech offers similar but more innovative financial services than those offered by traditional banking and finance companies, but at lower fee costs and larger profits. Moreover, Dong (2021) argues that the goal of Fintech is to help big businesses, startups, and regular people better manage their finances. This is achieved by streamlining, automating and enhancing products and services. Fintech enables greater access to financial services, especially for underserved populations in both developed and developing economies. For example, mobile banking and digital payment systems have promoted financial inclusion by providing affordable and convenient banking solutions to entities who previously did not use banks or who have too few banks. It accomplishes this by utilizing specialized software and algorithms run on computers and cellphones (Estrela *et al.,* 2021) that is primarily done through mobile applications also referred to as applications. Fintech's early efforts were mostly directed at transforming the operational features of financial institutions, with the main objective of utilizing technological improvements to automate and streamline back-end activities.

According to Gomber *et al.,* (2017), the strategic focus offered by Fintech increased operational effectiveness while at the same time lowering costs. The initial focus on automating back-end processes within financial institutions helped to shape the field's subsequent trajectory, strengthen operational efficiency, and lay the groundwork for transformative innovations in financial development. The development of mobile technology and the mass availability of smartphones ushered in a new era of financial inclusion and changed the economic outlook for people living in underserved areas. A turning point in Fintech contribution to financial development occurred with the advent of mobile banking services, which is shown by the popularity of M-Pesa in Kenya (Jack & Suri, 2014). Individuals who were previously shut out of regular banking systems were now able to obtain essential financial services because to this novel technique. With the ability to make transactions, save money, and get credit all through mobile devices, M-Pesa's concept showcased the potential of mobile-based platforms to serve as a gateway to financial inclusion. Jack and Suri (2014) emphasize how this mobile banking service transformed economic options for people in areas with restricted access to conventional financial institutions and offers solid empirical evidence of M-Pesa's revolutionary influence. This crucial change demonstrated the crucial role of mobile technology in promoting financial inclusion and underlined the potential of Fintech to reduce economic inequalities and empower underprivileged groups.

With the advent of Fintech, a new paradigm for financial transactions was made possible. Increased security, transparency, and a decreased reliance on middle men were all benefits of decentralized ledger system (Narayanan *et al.,* 2016). Traditional financial systems were tested by this development, which forced them to change to fit the rapidly changing Fintech scene. Beyond just transactions, Fintech has a wide range of possible uses that might change contract administration and automate numerous financial procedures. As a result, Zohar (2015) notes that regulatory organizations struggle to find a balance between supporting innovation and defending consumer interests as Fintech continued to upend traditional financial institutions.

Governments, international organizations, and financial institutions have stepped up their efforts to promote financial inclusion globally in recent years. In order to achieve more general social and economic goals like ending poverty, decreasing inequality, and promoting economic growth, the Sustainable Development Goals (SDGs) of the United Nations have expressly acknowledged the significance of financial inclusion (Kara *et al.,* 2021). A growing understanding of the importance of financial inclusion in achieving sustainable and inclusive economic development has led to the launch of initiatives to increase access to financial services, advance digital payment systems, and improve financial literacy and education programs (World Bank, 2018a). Fintech has served as an enabler to financial inclusion and is quickly spreading across the globe. Regulatory changes have also facilitated partnerships between traditional financial institutions and startups, which foster collaboration and industry growth (Lambert, 2019). It is possible to reduce operating costs and improve efficiency for both financial service providers and consumers. Automated processes, data-driven decision-making, and operational improvement can lead to cost savings, enabling companies to offer competitive prices and attractive services (Demirgüç-Kunt *et al.,* 2018). It also challenged traditional financial

intermediaries by providing value-chain sharing services directly to consumers through agency banking. Peer-to-peer lending platforms, crowdfunding, and digital wallets are examples of services that bypass traditional banking channels (Huang & Zhu, 2019).

Africa has witnessed a substantial surge in the adoption of mobile technology. This may be attributed to the decrease in costs associated with building infrastructure, the availability of affordable mobile devices, and the implementation of business strategies that cater to the needs of lower-income populations, such as the use of prepaid cards (Makina, 2019). Although there was an increase in the use of mobile devices in the 2000s, access to banking services continued to be restricted, thus maintaining financial isolation. The extensive utilization of mobile devices, internet connectivity, and digital payment systems has significantly contributed to the expansion of Fintech, hence enhancing financial inclusivity, operational effectiveness, and availability of services (Brown *et al.*, 2020). Fintech advancements, such as mobile banking, digital payments, peer-to-peer lending, robo-advisors, and blockchain technology, have greatly bolstered financial progress by enhancing inclusivity, efficiency, and accessibility (Smith & Johnson, 2018; Brown *et al.*, 2020). The widespread adoption of smartphones and the internet has increased the ability of organizations to connect with people, especially in areas where there is limited financial infrastructure. This has led to a change in consumer preferences, with more people seeking digital experiences, convenience, and immediate access to financial services (Huang & Zhu, 2019; Price Waterhouse Coopers, 2020).

Mobile banking, the provision of banking services using mobile devices, has greatly improved financial accessibility, especially in areas with inadequate traditional banking infrastructure. M-Pesa in Kenya is a notable illustration of how mobile banking services have revolutionized economic opportunities for marginalized communities by providing them with access to crucial financial services (Suri & Jack, 2016). This technology enables a range of financial transactions, such as checking account balances, transferring money, and paying bills. It overcomes physical obstacles that formerly limited people's ability to access formal financial services (Suri & Jack, 2016; Jack & Suri, 2014). Furthermore, mobile banking improves financial security and stability by offering a secure platform for managing money and allowing real-time monitoring of transactions (Hwang *et al.*, 2021).

White and Green (2018) argue that while innovations promise to promote financial inclusion by reaching previously underserved populations, they also bring new challenges and risks to the stability and regulation of financial systems. This is premised on the role of mobile money, mobile banking, digital payment platforms and peer-to-peer lending in expanding access to financial services, especially in areas with limited physical banking infrastructure (Smith & Johnson, 2018). In addition, Jones *et al.,* (2022) observe that the use of AI and big data analysis has improved credit assessment and risk management, allowing small and medium-sized businesses to obtain better loans. Moreover, the disruption of traditional financial institutions and the emergence of non-bank financial service providers have raised questions about market competition and possible systemic risks (Murinde *et al.*, 2022). Fintech represents a revolutionary phenomenon in the financial sector and offers the opportunity to change financial development worldwide. As we move deeper into this changing landscape, it is important to balance the benefits of promoting sustainable and inclusive economic development and the effective management of associated risks. The purpose of this study therefore is to analyze the relationships between financial development by examining its impact on economic growth, financial stability, financial inclusion and access to finance on financial development.

Problem Statement

Financial inclusion is widely acknowledged as essential in diminishing poverty and promoting financial prosperity on a worldwide scale. The primary objective of the banking industry is to facilitate universal access to financial services, hence fostering individual and corporate development (Smith & Johnson, 2022; Jones, 2019). Easy access to a variety of banking services is necessary, which should be accompanied by reliable infrastructure and regulatory frameworks. Technological advancements such as mobile banking, digital wallets, and peer-to-peer lending have brought about modernization in the field of financial services, making them easily accessible to disadvantaged groups (Gomber *et al.*, 2017). These developments help to close the gaps in financial access, especially in regions with inadequate traditional banking systems, and contribute to economic development.

However, Neaime and Gaysset (2018) established that the financial system in the Middle East and North Africa, although well-established, does not effectively cater to disadvantaged populations. According to the World Bank (2021), the percentage of adults with bank accounts in Sub-Saharan Africa has increased to 49%, which is more than twice the rate observed in 2011. The percentage of account ownership varies greatly, ranging from 6% in South Sudan to 91% in Mauritius. Out of the 36 economies that were examined, more than 50% of adults had accounts in 16 of them. Kenya has the highest percentage, with 79% of persons having accounts. Ahmad (2020) highlights disparities in formal banking accessibility across Africa, revealing that Southern Africa exhibits a 51% rate of account ownership, while Central Africa lags behind at only 11%. Mauritius exhibits the greatest rate, standing at 80%, whereas Guinea, Niger, Congo, and the Central African Republic demonstrate rates below 10% (World

Bank, 2021). The discrepancies are worsened by the high operational costs, emphasizing the necessity of governmental measures to improve financial inclusion (Oyelami *et al.*, 2017).

Developing nations have experienced substantial adoption of mobile phones, but they are falling behind in the development of banking services. Mobile phones, with their ability to transcend geographical limitations and reduce transaction expenses, contribute to the advancement of financial inclusion in areas that face geographical disadvantages (Dwivedi *et al.*, 2022). Kenya is at the forefront of mobile money developments, which are essential for promoting financial inclusion, particularly in rural areas where there is limited availability of banking services. Although mobile telephony has experienced significant growth, traditional banking models face challenges such as insufficient infrastructure, limited financial literacy, and regulatory constraints (Neaime & Gaysset, 2018). According to the Global Findex 2017 study, there were more than 1.7 billion adults worldwide who did not have access to banking services (World Bank, 2018b). It is crucial to promptly address the lack of financial access. The objective of this study is to examine the influence of Fintech on the level of financial inclusion in Kenya's banking industry. The findings will provide valuable information for policymakers, financial institutions, and stakeholders, enabling them to enhance the inclusivity of financial systems, boost economic development, and enhance social well-being.

Purpose of the Study

The purpose of this study is to determine the effect of Fintech on financial inclusion in the banking sector in Kenya.

Research Objectives

1. To determine the effect of mobile money on financial inclusion in the banking sector in Kenya.
2. To evaluate the role of mobile banking on financial inclusion in the banking sector in Kenya.

Significance of the Study

This study's significance goes beyond immediate enhancements in the banking sector and aligns with broader global development objectives. This research directly contributes to SDG 1 No Poverty by examining the impact of Fintech, including mobile money and mobile banking, on financial inclusion in Kenya's banking sector by informing policies on Fintech and financial inclusion. It aims to provide valuable insights into how financial inclusion can alleviate poverty by enhancing individuals' access to financial services. Furthermore, the study supports SDG 8 Decent Work and Economic Growth by enabling individuals to have financial access, which empowers them to participate in entrepreneurial activities and contribute to the economy. This research highlights the essential role of Fintech in promoting equitable economic development, which in turn contributes to the achievement of the interconnected SDGs.

THEORETICAL FRAMEWORK

Financial Intermediation Theory

Financial Intermediation Theory, established by Gurley and Shaw (1960), Leland and Pyle (1977), Diamond and Dybvig (1983), Allen and Santomero (1996), Scholtens and van Wensveen (2000), serves as a fundamental framework for comprehending the role of traditional financial intermediaries in spurring economic development (Bongomin *et al.*, 2021). It posits that entities like banks play a crucial role in efficiently allocating funds in the economy by acting as intermediaries between depositors and borrowers, thus facilitating investment and economic growth. These intermediaries perform vital functions including the transformation of short-term deposits into long-term loans, and provision of liquidity and risk management services. According to Cruzado *et al.*, (2023), this theory operates on assumptions of information asymmetry between borrowers and lenders, which financial intermediaries mitigate through rigorous due diligence and credit rating processes. It also underscores the concept of risk diversification, wherein intermediaries pool funds from various savers and allocate them to different borrowers to reduce individual risks. Additionally, Cruzado *et al.*, argue that this theory acknowledges economies of scale, particularly when financial intermediaries operate on a large scale, enabling them to benefit from cost advantages and operational efficiencies.

Financial intermediation theory has encountered several challenges, despite its fundamental significance. A significant criticism, according to Scholtens and van Wensveen (2000), is that it fails to effectively consider the risk management responsibilities of lenders in banking partnerships. The theory largely emphasizes information asymmetry and the decrease of transaction costs, but it often fails to include the intricacies of managing financial risks, such as interest rate and liquidity hazards. These risks are crucial for maintaining the stability of financial intermediaries. In addition, Scholtens and van Wensveen (2000) contend that contrary to what the idea of disintermediation suggests, the world is actually heading towards re-intermediation. This means that new kinds of financial intermediation are emerging as a result of technical improvements and changing market dynamics. Critics moreover highlight the theory's failure to consider the dynamic characteristics of financial markets, such as the swift advancement of financial innovations propelled by technology. These advances have the potential to greatly change the financial intermediation industry, bringing in new opportunities and difficulties that are not fully covered by traditional theory. Furthermore, the theory's focus on diminishing disparities in knowledge and

expenses related to transactions may fail to examine other essential elements such as regulatory structures, ethical concerns, and the wider economic consequences of financial intermediation.

This study uses this theory to explain the influence of Fintech's on financial inclusion in the banking sector in Kenya. Through digital platforms and other mobile technologies, Fintech enables the provision of alternative and comprehensive financial services, including mobile money, digital payments, mobile banking, and digital lending. This theory furnishes a valuable framework for understanding how Fintech is reshaping financial access and intermediation, with significant implications for both the banking sector and its clientele.

Information Asymmetry and Adverse Selection Theory

The theory of Information Asymmetry and Adverse Selection, first proposed by Akerlof, Spence, and Stiglitz, tackles circumstances where one party in a transaction possesses more or superior information than the other party. This theory is predicated on the idea that parties to a transaction behave rationally to advance their own interests (Akerlof, 1970; Stiglitz, 1982). A crucial idea in this theory is called adverse selection, which happens when asymmetric information causes people to choose hazardous or less desirable options.

However this theory has criticisms. This theory frequently relies on oversimplified premises and assumes flawless reason, which may not necessarily correspond to actual behavior. The idea is also somewhat static and does not take into consideration the dynamic changes in information throughout time. Additionally, it ignores steps taken by market players to reduce information asymmetry (Stiglitz, 1982). The hypothesis has a lot of application to the way Fintech affects financial inclusion. Platforms for Fintech could significantly lessen information asymmetry. These platforms offer more thorough and transparent information on financial products and services by collecting and analyzing data. This empowerment enables consumers to make better informed choices about their financial activities, especially those who are in underserved or unbanked groups.

In this study, this theory explains how Fintech developments, such as mobile money, mobile banking, and digital payments, address the unequal distribution of information within the banking sector in Kenya, using the theories of Information Asymmetry and Adverse Selection. In the empirical literature on the effect of Fintech on financial inclusion, this theory explains the influence of these technologies in diminishing information asymmetry in order to evaluate their efficacy in advancing financial inclusion among excluded populations.

Conceptual Framework

In this study the independent variables in Fintech represented by mobile money, mobile banking and digital payments while the dependent variable is financial inclusion. The relationship between the independent and dependent variables is shown in Figure 1. The effect of Fintech, which includes mobile money, mobile banking, and digital payments, on financial inclusion can be assessed using many measures as categorized by the World Bank (2021). The indicators encompass access/penetration, availability of services, utilization of services, and quality of products. Although the number of depositors with commercial banks per 1000 individuals is frequently used, there are questions about its limited ability to accurately depict complete trends in financial inclusion. Thus, it is necessary to adopt a metric that considers all aspects of financial inclusion, enables comparisons across different countries, and can be simply calculated. The impact of Fintech on enhancing financial inclusion can be more accurately assessed by analyzing indicators such as the number of depositors with commercial banks, the density of bank branches per 100,000 people, the volume of credit and deposits as a proportion of GDP, and the quality of products.

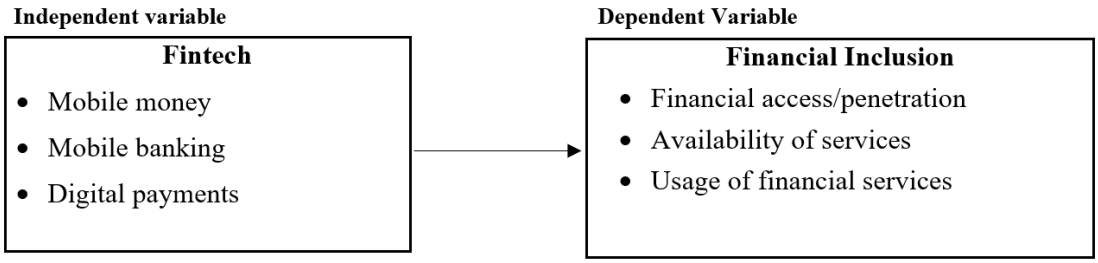

Figure 1: Conceptual Framework
Source: Authors (2024)

METHODOLOGY

This study adopted a desktop research design. Desktop research, according to Portigal (2023) entails the collection and examination of preexisting material from sources such as published papers, publications, studies, and other publicly accessible data. Alhosseiny (2023) argues that this strategy is frequently favored due to its efficiency and cost-effectiveness, as it eliminates

the necessity for laborious and costly procedures such as participant recruitment or survey design. Largan and Morris (2019) adds that this methodology establishes a strong base and framework for research inquiries, providing valuable viewpoints from many angles and enabling a comprehensive comprehension. Moreover, desktop research acts as a catalyst for subsequent research by pinpointing areas of insufficient information and highlighting the need for new, original data collecting (Sherif, 2018). To undertake identify empirical literature, study constructs were used in the search engine. Others scholars who have used this methodology include Masama and Bruwer (2021) andAlhosseiny (2023).

EMPIRICAL LITERATURE

Mobile Money and Financial Inclusion

Ahmad *et al.,* (2020) conducted research on the impact of mobile money on financial inclusion and development in sub-Saharan Africa. They employed taxonomic, descriptive, and analytical approaches to evaluate the current understanding in this field. The researchers analyzed the impact of mobile technology, namely Kenya's M-pesa, on economic development and financial inclusion. They explored both the theoretical and practical aspects, taking into account market structure, pricing, and regulatory consequences. The study discovered that the majority of current research is descriptive and encounters endogeneity problems. This indicates that additional examination is necessary regarding the adoption of mobile money, its connection with traditional banking, and regulatory frameworks. Furthermore, although it has been demonstrated that mobile money-enabled remittances help to stabilize consumption, a more thorough investigation is needed to understand their wider economic effects, including their potential to promote or impede economic growth. Whereas the study examined the effect of mobile money on financial inclusion and development using primary data, this study is a desktop research singles out Kenya's banking sector as opposed to the entire economy.

Hamdan *et al.,* (2022) conducted a study highlighting the importance of mobile money in improving financial inclusion, specifically in developing countries with evidence from Uganda. Although a significant number of micro-entrepreneurs (86% in their study) have mobile money accounts, just 49% actively use them, indicating that there are missed possibilities. The study established that mobile money provides financial access to almost 40% of individuals who previously did not have access to formal or semi-formal financial services. However, a significant number of people, notably women and those who are most disadvantaged, are still excluded from this access. The main obstacles to utilization include high fees and insufficient physical infrastructure, including a scarcity of mobile money agents that are unevenly distributed. Moreover, the absence of financial education exacerbates the lack of responsiveness to changes in prices among micro-entrepreneurs. Whereas the study focused on developing countries (Uganda) in its analysis on the effect of mobile money on financial inclusion, this study uses desktop research to examine the effect of mobile money on the banking sector in Kenya.

Kim (2022) did an empirical investigation to evaluate the influence of mobile money on the financial inclusion of women in Nairobi. The study emphasized that women in Kenya encounter substantial obstacles to financial inclusion as a result of restricted property rights and the requirement for male consent to engage in financial transactions. Moreover, a significant number of women were engaged in the informal sector, which posed challenges for them in fulfilling the documentation criteria set by conventional financial institutions. Kim's research in eight regions of Nairobi revealed that mobile money effectively reduced financial exclusion among women by offering immediate remittance and payment services, as well as a secure method of storing money. Younger women and individuals with lower levels of education and wealth placed a higher weight on these advantages. Although it does not specifically tackle the underlying causes of gender-based financial inequality, the implementation of mobile money had effectively increased financial inclusion by improving women's ability to utilize financial services. Whereas this study focused on women in Nairobi and collected primary data, this study focuses on the banking sector in Kenya using desktop research.

Mobile Banking and Financial Inclusion

Kemal (2023) employed the Duality of Technology (DoT) paradigm to examine the innovation of mobile banking (m-banking) in the Benazir Income Support Programme (BISP) in Pakistan. The study focused on the viewpoints of both service providers and customers. The study examined how institutional forces affect the social development of mobile banking, and explored how mobile banking impacts financial inclusion in BISP households. Through a case study methodology, data was collected by conducting 33 semi-structured interviews with various stakeholders including BISP managers, beneficiaries, bankers, mobile operators, and international agency staff. Additionally, two focus groups were conducted and secondary sources such as corporate reports and official documents were consulted. Study results showed that m-banking, which was designed to suit management objectives, improved openness, security, and efficiency in the delivery of government-to-person (G2P) payments. Further, mobile banking provided women beneficiaries with flexibility and convenience, but it also encountered socio-economic and technological limitations that restricted their access to financial services. Although there are some limits, m-banking has played a role in empowering women and promoting financial inclusion, demonstrating its ability to bring about significant changes in the socio-economic environment. Whereas this study was a case study which used qualitative data to examine the influence of mobile

banking on financial inclusion, this study uses desktop research to determine the effect of mobile money on financial inclusion in the banking sector in Kenya.

A study conducted by Akter *et al.,* (2021) examined the influence of mobile banking on the level of financial inclusion in 17 developing nations between 2011 and 2017. The study utilized the Sarma model of Index of Financial Inclusion to assess inclusion across three dimensions: penetration, access and Uses, by integrating mobile money accounts and mobile banking outlets as additional factors. The findings demonstrated that the utilization of mobile banking had a good impact on financial inclusion, particularly in African countries where notable advancements were observed in comparison to other regions. Nevertheless, the study had restrictions since it only focused on specific developing nations. This study highlights the significant impact that mobile banking can have on improving financial inclusion. Whereas this study provides useful insights on the influence of the banking sector on financial inclusion, in developing countries by collecting primary data, this study is a desktop research.

Isabwa (2021) conducted a study to investigate the impact of mobile banking on financial inclusion in Kenya's commercial banks. The study utilized a positivism research philosophy and an ex-post facto research design, analyzing secondary data from 39 commercial banks. The study specifically focused on ten banks that were identified as having the most effective mobile banking apps. The results of inferential statistics, specifically Pearson correlation and regression analysis, demonstrated that mobile funds transfers ($\beta = 1.697$, $p = 0.000$), cash withdrawals via mobile platforms ($\beta = 1.195$, $p = 0.000$), and deposits via mobile platforms ($\beta = 0.354$, $p = 0.000$) all had a significant positive impact on financial inclusion. The study found that mobile banking has a substantial impact on improving financial inclusion. It suggests that all financial institutions should use mobile banking to promote greater financial inclusion. Whereas this study provides useful insights o nth effect of mobile banking on financial inclusion by collecting primary data, this study is a desktop research.

STUDY FINDINGS

This section presents the study findings from the empirical literature review on the effect of Fintech on financial inclusion in the banking sector in Kenya. The two study objectives that guided this study were to determine the effect of mobile money on financial inclusion in the banking sector in Kenya and to evaluate the role of mobile banking on financial inclusion in the banking sector in Kenya.

Mobile Money and Financial Inclusion Findings

Financial inclusion has been much enhanced by the advent of mobile money services in Kenya's banking sector, especially in rural areas with little traditional banking infrastructure. Ahmad *et al.,* (2020) highlight the revolutionary power of mobile money, which has greatly increased the population's access to financial services and thereby closed the gap in financial accessibility. The growing financial penetration emphasizes how important mobile money is in filling up gaps in accessibility and market coverage by offering banking services to formerly underprivileged communities. Through extending financial alternatives beyond basic transactions, mobile money platforms have improved service accessibility by providing a broad range of services including money transfers, bill payments, savings, and credit facilities.

The experience of Kenya with mobile money, best represented by the popularity of M-pesa, represents a significant change in the financial environment. According to research by Kim (2022) and Hamdan *et al.,* (2022), mobile money has become a trigger for more people in several demographic groups to have access to and use of financial services. Mobile money integration has prompted a restructuring of financial service delivery by democratizing financial services and closing previous disparities in access and usage among underprivileged groups. Widespread use of it has brought banking services to hitherto unreachable remote and rural regions, therefore advancing financial participation. Regulating barriers and gender disparities still exist, though, which emphasizes the need of coordinated measures to fully exploit mobile money's revolutionary potential to improve financial access, service availability, and usage in Kenya's banking sector.

Kenya's move towards more safe and official financial procedures is reflected in the increase in the use of financial services made possible by mobile money platforms. As Kim (2022) notes, mobile money services are a common financial instrument, especially among women, because of their accessibility and convenience, especially for remittance and payment operations. Even with this advancement, problems such high transaction costs and uneven agent distribution still exist, calling for more study and government action to maximize the advantages of mobile money. To fully achieve the economic benefits and inclusiveness of mobile money services, all sections of society must be ensured to gain from Kenya's changing financial environment.

Mobile Banking and Financial Inclusion Findings

Using mobile banking services has become clear as a key component of improving financial inclusion in Kenya's banking sector. Using the Duality of Technology paradigm, Kemal's (2023) study clarifies the revolutionary power of mobile banking, especially in advancing financial inclusion among underprivileged populations. The study highlights the need of mobile banking in enhancing accessibility, security, and efficiency in the provision of financial services, particularly for government-to-person payments, by looking at the viewpoints of several stakeholders, including service providers and clients. Even with its

technological and socioeconomic constraints, mobile banking has been crucial in enabling women beneficiaries and promoting financial inclusion, underscoring its ability to bring about major socioeconomic shifts in Kenya's banking sector.

Comparably, the impact of mobile banking on financial inclusion in developing countries, including Kenya, is insightfully discussed by Akter *et al.,* (2021). Their results highlight the beneficial effects of mobile banking on markers of financial inclusion, especially in African nations where significant progress has been noted. This emphasizes the ability of mobile banking to address access gaps and advance further financial inclusion in Kenya's banking industry. In addition, the study by Isabwa (2021) on the effects of mobile banking in Kenya's commercial banks highlights even more how important mobile banking is to enhancing financial inclusion. The study highlights the need of using mobile banking to encourage increased financial access and usage by illustrating the beneficial effects of mobile money transfers, cash withdrawals, and deposits using mobile platforms through inferential statistics analysis.

Given these results, it is critical that Kenyan banking sector policymakers give policies meant to use mobile banking to improve financial inclusion first priority. To guarantee greater access to mobile banking services, particularly in rural and underdeveloped areas, this entails funding infrastructure and digital literacy initiatives as well as creating an enabling regulatory environment that encourages innovation and competition in the mobile banking sector. By solving these shortcomings and harnessing the promise of mobile banking, Kenya's banking sector can play a crucial role in increasing financial inclusion and fostering socio-economic development across the country.

Theoretical Evidence

Theoretical justification for Financial Intermediation Theory, Information Asymmetry, and Adverse Selection Theory is offered by the empirical literature when discussing mobile money and banking in sub-Saharan Africa, namely Kenya. The impact of mobile money on financial inclusion and economic development is highlighted in Ahmad *et al.,* (2020) analysis of the technology's function as a financial intermediary. They support the fundamental ideas of Financial Intermediation Theory by highlighting the significance of comprehending market structure, pricing, and regulatory ramifications. This is further supported by Hamdan *et al.,* (2022), who demonstrate how mobile money improves financial access, reiterating the central idea of the theory, that intermediaries facilitate investment and growth by bringing together savers and borrowers. Furthermore, Kim (2022) provides an example of how mobile money, which functions similarly to financial intermediaries in facilitating transactions, can lessen financial exclusion among women by offering instantaneous remittance and payment services. Together, these studies show how mobile money platforms function as middlemen, fostering liquidity, reducing information asymmetry, and converting short-term deposits into long-term loans, all of which support financial inclusion in Kenya's banking sector.

Additionally, the literature provides insights into Adverse Selection Theory and Information Asymmetry, especially in relation to the effect of mobile banking on financial inclusion. In order to resolve the information asymmetry between market participants, Ahmad *et al.,* (2020) draw attention to the necessity of additional research into the adoption of mobile money and its relationship with traditional banking. According to Hamdan *et al.,* (2022), there are still a lot of obstacles to overcome before mobile money accounts can be widely used. These include expensive fees and poor infrastructure, which can result in adverse selection, the exclusion of some groups from financial access, most notably women and the underprivileged. This is further supported by Isabwa (2021), who uses inferential statistics to show how mobile banking greatly increases financial inclusion and provides transparent and easily accessible financial services, so addressing the issue of adverse selection. In keeping with the theoretical framework of Information Asymmetry and Adverse Selection Theory, these studies collectively highlight the significance of mobile money and banking in lowering information asymmetry and adverse selection, thereby promoting financial inclusion in Kenya's banking system.

CONCLUSION AND RECOMMENDATIONS

Conclusions

The study concludes that mobile money services have a significant effect on financial inclusion in Kenya's banking sector. These platforms, which offer a wide range of activities beyond simple transactions, have changed access to financial services, especially in rural areas lacking traditional banking infrastructure. Kenya's experience, exemplified by M-Pesa's success, represents a fundamental change in the financial environment. Further demonstrated by how mobile money has democratized financial services and lessened access gaps for underserved populations. Notwithstanding advancements, gender inequalities and regulatory obstacles continue to exist, emphasizing the necessity of coordinated efforts to fully realize mobile money's promise in improving financial access and usage.

This study also concludes that mobile banking is important in the advancement of financial inclusion in Kenya's banking sector. Mobile banking increases accessibility, security, and efficiency, especially when it comes to the distribution of government payments. These advantages highlight how crucial it is to give policies that use mobile banking as a means of advancing financial inclusion top priority. To enable wider access to mobile

banking services, policymakers must create supportive regulatory frameworks, encourage digital literacy, and invest in infrastructure.

Finally, this study concludes that, the empirical literature offers strong theoretical justification for the central roles played by Financial Intermediation Theory and Information Asymmetry and Adverse Selection Theory in explaining how Fintech through mobile money and mobile banking affect financial inclusion in Kenya's banking sector. By bringing depositors and borrowers together, improving liquidity, and reducing information asymmetries, mobile financial services serve as vital middlemen that support economic growth. Furthermore, by offering transparent, easily accessible, and reasonably priced financial services, these platforms tackle the problems of adverse selection while also empowering underrepresented communities and advancing financial inclusion.

Recommendations

Based on the study findings the following recommendations were made:

i. In order to encourage innovation and competition in the mobile banking sector, regulators are essential. They should work with financial institutions, mobile money service providers, and other stakeholders to develop policies that support SDG 17, which stresses partnerships for the goals. This partnership can accelerate the realization of Vision 2030 by fostering equitable and sustainable economic growth.

ii. To better serve vulnerable populations, such as women and the impoverished, financial institutions and mobile money service providers should work together to support financial literacy initiatives. This bolsters Kenya's Vision 2030 pillar of investing in the development of human capital as well as Sustainable Development Goals 4 (excellent education) and 5 (gender equality). Kenya can promote inclusive growth and lower poverty by equipping people with financial knowledge and skills.

iii. To solve issues with mobile banking affordability, such as high transaction costs and unequal agent distribution, financial institutions and regulators should collaborate. This is in line with Kenya's Vision 2030 goal of providing equitable access to economic opportunities, as well as SDG 1 which deal with decreasing inequality and SDG 10, poverty, respectively. Kenya can encourage economic development and social inclusion by lowering the cost and increasing the accessibility of mobile banking.

iv. Financial institutions should also take advantage of mobile banking to increase financial usage and access, especially for marginalized groups. This promotes SDGs 9 on industry, innovation, and infrastructure as well as SDG 8 on decent work and economic growth. As Kenya aims to reduce poverty and promote sustainable economic growth, mobile banking can help achieve this goal by providing a plethora of financial services beyond simple transactions, like credit and savings accounts.

v. To improve access to mobile banking services, policy makers in the banking sector should give priority to digital literacy and infrastructure development projects, particularly in rural and undeveloped areas. This is in line with Sustainable Development Goal (SDG) 9, which is to create innovative environments, encourage equitable and sustainable industry, and develop resilient infrastructure. Kenya may achieve its Vision 2030 objectives of being a middle-income nation with a good standard of living by making investments in digital literacy and infrastructure.

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Cite This Article: Chepngeno E. Maina & Dennis Nyamasege (2024). Financial Technology and Financial Inclusion in the Banking industry in Kenya. *East African Scholars J Econ Bus Manag, 7*(6), 226-236.