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The Impact of Fintech on Traditional Banking System in Kiambu County, Kenya

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Abstract: The objective of this study is to investigate the effect of FinTech on traditional banking system in Thika Sub-county, Kiambu County in Kenya. The study has employed analytical research design collecting primary data through structured questionnaire on a sample of 28 respondents from Thika town in Kiambu County, Kenya. It has been discovered that FinTech adoption is driven by the widespread mobile phone usage and increased financial literacy with a proportion of a third on frequent usage with the majority engaged on FinTech due to convenience, even though still ATM services exists among the users of financial technology. Its evident that there is lower usage rate which could be attributed to technical hitches on the side of use of the technology. Thus impacted banking financial transactions to a third on its integration which could in the future necessitates the sector to incorporate Artificial Intelligence in order to better its accessibility and simplicity on the use of technology. The study recommends that for the purpose of achieving a modern banking systems in Kenya should prioritize accessibility and simplicity which shall fast-rack mobile and online platforms by providing 24/7 access and allow customers to manage their finances easily. In the wake of artificial intelligence and cloud computing commercial banks should revolutionize banking system through personalized recommendation, fraud detection and enhanced security and agility in the banking industry.

Keywords: FinTech, Traditional banking systems, Digital transformation

I. INTRODUCTION

Financial technology has evolved to be an formidable force of reckoning in the world on financial intermediation which is shaping the developing economies of many countries, in particular Kenya. Its development has greatly changed how financial institutions and related institutions in offering their financial services which has greatly enhanced financial inclusion and economic growth. Most of experts agree that the burst of FinTech is believed to have come into being after the global financial crisis under the conditions of mistrust of banks and difficulties with taking out loans (Chishti & Barberis, 2016; He et al., 2017; Kleiner, 2002; Kornai, 1998; Myers, 1996; Philippon, 2017).

Kenya has witnessed the unexpected growth in FinTech, driven by innovations such as mobile money (M-Pesa), which has provided millions of previously unbanked individuals with access to financial services (World Bank, 2020; Cook & McKay, 2015). The success of M-Pesa and other FinTech solutions has spurred a wave of digital financial products and services that are reshaping the financial sector and the broadening the economy (Central Bank of Kenya, 2020; FSD Kenya, 2019). Despite those advancements, the issues of regulatory constraints, infrastructure deficits, and Cyber security threats pose significant challenge to the full potential of FinTech (Communications Authority of Kenya, 2020; PWC, 2019).

The communication authority authority of Kenya is meant offer a conducive environment to FinTech growth, with the Central Bank of Kenya adopting a "test-and-learn" approach to new technology. This regulatory flexibility has allowed FinTech companies to scale their services while ensuring consumer protection and financial stability (Central Bank of Kenya, 2018). Mobile money remains the most prominent FinTech innovation, but the sector has diversified to include digital lending, insurtech, and blockchain applications (Gikandi & Bloor, 2010). Digital lenders like Tala and Branch

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have emerged, providing quick, unsecured loans via mobile platforms, thereby catering to the credit needs of individuals and small businesses (Mazer & McKee, 2017). Blockchain technology is another area mile stone development, with initiatives such as BitPesa using blockchain to facilitate cross-border payments and remittances (Björkegren, 2018). The Kenyan government has also shown interest in blockchain for land registration and other public services, highlighting the technology's potential beyond financial services (Republic of Kenya, 2018).

The Economic Survey Report of (2022) (1), the value of output from the Information and Communication Technology Sector rose by 6.9% from USD 4.03 billion in 2020 to USD 4.31 billion in 2021. Mobile money subscribers increased by 8.5% to 35.2 million in 2021 and the value of mobile commerce transactions increased by 63.2% to USD 116.4 billion in the same period. Essentially, the total mobile money transfers grew by 31.7% to USD 52.5 billion, a growth which is attributed to the COVID-19 pandemic. Within this period the Kenyan Government encouraged use of mobile money platforms with an aim to curb the spread of the virus through handling of cash.

Afro-Asia FinTech Festival Nairobi Online City (2020) on a theme on "People and Talent: Harnessing Collaboration in Pursuit of Resilience and Growth Post COVID-19." It brought together professionals in the industry to network, collaborate and share the insights on how technology, finance and innovates the future of the industry. It highlights potential solutions to investors partner with the aim of exposing Kenyan market share by commercial banks. Despite the risk associated on the effect of FinTech and the possible positive impact need to be minimized due to Cyber security threats.

This study addresses the frequency, services, security challenges and reason why FinTech services are employed the users of the technology. The focus of this study is to uncover how FinTech has enhanced customer satisfaction and cost efficiency as unlike traditional banking system in Thika Town, Kenya.

STUDY OBJECTIVE

To investigate the impact of FinTech on Traditional banking systems in Kiambu County, Kenya.

II. METHODOLOGY

The study used a descriptive research design. Primary data was gathered with the help of a structured questionnaire (pick and drop) on a sample of 28 respondents who are the primary users of the technology from Thika Town, Kiambu County, Kenya. The data was analyzed using inferential statistical analysis.

III. LITERATURE REVIEW

Theoretical Review

Diffusion of Innovations Theory

The theory was developed by Everett Rogers in 1962, examines how, why, and at what rate new ideas and technology spread through cultures. Rogers identified several factors influencing the adoption of innovations, including the perceived advantages of the innovation, compatibility with existing values and practices, simplicity, trialability, and observable results (Rogers, 1962). According to Rogers (1996), there are four key elements that influence the diffusion and application of novel concepts namely: the innovation characteristics, social systems, channels of communications and time involved. The theory assumes that adoption of new ideas, products and behaviors can never occur simultaneously. Some people will be slow in adopting new ideas as they monitor the behaviors of those who are fast in adopting new ideas, Wani T. A. & Ali S. W. (2015).

Financial Intermediation Theory

This theory was advanced by Diamond and Dybvig (1983), argues that commercial banks are financial intermediaries which assist in facilitating the collection of savings and lending the same to borrowers. Being regarded as coalitions of depositors that insure households against shocks that impact their liquidity state (Diamond & Dybvig, 1983). Financial intermediaries are key in providing solutions to three main challenges namely: transaction costs, regulatory factors and information problems. Informational asymmetries, the theory assumes that such information asymmetries are key in comprehension and appreciation of the process of financial intermediation. Allen and Santomero (1997) share that financial intermediary are developed and grow due to imperfections in the market place, similarly the growth and

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advancement of FinTech banking including the elements like mobile banking, internet banking and FinTech lending is based on imperfections of the financial markets and willingness of the market to price and sell these products.

Technology Acceptance Theory

It was developed by Fred David in the year 1989 and looks at ways in which people tend to embrace and adopt new innovations. According to Davis (2009), the theory could be used to forecast whether new innovations will be accepted or rejected by uncovering the inter-relationship between beliefs, attitudes, and action purpose. It is one of the most important foundations for assessing technology utilization and performance in companies. As a result, the theory was predicated on two key assumptions: people's desire to utilize new technologies, in addition to the apparent simplicity with which technology systems and applications can be used, and the technology's perceived utility and advantages (Lu, Yu, Liu & Yao, 2003).

Empirical studies

Chepngeno E. Maina & Dennis Nyamasege (2024), aimed at determining the effect of mobile money on financial inclusion in the banking sector in Kenya and the role of mobile banking in financial inclusion. The study is anchored on financial inter - mediation theory and information asymmetry and adverse selection theories. The study employed desktop research methodology. The study concluded that the establishment of mobile money greatly improved financial inclusion by bridging gap on disadvantaged groups and boost accessibility. It recommended the regulators, financial institutions and mobile money service providers to work together to promote innovation and competition in the mobile sector in Kenya.

Omamo, S. O. (2024) conducted a survey aimed at examining the effect of cost related factors, customer related factors and technology related factors on FinTech adoption by Kenyan commercial banks. The survey is anchored at diffusion of innovation theory and technology acceptance model. The survey concluded that the cost related, customer related and technology related factors could improve the adoption of FinTech by commercial banks in Kenya, which could be possible by reduction of reliance on legacy systems to make FinTech competitive with banking systems, processes and developing a secure FinTech. Preparedness could be enhanced through the adoption of digital innovations strategies, improving technical capabilities and human capabilities.

Edward Iluba and Jackson Phiri (2021), undertook investigation with an objective of assessing the factors leading to adoption of FinTech services and how they affect traditional banking systems in Zambia. The study concluded that there was a strong positive correlation of 0.45 between the relative advantage and adoption of FinTech. The study recommended a revised model that shows factors that affecting adoption of an innovation that might help banks.

Shubham Goswami et al (2022) wrote a paper to investigate the critical success factor influencing adoption of disruptive financial technology for financial inclusion in rural India. It empirically measures the impact of technology on promoting entrepreneurship in under-developed regions for future adoption of technology in rural India. Exploratory factor analysis was applied for critical identification and structural equation modeling for measuring impact of FinTech in financial inclusion in rural India. The study discovers that factor constructing social influence have positive impact on behavioral intention to use and manage technology in rural sector in India. The paper proposes emerging good practices related to policy makers, regulators and investors in changing financial environment.

Nanubothu Kumaraswamy (2023) undertook a study aimed at analyzing the impact of FinTech on banking industry to disclose how FinTech seeks to improve and automate delivery and use of financial services in India. The study concluded that the development of FinTech sector has given a boost to overall economy of India, even though there exists hindrances due to security and usage rate by unbanked population. The study recommended the regulator to formulate policies to remove it as such the FinTech sector can upgrade banking system of India completely.

IMF (2019), FinTech was a major force shaping the structure of the financial industry in sub-Saharan Africa. New technologies are being developed and implemented in sub-Saharan Africa with the potential to change the competitive landscape in the financial industry. While it raises concerns on the emergence of vulnerabilities, FinTech challenges traditional structures and creates efficiency gains by opening up the financial services value chain. Today, FinTech is emerging as a technological enabler in the region, improving financial inclusion and serving as a catalyst for the emergence of innovations in other sectors, such as agriculture and infrastructure.

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Kemunto and Eunice Rabera et al. (2018) examined the influence of Fintech strategies on Kenya's banking sector competitiveness. The results of the study concluded that the enhancement of the competitiveness of commercial banks is positively and significantly related to the enhancement of e-banking, mobile banking, agency banking, and process automation. Particularly, the results indicated that mobile banking was the most significant factor influencing the competitiveness of commercial banks. In contrast, the second most significant driver for the competitiveness of commercial banks was process automation. Agency banking was the third major significant driver. However, internet banking was the least significant factor in influencing the competitiveness of commercial banks.

Frequency	Rate of usage (%)	
Never	9	
Rarely	27	
Sometimes	33	
Frequently	27	
Always	7	
Mean	20	
Standard deviation	12.37	

IV. RESULT AND DISCUSSION Table: 1. Frequency on use of FinTech

Source: Primary data.

It was inferred that users at rate 6% never used the technology, 27% rarely are involved with the technology, 33% sometimes uses technology, 27% frequently use the system while 7% always use the technology to undertake financial transactions. The study concludes that a third of the users of the technology are engaged on either mobile banking services or online banking services to meet their day to day banking services in their life or business in Kenya.



Services	Rating (%)	
Mobile banking	48	
Online banking	30	
Digital wallet	5	
Cryptocurrency	10	
Peer to peer payments	7	

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Mean20Standard deviation18.56

Source: Primary data.

It was deduced that there was high rate of usage of mobile banking at 48% followed by online banking at the rate at 30% then cryptocurrency at rate at 10% while peer to peer payment system at 7% but digital wallet usage was as low as 5%. The study concluded that averagely mobile banking services were employed on banking financial transactions.



Table: 3. Reasons for the use of FinTech		
Reasons	Rating (%)	
Convenience	37	
Cost saving	10	
Speed transactions	20	
Security	17	
Access	16	
Mean	20	
Standard deviation	10.17	
Source: Primary data.		

It was inferred that the reasons for FinTech at 37% was due to convenience on usages, 10% due to cost saving, 20% due to speed of transaction processing, 17% due to security reasons while 16% due to technology accessibility. It was concluded that majority of the users of the technology was due to convenience followed by speedy transactions on usage and least on cost saving for the technology.

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Graph 3: Reasons for the use of FinTech



Table. 4. Traditional banking services		
Services	Rating (%)	
Branch visits	20	
ATM	60	
Cheques	20	
Mean	33.33	
Standard deviation	23.09	
~		

Table: 4. Traditional banking services

Source: Primary data.

The study discovered that traditional services still exist with the usage of ATM services at rate of 60% while others services at rate of 20% for purpose of visitations for some other reasons or cheques deposit / cash withdrawal with use of cheques. It was concluded that averagely the users of the technology visit the banks to get Automatic Teller Machine services.





Table: 5.	Challenges	faced	on the	users	of FinTech
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Challenges	Rating (%)
Security	10
Cyber security threats	20
Technical	35
Lack of human interaction	15

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20
0.35
20

Source: Primary data.

It was inferred that the users of the technology challenges at 10% due to security concerns, 20% due to Cyber security threats, 35% due to technical issues, 15% due to lack of human interactions and 20% due to reliability of the technology. It was concluded that majority of the users of the technology were faced with technical issues which can be due to lack of exposure to the usage of the technology.



Table: 6. Impact of FinTech on banking services		
Impact Rating (%)	
Customer satisfaction 33.33		
Transaction speed 33.33		
Cost efficiency 33.33		
Mean 33.33		
Standard deviation 0.00		

Source: Primary data.

It can be deduced that a third of FinTech services had an impact on the users of the technology. It was concluded that the technology has not been well harnessed by banks in Kenya and this can be due to reluctant on the deployment of the technological infrastructure.

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Graph 6: Impact of FinTech on Banking Services



Table: 7. Improvement required on FinTech		
Improvement	Rating (%)	
Artificial Intelligence	47	
Blockchain	21	
Cloud computing	32	
Mean	33.33	
Standard deviation	13.05	

Source: Primary data.

It was inferred that at 47% on artificial intelligence, at 21% on blockchain, while at 32% on cloud computing to be integrated to FinTech to ensure accessibility and simplicity of the technology in the future. The study concluded that on average the financial institutions need to incorporate the use of Artificial Intelligence followed by cloud computing and least on blockchain in the future.



V. CONCLUSION AND RECOMMENDATIONS

Conclusion

In Kenya FinTech adoption is driven with the widespread mobile phone usage and increased financial literacy with a third frequency on usage whereby the majority are engaged on FinTech because of convenience, even though ATM services still exists among the users of financial technology. This can be attributed to technical hitches on use of the technology. Thus impacted banking financial transactions to 33.33% of on its integration, which could necessitates Kenya banking systems to incorporate Artificial Intelligence in order to better its accessibility and simplicity on the use of technology in the future.

Recommendation

To achieve a modern banking systems in Kenya should ensure prioritizing accessibility by extending financial services to unbanked populations particularly emerging markets and increasing efficiency by leverage one another strength to

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streamline processes and automation of tasks which could enhance mobile and online platforms to provide 24/7 access and allow customers to manage their finances easily. In the wake of artificial intelligence and cloud computing, commercial banks should revolutionize banking system through personalized recommendation, fraud detection and enhanced security in collaborative manner to mitigate risk of Cyber threats and enhance agility on service delivery.

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