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The Strategic JOURNAL of Business & Change MANAGEMENT
ISSN: 2312-9492 www.strategicjournals.com
Vol. 10, Iss.4, pp 949 – 960. November 7, 2023. www.strategicjournals.com, ©Strategic Journals

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Accepted: October 22, 2023

DOI: http://dx.doi.org/10.61426/sjbcm.v10i4.2798

ABSTRACT

The study aimed at determining the effect of financial technology practices on the financial performance of MFIs in Nairobi City County. The study was limited to the following objectives; to determine the effect of mobile banking on the financial performance of MFIs in Nairobi City County, to assess the effect of security technology on the financial performance of MFIs in Nairobi City County, to determine the effect of investments and capital market technology on the financial performance of MFIs in Nairobi City County, and to evaluate the effect of insurance technology on the financial performance of MFIs in Nairobi City County. The study adopted technology acceptance model, general systems theory, theory of financial innovation and the theory of financial intermediation in explaining the underlying effect of financial technology practices on performance of MFIs. Cross sectional survey design employed in the study in order to develop an understanding of financial technology practices effect on financial performance. The target population was 108 respondents drawn from 13 MFIs in Nairobi and will comprise top, and middle management employees. A simple random sampling technique used to select the MFIs while purposive sampling was adopted in selecting the employees to be involved in the study. This technique ensured that only respondents with desired knowledge for the study were selected. Primary data will be obtained through a set of questionnaires. Data analysis involved both qualitative and quantitative analysis. Qualitative data was analyzed using content analysis, whereas quantitative data was analyzed using descriptive and inferential statistics. The study also performed multiple linear regression analysis to establish the degree of relationship between the financial technology practices and financial performance of MFIs. The results showed that mobile banking, security technology, insurance technology had significant positive effect on financial performance of MFIs in Nairobi county. Investment technology had a significant negative effect on financial performance of MFIs in Nairobi county. The study recommended for robust implementation of policies that would enable MFIs to improve on their financial performance. further studies were recommended on other non-financial factors that affect performance of MFIs in other sectors.

Key Words: *Financial Technology, Mobile Banking, Security Technology, Capital Market Technology*

CITATION: Muchiri, C. M., & Juma, D. (2023). Financial technology practices and financial performance of microfinance institutions in Nairobi City County. *The Strategic Journal of Business & Change Management,* 10 (4), 949 – 960. http://dx.doi.org/10.61426/sjbcm.v10i4.2798

INTRODUCTION

Financial technologies (Fin-Techs) is an emerging industry that utilizes the use of technology in improving finance activities (Chishti et al., 2016) while Chitavi, Cohen and Hagist (2021) describes it as the application of technology and innovation to solve the needs of the consumers and firms in the financial space. Rupeika-Apoga and Thalassinos (2020) describe Fintech refers to emerging technologies that offer novel ways of delivering financial services that are unavailable through traditional channels The use of innovative financial technologies ensures the efficiency of decisions in resolving emerging legal issues, the speed of promotion of new banking products and services, a comprehensive solution to the issues of security of financial transactions, improving the financial literacy of the population and the availability of financial services. The innovations used by banks in their activities are the most significant in the last decade, as they became the cause of global transformations in the banking business (Chitavi, Cohen & Hagist (2021).

Qualitatively, financial technologies have changed the areas of insurance, lending, accounting services, real estate appraisal, asset management, investment and other sectors of the financial market. Government and regulatory agencies are showing increasing interest in the latest financial technologies. In the first half of 2020, FinTech businesses received $25.6 billion in funding from around the world. As a result, approximately 88 % of the traditional financial firms expect part of their income to be lost to independent FinTech firms during the next five years. Therefore, to enhance client retention, 77 % of conventional financial institutions aim to expand their attention on innovations. Digital payments' overall transaction value has since increased from $4.1 trillion in 2019 to $5.2 trillion in 2020. The key technologies of FinTech include internet technology (including Internet and Web of Things) (Ruan et al. 2019), big data (Chen et al. 2017; Gai et al. 2018), artificial intelligence (Belanche et al. 2019), distributed technology (blockchain and cloud computing) (Belanche et al. 2019; Gomber et al. 2018; Chen et al. 2019; Wamba et al. 2020; Miau and Yang 2018), and security technology (biometric technology) (Gai et al. 2018, Wamba et al. 2020). Under the influence of these technologies, the traditional development model of the financial industry has changed.

The rapid development of technological innovations in the 21st century is changing the face of the modern world and determining the new architecture of the global economy. North America has the most FinTech startups, whereas Asia has the most revenue-generating FinTech businesses. Stripe, located in San Francisco, is the most valuable financial technology company in the United States, with a market capitalization of $35 billion. Africa has also witnessed tremendous financial innovation. Powered by the rapid adoption of mobile technologies, innovators and tech startups are building a modern infrastructure with the potential to completely change the face of payments. With this wave of innovation, Kenya observed a rapid emergence of FinTech startups and tech giants looking to build advanced payment solutions. This uptake of technology has led to massive growth in FinTech innovation in Kenya. Kenya is booming into an IT hub of Sub-Saharan Africa, progressing towards what it is popularly called Silicon Savannah.

Positioned as one of Africa's top-performing economies, growing at a predicted 6% this year according to the latest African Development Bank (AfDB) figures, Kenya has led the continent in financial inclusion for well over a decade. According to the 2019 FinAccess Household Survey, put together in collaboration with the Central Bank of Kenya, and the Kenyan National Bureau of Statistics, 82.9% of the adult population has access to at least one financial product. South Africa, Uganda, Rwanda and Nigeria follow close behind as financial inclusion leaders on the continent. The Kenyan marketplace boasts approximately 150 FinTech companies at any one time, with services ranging from digital credit entities to remittances and transfer platforms.

It is estimated that the global cumulative investment in FinTech will exceed $1.5 billion in the next 3-5

years (PWC, 2019). Banks and financial institutions across the world are facing the most difficult time as there is a lack of innovation in the banking and finance industry (Tornjanski et al., 2015; Alt, 2018; Jędrzejowska-Schiffauer et al., 2019) and FinTech has come as a blessing in disguise for these organizations as it provides more opportunities with enough innovation and tech-based services (Dapp, 2015). Global investment in FinTech has tripled, growing from 920 million dollars in 2008 to 2.97 billion dollars in 2013 (Huang, 2018). For example, the introduction of the automated teller machine (ATM) in the 1960s changed the way customers dealt with their financial assets (Barberis, 2014). The development of FinTech is due to the convergence of offline financial services with mobile, social network services (SNS), big data, and cloud technology. As a result, the payment services market and its related technologies are developing rapidly and extending well beyond the boundaries of traditional banks. Global companies are interested in developing new technology for more convenient settlement and payment systems and in expanding their services internationally.

According to a McKinsey (2022) report, fintech is the fastest-growing start-up industry in Africa, with the success of fintech companies fueled by several trends such as increased smartphone ownership, declining internet costs, and expanded network coverage, as well as a young, fast-growing, and rapidly urbanizing population. The COVID-19 pandemic also expedited existing tendencies toward digitalization and offered a fertile environment for new technology players, despite the fact that it caused enormous pain and disrupted lives and livelihoods across the continent. Taken together with an influx of funding and increasingly supportive regulatory frameworks, these factors could signify that African fintech markets are at the beginning of a period of exponential growth, and seen to follow the trajectory of more mature markets such as Vietnam, Indonesia, and India.

The new social structure of FinTech enabled by internet services and smart phones attributed to the exponential development in FinTech in Nigeria and globally (World Bank, 2018; Global Findex 2017). According to the Nigerian Inter-Bank Settlement System (NIBSS) study, between 2015 and 2018, about 43.6 million adult Nigerians enrolled for Bank Verification Number (BVN) and are financially included, South Africa has 31% of the financially excluded population, while Kenya has 44%. According to Triki and Faye (2019), less than a quarter of adult Africans are financially included. High cost, distance, and documentation requirements are all potential explanations for this exclusion (Demirgüç-Kunt et al. 2018). Murinde (2020); Igoni, Onwumere, and Ogiri, (2020) reported varied and inconclusive results, which they attributed to the various metrics and analysis techniques used.

Despite a volatile global economy, World Bank data show that 1.2 billion adults gained access to a transaction account between 2011 and 2017. Much of this progress came directly from new digital technologies. The FinTech space in Kenya is vibrant, with significant development in digital lending, digital banking, Insur-Tech and payment services solutions. Kenya is gaining a reputation as a leading FinTech hub in Africa and was recently ranked number 63 in the global top 100 rankings in Africa in the 2020 Findexable Global FinTech Rankings report. The sector's growth has so far been attributed to market demand; increased collaboration between technology providers, traditional financial institutions, FinTech start-ups and regulators; and an enabling regulatory framework. It is anticipated that these will continue to be key drivers for development within the FinTech sector in 2022.

The country has seen skyrocketing mobile penetration rates, with subscriptions surpassing the total population amount by 12%, and FinTech innovations have followed. For example, the telecommunications giant Safaricom, led the push in 2007 with its M-Pesa money transfer service, which functions much like a limited mobile bank but without the need for an internet connection. The whole system runs on technology similar to text

messaging and has expanded to seven countries. These companies have vastly expanded financial inclusion in the country. While financial inclusion in Kenya was at just 26% in 2006, today 83% of the population has access to at least basic financial services. Besides simply becoming exports, these innovations have become models for other African countries. Twenty-four countries have committed to a Digital Economy Blueprint following Kenya's example. Results are spreading the GSMA estimates that West Africa's mobile penetration has doubled over the past decade, with mobile payments and banking driving development in its 15 member states. By the end of 2018, the region saw an increase of 23 million mobile money accounts from the previous year.

Statement of the Problem

Financial technology (FinTech), aims to automate and enhance financial services. Initially described as computer technology utilized in the back office of banks or trading firms, it is now built on cutting-edge, effective information technologies like blockchain, artificial intelligence (AI), big data, and the Internet of Things (Song et al., 2021). FinTech facilitates cost savings, client reach growth, and more effective risk management (Zheng, Hua and Huang, 2019). Within three to eight months, businesses who employ FinTechs for banking chores enjoy a 100% return on their investment. (Medium, 2020). According to a McKinsey Global Institute 2019 report, widespread adoption and use of digital finance could increase the GDPs of all emerging economies by 6%, or $3.7 trillion, by 2025, providing market access to 1.6 billion unbanked people, enabling an additional $2.1 trillion in loans to individuals and small businesses, increasing government tax revenue, and increasing financial services firms' balance sheets by up to $4.2 trillion (World Economic Forum, 2019).

Fintech practices such as mobile banking, investment and capital market, security and insurance, have been adversely adopted by many financial players in the banking sector to boost their financial performance and guard against perceived risks in this case. But many concerns have still been raised by the firms and their clients (Midika 2016). For users of mobile banking, security and privacy concerns are the most prevalent. The increasing number of security breaches and internet frauds call for a powerful authentication mechanism to replace the old ways of user authentication. According to numerous studies, biometric-based authentication and identity systems are the new ways to deal with security and privacy concerns. Other studies also point that fraudulent practices like identity theft, SMS scams, and SIM swaps (Farooq, 2020; Interpol, 2020), as well as instances of network breakdown that render money inaccessible (Kubuga & Konjaang, 2016) are major notable concerns brought by financial technology practices.

KPMG report of 2016, reveals that global venture capital investment in FinTech companies surpassed $13.6 billion across 840 deals. For startups and some other MFIs, this magnitude of capital investment in FinTech has far reaching effect on their revenue performance and hence may be forced to look for other funding sources but which are costly. Despite the marketing hype, sizeable expenditures, and substantial number of financial products and services derived from FinTech innovations, volumes are now still low in comparison to the size of the global financial services industry. However, the upward investment trend and the potential long-term effects of FinTech demand continued attention from banks and bank supervisors (KPMG, 2016).

Although it is crucial to comprehend the connection between FinTech practices and financial performance, there is now only few academic research available (S & P Global, 2016). People's aspirations to use mobile banking services have been examined in previous study on financial technology practices (Arvidsson, 2014; Garrett, Rodermund, & Robb, 2014; Keramati, Taeb, & Mojir, 2012;). In a banking environment, Kazi and Manan (2013) examined perceived risks and the effectiveness of financial technology. Kiilu (2018) investigated the impact of FinTech companies on the financial performance of Kenya's banking industry. However,

research is biased in favor of perspectives on FinTech acceptance, new FinTech developments, and the functions of financial technology in the banking sector. This study therefore, aims to investigate how financial technology practices affect MFIs' financial performance in Nairobi City County within this backdrop.

Study objective

The general objective of the study was to determine the effect of financial technology practices on the financial performance of MFIs in Nairobi City County. The study's specific objective was to determine the effect of security technology practices on the financial performance of MFIs in Nairobi City County.

LITERATURE REVIEW

Theoretical Review

General System Theory

General systems theory (GST) was outlined by Ludwig von Bertalanffy (1968). Its premise is that complex systems share organizing principles that can be discovered and modelled mathematically. A key aspect of GST is that it focuses on interactions and relationships between objects. Security, a frequent emergent component in a system, is not directly pegged to a specific component but is caused by the interaction of a number of components as they try to attain the desired result (Alter, 2015). Designing security solutions for today's e-business systems is a great challenge. The modern business environment is made up of many different applications such as e-mails, accounting systems, databases, e-commerce, and more. Each of these applications has its own threat profile and associated business risk that must be taken into account (ISACA, 2009). The use of systems theory to the analysis and design of security systems opens up a new avenue for reducing complexity (International Society for the Advancement of Science and Technology, 2009).

This theory is used to explain the influence of the external environmental challenges on FinTech firms and the response strategies. Cybercrime, theft of customer information among others pose challenges to FinTech firms and MFIs. Some of the innovations have been towards enhancing both the firms' and customer's security in case of such threats. Advancements in biometrics for identification has been one of these. However, the effectiveness of these biometric solutions can be dependent on the quality of the censoring hardware devices, the speed, and the accuracy of the pattern matching software. Not all banks venture into biometric solutions to enhance their security systems due to their socio-technological issues. For instance, the introduction of biometric systems of identification provides a feed to the general banking system to enable client features and data to be easily determined before authentication of transactions can be finally authorized. This system works in symmetry with the provided bank databases and the client's information to safeguard the both parties from security breaches (Otieno et al.,2016).

As the level of security breaches and transaction frauds increases day by day, the need for highly secure identification and personal verification information systems is becoming extremely important, especially in the banking and finance sector. Biometric technology appeals to many banking organizations as a near-perfect solution to such security threats. Though biometric technology has gained traction in areas like healthcare and criminology, its application in banking security is still in its infancy. Due to the close association of biometrics to human, physical and behavioral aspects, such technologies pose a multitude of social, ethical and managerial challenges.

Conceptual Framework

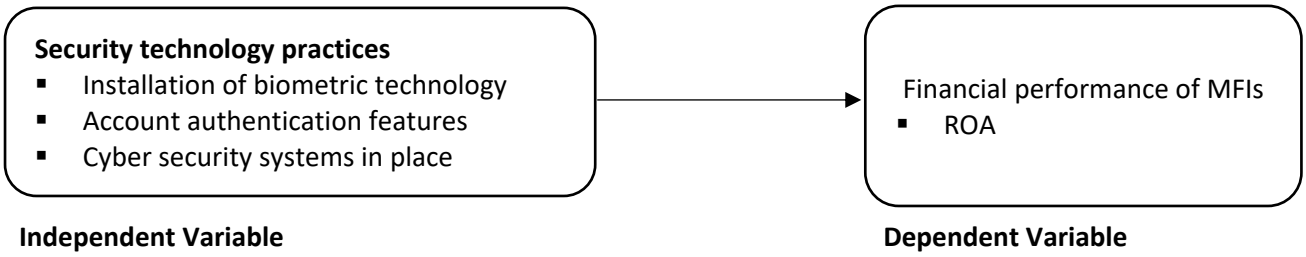

Figure 1: Conceptual Framework

Empirical Review

Varma and Gupta (2017) in their study of customer perception and behavioral intention to use biometric enabled e-banking services in India observe that despite the popularity of e-banking in India, a sizable portion of clients still avoid using online banking, mostly due to security concerns. These security issues have been made more urgent by rising cybercrime cases across a number of bank accountholders who report their concerns. The implementation of quicker and more dependable methods of user identification and authentication is therefore necessary. The study further conclude that banks should be prepared to implement biometric-enabled systems to provide secure and efficient transactions, but must first determine whether consumers are ready to use this technology. Moreover, Midika (2016) also opines that Fintech has revolutionized the financial sector and has forced MFIs and banks to adopt digital financial services with expansive technologies that are accessible to conduct financial services to a vast range of customers. Digital remote methods, such as e-money, mobile money, card payments, and electronic financial transfers, can be used for this (Asian Development Bank, 2016). But the main concerns which have been raised is the systems security to protect the customer and bank confidential information against cybercrime and other form of security breaches (Midika, 2016).

For users of e-banking, security and privacy concerns are the most prevalent. The need for a strong authentication mechanism to replace the established ways of user authentication is driven by the rise in security breaches and online fraud. According to numerous academics, biometric-based authentication and identity systems are the new ways to deal with security and privacy concerns. Individuals are prohibited from accessing both physical venues and technological services when biometrics are used as identity (Amtul Fatima, 2011). The most common concerns for m-banking customers are security and privacy. A strong authentication mechanism is required to replace the outdated methods of user authentication due to the rise in security breaches and online fraud. Numerous research has shown that biometric-based authentication and identity systems are the future of addressing security and privacy issues. Numerous other studies (Farooq, 2020; Interpol, 2020), as well as instances of network failure that make money inaccessible (Kubuga & Konjaang, 2016), highlight the significant risks posed by financial technology practices. These include fraudulent practices like identity theft, SMS scams, and SIM swaps.

Companies go to great lengths to secure their customer's information and gain their trust. As technology continues to advance, security measures also continue to improve and become more sophisticated. While security continues to get stronger, some studies have argued that increased security could have negative effects on the usability of the system it's trying to protect (Braz and Robert, 2006; Yee, 2004). The question then becomes who are you trying to secure this information from? Users already have reservations about E-Banking with a minimum attitude towards its quality at best (Singh, 2011). When security measures are so sophisticated that users cannot access their information, then security has gone too far.

METHODOLOGY

The This study adopted a cross-sectional survey. According to (Orodho, 2014), cross-sectional surveys have been described as snapshots of the populations about which they gather data. The study used both secondary data and primary data that was collected from 108 respondents that were drawn from 49 registered MFIs in Nairobi county, Kenya. The study used a census approach since the population of the study was small. Secondary data sheets were used along a questionnaire to collect the data. The data was analyzed descriptively using SPSS software.

FINDINGS AND DISCUSSION

Descriptive analysis

The second objective sought to assess the effect of security technology practices on the financial performance of MFIs in Nairobi City County. The results of the descriptive analysis were presented as under in the table 1 below;

Table 1: Descriptive Statistics for security technology

Statement	N	Mean	Std. Deviation
Installation of biometric technology has enhanced security of customer features, hence reduced cyber threats	76	4.0526	.74645
Use of biometric technology has enhanced secure transactions between consumers and businesses and put off scammers that would hinder integrity of the business	76	4.3553	.48177
Multifactor account authentication features has increased trust of the customers of more secure transaction	76	4.3947	.49204
MFIs uses antivirus and antimalware applications to prevent malicious transactions	76	4.250	.6351
Secure transactions increases consumer trust which in turns have high customer retention rate	76	4.1447	.66741
Valid N (listwise)	76		

Findings in the table 1 above, show that respondents were in agreement that installation of biometric technology has enhanced security of customer features, and reduced cyber threats as reflected by a mean of 4.0526 with a standard deviation of 0.74645, implying a closeness to the mean. Use of biometric technology has enhanced secure transactions between consumers and businesses and put off scammers that would hinder integrity of the business as agreed to a large extent by the respondents (mean=4.3553, standard deviation=0.48177). The researcher further observed that multifactor account authentication features adopted by many MFIs has increased trust of the customers on more secure transactions as indicated by majority in agreement (mean=4.3947, standard deviation=0.49204). These findings are in line with the observations of Varma and Gupta (2017) who noted that customer perception and behavioral intention to use biometric enabled e-banking services in India was mostly due to security concerns.

Moreover, the researcher found that MFIs uses antivirus and antimalware applications to prevent malicious transactions on customer accounts thus offering more security features to customer's resources as agreed to a large extent by the respondents (mean=4.250, with a standard deviation=0.6351). The researcher concluded that Fintech innovation on securing technology proved to be the cornerstone from the perspective of building customer confidence, trust and to advancing their financial performance. But in contrast to the findings, the main concerns which have been raised is the systems security to protect the customer and bank confidential information against cybercrime and other form of security breaches (Midika, 2016).

Consequently, the study observed that securing customer transactions increased customer trust which in turn led to high customer retention rates

among MFIs in Nairobi county as shown by a mean of 4.1447 and a standard deviation of 0.66741. This implies that the responses were concentrated around the mean thus less variations. Though, Singh (2011) noted the need for more authentication features to secure customers transactions from threats such as frauds and cybercrime. Braz and Robert (2006) suggest the contrary, citing that as technology continues to advance, security measures also continue to improve and become more sophisticated. This increased security could have negative effects on the usability of the system it's trying to protect. When security measures are so sophisticated that users cannot access their information, then security has gone too far (Yee, 2004).

Regression analysis

Table 2: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.700[a]	.660	.613	1.51116	2.286

a. Predictors: (Constant), IS, MB, ST, IT
b. Dependent Variable: FP

The adjusted R square was 0.613, the implication of this was that 61.3 percent could be explained by mobile banking technology, security technology, investment technology and insurance technology practices as presented in Table 2. The remaining 38.7 percent could be explained by other factors outside the study and which were not considered by the study.

Analysis of variance (ANOVA)

The ANOVA test was carried out to establish the overall significance of the model and if provides a good fit for the data under analysis. The ANOVA test was used to show the overall significance of the model used. For this study, the significance of the model was set up at 95% confidence level with a p-value of <0.05, showing a statistical significance. The results were presented as under in table 3;

Table 3: ANOVA[a]

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	30.969	4	7.742	3.390	.014[b]
	Residual	162.136	71	2.284		
	Total	193.105	75			

a. Dependent Variable: FP
b. Predictors: (Constant), IS, MB, ST, IT

The above findings show that the p-value is less than p=0.05, this implies that there was a statistical significant relationship between Fintech practices and financial performance of MFIs in Nairobi county ($F = 3.390$; $p < 0.05$). The significant F-statistic value shows that the variation in the financial performance of MFIs in Nairobi county is not due to chance but is as a result of the effect of the independent variables included in the model. The p-value = 0.014, which is less than the p-value = 0.05, illustrates the significance of the results.

In conclusion, the researcher noted that all the independent variables of mobile banking technology, security technology, investment technology and insurance technology practices jointly have a significant effect on financial performance of MFIs in Nairobi county.

Regression coefficients

Kothari (2004) notes that the magnitude of the coefficient of each independent variable indicates the magnitude of influence/effect of the variable on the dependent variable. The direction of the effect is

indicated by the sign of the coefficient (positive/negative). The regression beta coefficients were used to determine the influence of the independent variables on the dependent variable of the study. The beta coefficients allowed thee researcher to determine which among the independent variables had the highest effect on the dependent variable of the study. The results of the analysis are presented as under in table 4;

Table 4: Regression Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	17.624	3.353		2.274	.026		
	MB	.484	.108	.286	2.626	.011	.996	1.004
	ST	.387	.101	.108	.860	.032	.747	1.339
	IT	-.140	.111	-.163	-1.268	.209	.717	1.394
	IS	.221	.083	.162	1.455	.040	.953	1.049

a. Dependent Variable: FP

$Yp = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$

The regression equation if fixed as;

$Yp = 17.624 + 484X_1 + 387X_2 - 140X_3 + 221X_4 + \varepsilon$

The first objective of the study sought to determine the effect of mobile banking service practices on the financial performance of MFIs in Nairobi City County. Therefore, the unstandardized coefficient value (B) for mobile banking technology is 0.484. This implies that for every one-unit increase in mobile banking technology practices, financial performance of MFIs in Nairobi City County will significantly increase by 0.484 units. The standardized coefficient value (B) is 0.286, implying that mobile banking technology practices has a moderate positive significant effect on financial performance of MFIs in Nairobi City County. Additionally, the t-value is 2.626 at a p-value =0.011 which is less than $p<0.05$, is significant. This implies that the relationship between mobile banking technology practices and financial performance of MFIs is robust and is unlikely due to chance. In conclusion, the results show that mobile banking technology plays a significant role in determining the financial performance of MFIs in Nairobi county. Hence, higher levels of mobile banking practices are associated with better financial performance of MFIs in Nairobi county.

The second objective sought to assess the effect of security technology practices on the financial performance of MFIs in Nairobi City County. The unstandardized coefficient value (B) for security technology is 0.387. This implies that for every one-unit increase in security technology practices, financial performance of MFIs in Nairobi City County will significantly increase by 0.387 units. The standardized coefficient value (B) is 0.108, implying that security technology practice has a moderate positive significant effect on financial performance of MFIs in Nairobi City County. Additionally, the t-value is 0.860 at a p-value =0.032 which is less than $p<0.05$, is significant. This implies that the relationship between security technology practices and financial performance of MFIs is robust and is unlikely due to chance. In conclusion, the results show that security technology plays a significant role in determining the financial performance of MFIs in Nairobi county. Hence, higher levels of security technology practices are associated with better financial performance of MFIs in Nairobi county. De-Acunto, Rhabala and Rossi (2019) also supports that investors could benefit more from Robo-advising, and their market-adjusted investment performance could improve significantly with inclusive security technology in many Fintech firms.

The third objective aimed at determining the effect of investment market technology practices on the financial performance of MFIs in Nairobi City County. From the regression results, the unstandardized

coefficient value (B) is -0.140, implying that for every one-unit increase in investment market technology practices, financial performance of MFIs in Nairobi City County will significantly decrease by 0.140 units. The standardized coefficient (B) is -0.163, implying that investment technology practices have a moderate negative significant effect on financial performance of MFIs in Nairobi county. Furthermore, the t-value is -1.268 at a p-value =0.209 which is greater than p<0.05, is not significant. This means that the relationship between investment technology practices and financial performance of MFIs is not likely to improve financial performance of MFIs. In conclusion, the results show that investment technology practices play an insignificant role determining the financial performance of MFIs in Nairobi county. Though Lucas et al., (2002) supports that investment in ICT provides for efficient trade executions and adequate trading capacity, ensures a high-quality securities market and reduces labour expenses and the demand for physical space, the findings do not agree with this assertion.

The fourth and the last independent variable of this study evaluated the effect of insurance technology practices on the financial performance of MFIs in Nairobi City County. The regression results show that the unstandardized coefficient value (B) is 0.221, implying that for every unit increase in insurance technology practices, financial performance of MFIs in Nairobi City County will significantly increase by 0.221 units. The standardized coefficient (B) is 0.162, implying that insurance technology practices have a moderate positive significant effect on financial performance of MFIs in Nairobi county. Moreover, the t-value is 1.455 at p-value=0.04 which is less than p<0.05 is highly significant, an indication that the relationship between insurance technology practices is robust and is unlikely due to chance. The study therefore concludes that insurance technology practices has a significant effect on financial performance of MFIs and therefore the management of these MFIs should embrace it to foster customer confidence as well as enhance customer trusts on their financial products. The findings support the views of Liu and Chen (2019) position that addressing fraud risk is key to online business models for Insur-Tech providers. Additionally, the results also conform with Aitken et al. (2018) who revealed that greater algorithm trading is associated with increased transactional efficiency and reduced information leakage in top quintile stocks and that there is a tradeoff between fairness and efficiency in the process. Consequently, Aitken, Cumming, and Zhan (2015) show the presence of HFT significantly mitigated the frequency and severity of end-of-day price dislocation with the adoption of insurance technology.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This objective sought to assess the effect of security technology practices on the financial performance of MFIs in Nairobi City County. The findings revealed that security technology including installation of biometrics, account authentication systems and cyber security systems have a significant positive effect on the financial performance of MFIs in Nairobi City County. the results show that security technology practices have a significant positive effect on the financial performance of MFIs in Nairobi City County. Therefore, the researcher implores MFIs management to embrace security technology in order to guarantee customer transactions and information safety from such acts as fraud and cyber security concerns.

Financial technology practices have been found to have a significant effect on the financial performance of MFIs in Nairobi county. The study found that mobile banking technology, security technology and insurance technology all had significant positive effect on financial performance of MFIs. Among these variables, the adoption of mobile banking and security technology had the highest significant effect in determining the financial performance of MFIs. Hence, higher levels of mobile banking practices and security technology practices can be associated with better financial performance of MFIs in Nairobi

county. However, Investment technology practices had a significant negative effect on financial performance of MFIs, meaning it negatively affected financial performance of MFIs in Nairobi county, hence cannot be adopted to enhance performance. Therefore, the study concludes that MFIs can diversify on other investment practices that can generate better benefits other than focusing of funding options and collaborations and partnerships.

There is need for management of MFIs to enhance their security features that will protect customer transactions and customer information from cyber-crimes and fraudsters. This will help them build their customer confidence and trust alongside. Finally, the study recommends for robust transformation and changes in security practices to enable MFIs and other financial institutions adopt such investment decisions that will enable them achieve greater financial performance in the industry.

Suggestions for further studies

The study concentrated on the effect of fintech practices and financial performance of MFIs in Nairobi county. The researcher therefore, suggests that more studies can be done other non-financial practices that affect financial performance of MFIs in general. There is also a need to conduct further studies on the financial implications on technology adoption among MFIs in other set-ups.

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