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FINANCIAL PROCESS INNOVATIONS AND FINANCIAL PERFORMANCE OF MICROFINANCE INSTITUTIONS IN MOMBASA COUNTY, KENYA

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ABSTRACT

The purpose of the study was to investigate the financial process innovations on financial performance of microfinance institutions in Mombasa County. This study used descriptive cross-sectional design. The study unit of observation was all MFIs both deposit and non-deposit taking MFIs in Mombasa County. The study unit of analysis was the management employees of the 15 Microfinance institutions in Mombasa. Purposive sampling technique was used to select a sample size of 89 participants by help of Yamane statistical formula. Primary data was collected using structured questionnaire based on the objectives of the study. The collected data was edited, coded for processing using the Statistical Package for Social Sciences (SPSS v.25) and results were presented in frequency tables. Descriptive and inferential statistics were used to analyze information generated from the respondents. The study established that the Micro finance institutions have enabled remote access to loan origination platform through automation. This implied that clients can originate loan autonomously without visiting the MFIs premises. This has contributed to an increase in remote account openings and loan applications. The study concluded that automated loan origination has reduced the turnaround time for loan approval in the MFI and that the frequency of transactions through the MFI has increased. The study concluded that MFI has taken measures to encrypt credit cards with cutting-edge technologies thus rendering them secure. The study concluded that credit cards are attractive to retail MFIs because they typically provide higher risk-adjusted returns than other types of loans. However, the MFIs do not offer incentives to motivate customers to switch to digital cards usage. The study recommended that management of MFIs should install point of sale terminals in all area with high population and shopping centers so as to enable wider accessibility of MFIs services. The point of sale terminal should be well guarded through round the clock security so as to minimize chances of the terminal tempering resulting in theft of customer's money. The management of MFIs should ensure that the point of sale terminals are available as and when needed and additionally the MFI should enable 2-factor authentication in all point of sale terminal transactions so as to protect the client's money.

Key Words: *Remote Data Processing, Digital Cards, Back Office Automation, Point of Sale Terminals*

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INTRODUCTION

Globalization and rising market competition have pushed financial institutions everywhere to innovate in their business practices in order to acquire long-term competitive advantage and boost performance (Brean, 2018). Financial institutions compete not just on the basis of services, but also on the basis of tangible goods because it might be difficult to tell one brand's products from another in a particular product category. Furthermore, there is a fundamental change in how customers interact with their banks. Consumers have been moving away from traditional banking touch points and toward more flexible digital channels even before the COVID-19 outbreak provided an accelerant.

Financial innovation is regarded as being essential to the expansion and profitability of enterprises. Encouragement and support of financial creative practices and creativity within the institution are some strategies to achieve development and sustain performance. According to a broad definition of financial innovation, both the launch of entirely new financial goods and services in developed economies and financial liberalization, which leads to the adoption of new products and services in emerging markets, are included (Mullineux, 2016). Innovation enhances the use of brokered deposits, facilitates the migration of deposits from checking accounts to money market deposit accounts, and raises the average wage rates for bank staff in brick-and-mortar institutions (Sushanta & Ho, 2017).

Globally, Taiwan's government encouraged the growth and innovation of financial technology by establishing and carrying out the Digital Financial Environment 3.0 Project in 2016. (Wang & Xin-Yuan, 2022). In the United Kingdom, financial institutions have used bank strategic innovations as a strategy to give direction that realizes advantage in a changing environment through its configuration of competences and resources with the aim of fulfilling stakeholders' expectations in the bank, according to Chen, Li, Wu, and Luo (2017). Information and communications technology (ICT) has had a profound impact on banking in Malaysia.

The rapidly approaching entry of new digital firms challenging the status quo in the industry and pushing expanding levels of innovation are progressively shaping South Africa's banking sector. PricewaterhouseCoopers (PwC) identified three market changes in 2017 that could have an influence on the neighborhood banking industry. First, nearby financial services providers started to emerge of digital solutions with lower-cost models. The emergence of sector- and industry-specific banks, launched by non-financial services players, closely integrated with larger supply chains, and the four universal banks' ongoing transformation to address changing customer, regulatory, and technological needs are the second and third factors, respectively. The welcoming regulatory environment provided by the regional banking regulator, the South African Reserve Bank (SARB), is also encouraging a number of new digital companies (PwC Report, 2018).

Over the past two decades, there have been significant developments in the Kenyan financial industry. Numerous changes have been implemented in the sector, which have facilitated the penetration of financial activities, products, and organizational structures that have boosted the effectiveness of the financial system. This transformation has been prompted by both changing economic situations and technological advancements. Financial innovation has accelerated as a result of all these changes, the evolving global financial landscape, and the growing interconnectedness of the domestic and international financial markets (Ongwen, 2017).

In order to reduce insecurity and simultaneously educate its consumers, the banking industry in Kenya keeps implementing more convenient, safe, and secure technologies at their cash points. Banks accelerated their digital strategy in response to the COVID-19 epidemic, according to the CBK Banking Sector Innovation Survey (2020). In the COVID-19 era, 56% of the institutions cited the push for the

adoption and use of digital channels, particularly mobile and internet banking. Innovations in digital funding were essential in combating the COVID-19 pandemic. Business continuity and rapid scaling up of support for disadvantaged groups were made possible by financial technology (Fintech). Compared to 33% of MFBs, 58 percent of banks developed a product specifically designed to counteract the consequences of COVID-19. Between January 1 and December 31, 2020, 79 percent of banks and 72 percent of MFBs offered new Fintech products. Compared to the 2019 Innovation Survey, where 86 percent of the institutions offered a new product, this represented a minor fall on the part of MFBs.

Statement of the Problem

Microfinance institutions are among the financial institutions in Kenya that have continued to make significant expenditures in technological advancements and training for their workforce. For instance, Equity Bank has seen 97 percent of its transactions take place outside of its branches, with more than 513 million taking place via the mobile banking app and 80 million via agents. 90 percent of Kenya Commercial Bank (KCB) transactions are now supported by technology (CBK, 2020). In 2021, Absa Bank Kenya will introduce a new vertical card that will support contactless payments. The performance of financial institutions has still continued to deteriorate despite these improvements. The market share of microfinance institutions and other small banks fell to 17.10% in 2019 from 21.22% in 2018, and customer deposits decreased to KSh 623 billion from KSh 713 billion in 2018. (CBK supervision report, 2020). Additionally, the number of automated teller machines (ATMs) fell from 2,529 in December 2018 to 2,459 in December 2019—a fall of 70 machines. Additionally, despite the fact that banks have improved many of their front-end, customer-facing operations with digital solutions, far too many banking activities still rely on personnel and paper (Dias, Patnaik, Scopa, & van Bommel, 2017).

Numerous research on financial innovations has been conducted. A deposit-taking microfinancial institution in Thika, Kenya, for instance, was the subject of an investigation by Hussein (2019) into the impact of bank innovation on financial performance. In Pakistan, the impact of self-service technology on service quality and behavioral intention was examined by Iqbal, Hassan, and Habibah (2018). Ireri (2020) conducted a study in Kenya to look into financial innovations and commercial banks' performance there. The study, however, concentrated on significant breakthroughs that are difficult to quantify. Ngumi (2016) conducted research on Kenyan commercial banks' performance in light of bank innovations. The study was conducted several years ago, and a lot has happened in terms of bank innovations since then. The impact of credit and debit cards on Kenya's commercial banks' financial performance was studied by Chelangat, Kiprop, and Mutai in 2022. However, the examined empirical researches have mostly overlooked specific financial innovations in the context of microfinance organizations and have instead concentrated on financial innovations generically in commercial banks. The identified literature gaps and the current situation in the Microfinance institutions has necessitated an empirical investigation on the financial process innovations and financial performance of Microfinance institutions in Mombasa.

Objectives of the Study

The general objective of this research was to establish financial process innovations and financial performance of Microfinance institutions in Mombasa, Kenya. The study was guided by the following specific objectives;

- To establish the effects of remote data processing on financial performance of Microfinance institutions in Mombasa, Kenya.
- To evaluate the effects of digital cards on financial performance of Microfinance institutions in Mombasa, Kenya.

- To establish the effects of back office automation on financial performance of Microfinance institutions in Mombasa, Kenya.
- To evaluate the effects of point of sale terminals on financial performance of Microfinance institutions in Mombasa, Kenya.

The study was guided by the following research hypotheses;

- **$H_0$1:** Remote data processing has no significant effect on financial performance of Microfinance institutions in Mombasa, Kenya.
- **$H_0$2:** Digital cards has no significant effect on financial performance of Microfinance institutions in Mombasa, Kenya.
- **$H_0$3:** Back office automation has no significant effect on financial performance of Microfinance institutions in Mombasa, Kenya.
- **$H_0$4:** Point of sale terminal has no significant effect on financial performance of Microfinance institutions in Mombasa, Kenya.

LITERATURE REVIEW

Theoretical Framework

Transaction Cost Innovation Theory

Hicks and Niehans, who advocated and argued that the main characteristic of financial success is the ability to reduce transaction costs that respond to technological advancement and contribute to a reduction in transaction costs, laid out the theory in their ground-breaking concept of transaction cost guidance from 1983. While assuming that money-related technologies reduce the cost of transaction making, the capacity to lower transaction costs helps to financial innovation and financial service upgrading.

According to Coase (2016), institutions have transaction costs that make it more cost-effective for enterprises to coordinate and carry out business procedures through a corporate hierarchy than to rely only on the free market. According to Coase (2016), there are a number of other costs associated with market trading, even though the theory suggests that operating through consumer relationships where the price function defines exchange is typically more effective than through the hierarchy of an enterprise where managerial authority is preeminent. These could include the price of gathering and analyzing data, negotiating with, monitoring, and implementing rivals over whom one has no direct authority, for instance.

Costs associated with transactions As effective communication, data administration, and data utilization are provided by Internet-related information technology (IT), the innovation principle significantly lowers an organization's exchange costs (Remneland-Wikhamn & Knights, 2017). Cell phones that make use of Internet-related IT reduce trade expenses by granting off-website access to the association's internal data set as well as other fundamental data sources. Through the use of mobile and corporate banking, the result further reduces operating costs, which affects the growth of the bank's profitability.

Schumpeter Theory of Innovation

In 1928, Schumpeter made the case that innovators, whether they were independent inventors or R&D engineers working for huge firms, provided the potential for new revenues. The result would be a flood of investment that would reduce the profit margin for the innovation due to groups of copycats drawn by super-profits. But before the economy could stabilize, a fresh innovation or series of innovations—which Schumpeter conceived as Kondratiev cycles—would appear to restart the business cycle.

The bankers who issue loans to finance the establishment of new ventures are clearly distinguished by Schumpeter from the entrepreneurs whose inventions create the framework for successful new businesses. The author made a strong point of highlighting the unique function of bankers in creating credit as "the monetary counterpart of inventions." Bankers are the capitalists who take on all the risks since they act as independent agents with no ownership stake in the new businesses they finance (none is borne by the entrepreneurs). That necessitates possessing

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the unique capacity to assess the likelihood of entrepreneurial activity financing success. Schumpeter underlined the significance of denying credit to those who lack that capacity as well as granting credit to those who do.

Task-Technology Fit Theory

The Task-Technology Fit Model was created in 1995 by Goodhue and Thompson to explain how technology is used by assessing how well it fits users' jobs and expectations. The idea was developed with the intention of adding to the body of knowledge on the use of technology in both private and public situations, which offered little explanation of how technology adoption affects people's performance.

The Task-Technology Fit (TTF) theory offers a way to measure the efficiency of technology inside a system by examining how well it fits the tasks it is intended to assist. Technology is often used in an organization to create value by enhancing or assisting with individual and group work, but it does demand a significant amount of resources for the acquisition, deployment, and use of the various technologies.

The notion of task-technology fit states that an information system's success should be tied to the fit between task and technology, with success being correlated with both individual and group performance (Goodhue & Thompson, 2015). (Zigurs and Buckland, 1998). In order to fit group tasks with group support systems, a special theory of task-technology fit was created (Zigurs & Buckland, 2016) and afterwards evaluated (Zigurs, Buckland, Connolly & Wilson, 2016). Although it has been demonstrated that task-technology fit is generally applicable to mobile information systems, several specific problems about the application of task-technology fit to mobile information systems remain unaddressed (Gebauer & Shaw, 2016).

Conceptual Framework

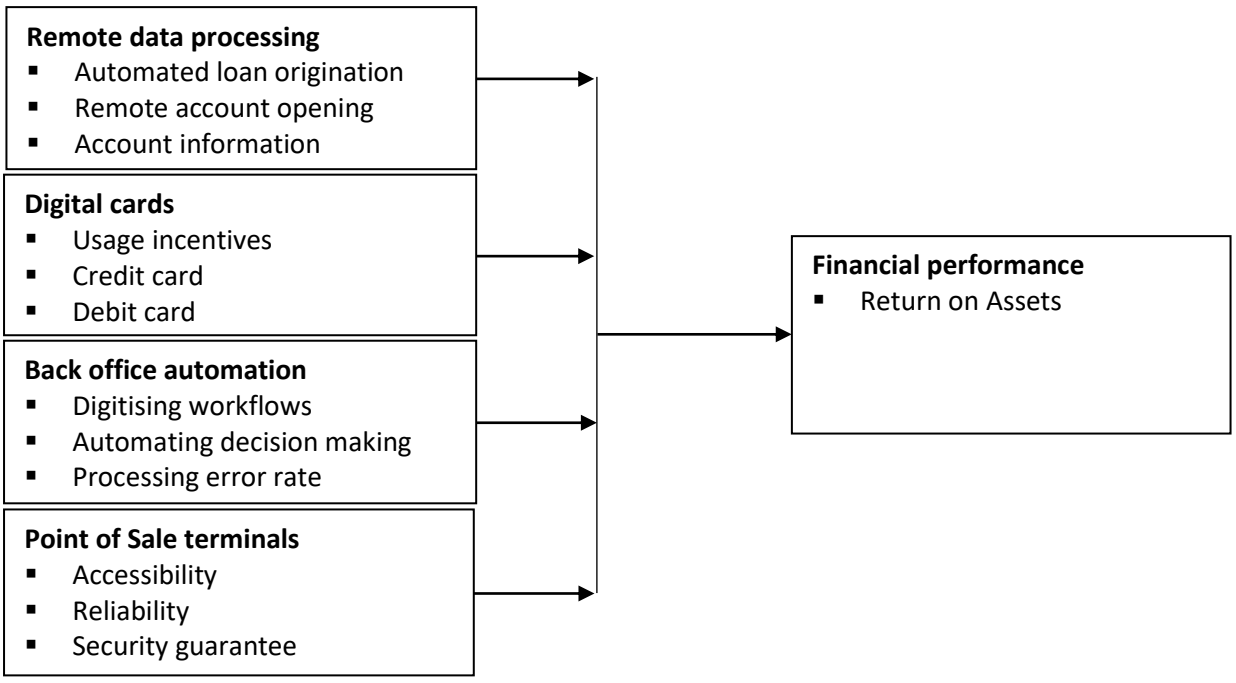

Figure 1: Conceptual Framework

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Review of Literature on Variables of the Study

Remote Data Processing

Technologies such as remote data processing enable clients to produce services without the direct involvement of service personnel (Iqbal, Hassan & Habibah, 2018). In order to improve accuracy, convenience, and speed of service transactions, many face-to-face service contacts are being replaced with self-service technologies. Self-service technology have taken the role of direct interactions between service buyers and providers (Meuter, Ostrom, Roundtree, & Bitner, 2017). It enables consumers to produce and make use of services without coming into direct contact with service organization staff (Eastlick, Ratto, Lotz, & Mishra, 2016). According to Tanya and Nicola (2016), SSTs offer the chance to increase service accessibility, boost competitiveness through increasing market share, guarantee greater customer happiness and loyalty, and boost productivity. Businesses can use SSTs as a differentiator to boost reputation through technology advancement.

Digital Cards

The paradigm change in the banking industry from traditional payment methods to the digital age trend has proven to be a source of profit for banks by lowering operating costs and invariably improving their financial performance (Van, Uyen, & Phuong, 2016). A credit card can be thought of as nothing more than a token provided by a financial institution that allows the holder to borrow money, typically at the point of sale. As has been amply established in economies where cards are a common tool for the settlement of financial transactions, credit cards are also seen as devices that can support the promotion of financial inclusion. Financial organizations utilize credit card incentives to promote the use of credit cards. However, this has pushed buyers to make impulsive purchases (Munyoki & Okech, 2017).

According to Chakravorti (2016), people who use credit cards often get rewards including dispute resolution services, frequent flier miles, and interest-free payday loans. This incentives policy is thought to attract new users, hence boosting uptake. Credit cards are favored payment methods over cash because they offer additional security features and restrict consumer liability in the event of fraudulent use. According to Gurusamy (2017), credit cards are a viable alternative to cash and checks.

Back Office Automation

Like any other company, commercial banks have a back office that supports front office activities. Despite the fact that back office staffing varies by industry, teams often include administrative and support staff. Stakeholders in the back office rarely deal with customers directly. Automation is the replacement of human operators with devices like computers to control industrial machines and processes (Endsley, 2017). One approach firms could take to reach the aforementioned performance goals is to automate procedures. It is one method of enhancing performance while cutting costs.

Digital solutions have improved many of the front-end, customer-facing activities used by banks. For instance, online banking provides customers with a great deal of ease, and the popularity of mobile payments is gradually reducing the need for cash. However, far too many banking procedures still rely on personnel and paper. Thousands of individuals frequently work in back offices handling client inquiries (Dias, Patnaik, Scopa, & van Bommel, 2017).

This extensive manual processing is expensive, slow, and has a significant potential for error. It can also produce inconsistent results. IT provides solutions that can prevent these back-office processes from incurring unnecessary costs and mistakes. According to research, there is a big chance to enhance the amount of automation in back offices. By redesigning their IT architecture, banks can create much smaller operational units to handle value-adding tasks, such as sophisticated operations like deal origination and manual duties like financial reviews.

Point of Sale Terminals

The introduction of Personal Identification Numbers (PIN) and chip-embedded payment cards as a result of increased financial digitalization has increased the use of point-of-sale (POS) devices, which are used to process transactions using ATM (debit/credit/other) cards. Both the volume and the value of transactions have increased as a result of the widespread use of POS terminals. In direct proportion to the adoption of cutting-edge technology, it is anticipated that the need for POS machines would continue to rise.

One technology advancement that has been adopted widely in the banking sector is point of sale. When a bank or credit card is swiped through a POS, the customer's financial information is captured (passed through a magnetic stripe reader). Banks claim that POS is more practical and cost-effective than retail payment offices. In countries where retail payment transaction technologies are widely adopted, revolutions in retail payment facilities had a significant impact on bank performance (Iftekhar, Schmiedel & Song, 2017).

Microfinance Institutions Financial Performance

Microfinance institutions begin like other SMEs and progress through the five phases of small business development, evolving from a straightforward company to a complex organization with an intricate web of services and tools. These businesses alter in size, geographic reach, product variety, and complexity throughout the growth path. Therefore, the ongoing expansion of microfinance institutions offers potential for capturing unmet consumer demand for microfinance services in our nation as well as the unmet customer needs of rivals (Churchill, 2007). Given the potential and advantages of microfinance in Kenya, concerns have been raised about how to further the sector's expansion. Increasing rivalry, diversification of goods, connection to private and commercial institutions, and increased breadth and depth of current Micro Finance Institutions are all indicators of industry expansion (Mugo, 2012; Mbogo & Ashika, 2011).

As long as there is a portion of the population living in poverty, there will be a pressing need for microfinance to offer them chances to boost their economic activity, encourage their entrepreneurial spirit, make employment easier, and enhance the quality of their lives as well as the lives of those in their community. Therefore, increased access to microloans has the potential to alter the future of underprivileged communities. Millions of these loans have the power to completely alter an economy. By tracking and examining the following quantitative performance characteristics over time, it is possible to comprehend how financial innovation affects the expansion of Micro Finance Institutions (MFIs). These include changes throughout time in the amount of products and services the company provides to its clients, as well as alter the characteristics and categories of financial products. Similar to this, any change in the number of customers or branches of Micro Finance Institutions (MFIs) over time denotes growth. This denotes a growth in market share or the size of the specified market segments (Mbogo & Ashika, 2011; Otieno, 2006).

Innovation may also indicate expansion by altering the geographic scope, the number of branches, or the level of representation in other locations. Last but not least, any financial growth, increase or decrease in the total assets, earnings, loan portfolio, and profitability indexes arising from sales of the new items can also be revealed by changes in the group's financial performance (Mugo, 2012; Otieno, 2006).

Empirical Review

The impact of adopting two types of financial innovations, namely product innovation (such as telephone banking and SMS banking, for example) and process innovation, was examined by Mabrouk and Mamoghli (2016) in their study on dynamics of financial innovation and performance of banking firms: context of an emerging banking industry in the United Kingdom. On the effectiveness of banks, magnetic strip cards (debit, ATM, and credit cards), automatic cash dispensers, automated teller

machines, electronic payment terminals, and others. Both descriptive and inferential statistics were used in the study's descriptive research design. They looked at two adoption behaviors: those who adopted financial innovations first and those who imitated others who did so. They discovered that process initiative has a favorable impact on efficiency and profitability whereas first mover initiative in product innovation enhances profitability. Banks that copy others' strategies are less successful and effective than pioneers.

Malek, Shabudin, and Mohtar (2017) concentrated on the banking agent's moderating effect on Malaysian commercial banks' performance in terms of financial inclusion. It was done using a descriptive research design. Agent characteristic, liquidity, security, and product services are the four factors that control the moderating effect of the banking agent because they can each have a distinct impact on the performance of financial inclusion. It's probable that a banking agent's impacts on the four elemental variables will vary from one another. To meet consumer demand when conducting everyday business, the agents must maintain a balance of sufficient cash in the drawer or even their e-money float balance. A balance is absolutely necessary for an agent to have; otherwise, they risk running out of cash or electronic float and being unable to meet the needs of the customer.

Hussein (2019) looked into how financial innovation affected deposit-taking Micro Financial Institutions' financial performance. A descriptive survey research design was used for this investigation. The survey had seventy-four respondents from four microfinance institutions in Thika Town that accepted deposits. Data was gathered by the distribution of questionnaires to the respondents, and it was then compiled using descriptive and inferential statistics. Descriptive statistics were used to evaluate primary data using SPSS software, which also summarized and tabulated data. The study's conclusions showed a favorable correlation between financial success and the two innovation variables, organizational innovation and product innovation.

In their 2018 study, Abdullai and Micheni looked at how internet banking affected how well commercial banks operated in Kenya's Nakuru County. A cross-sectional research design was used for this investigation. There were 56 employees of commercial banks who made up the research population. The report used a census survey because banks are typically tiny. Using standardized questionnaires, data was acquired. According to the report, Internet banking significantly improves the operational effectiveness of commercial banks. However, Internet banking alone does not improve financial efficiency, necessitating the addition of additional factors.

The effect of online banking on Kenya's commercial banks' financial performance was examined by Kombe and Wafula in 2015. The study utilized a descriptive survey. 31 employees of KCB, Mombasa Kenya Treasury Square were the target population. The data was gathered through questionnaires, and it was then statistically analyzed. The study found that rather than cost savings, the impact of ICT adoption on banking sector productivity related more to time savings and quality enhancements. However, the analysis used simple random sampling, which is limited to accession.

Abong'o (2016) looked at how mobile phone banking affected Kenya's commercial banks' performance. The descriptive analysis method was used. The findings indicated that the safe holding and transfer of money from one owner to another was not a significant predictor of bank efficiency. However, the performance of banks has significantly impacted the exchange of money in many ways including mobile banking and investments. However, cluster sampling, which is more susceptible to sampling error, was used.

The impact of agency banking on the performance of a few selected banks in Nairobi County was examined by Musau and Jagongo (2015). The research design used in the study was descriptive.

Four banks in Kenya that provide agency banking services were the focus of the investigation. The study's conclusions show that the outlets' access to liquidity had an impact on banks' performance in addition to aggravating clients. The cost and security of agency infrastructure were also found to have a significant impact on banks' performance. The study's conclusions might not apply to the entire banking sector because it only used a descriptive research design and only focused on four banks.

In their 2018 study, Njoroge and Mugambi looked at the impact of electronic banking on the financial performance of Kenyan commercial banks, specifically the branches of Equity Bank in Nairobi's Central Business District. As of December 2015, there were 500 Equity Bank workers spread over 10 branches in Nairobi. The study used a descriptive research approach, and the data was analyzed using SPSS. The analysis came to the conclusion that mobile banking had lowered the bank's own overhead costs and transaction-related costs while increasing accessibility to fundamental financial services. The difficulties encountered with ATM usage by customers made a major improvement to the banks' financial position.

The quantitative data from Ahmed and Wamugo's (2019) study on financial innovation and the performance of Kenya's 42 commercial banks was described using descriptive statistics. According to the study, the performance of commercial banks in Kenya was positively and statistically significantly impacted by agency banking, mobile banking, internet banking, and ATM banking. The study came to the conclusion that financial innovations such as agency banking, mobile banking, internet banking, and ATM banking considerably and positively impacted the performance of commercial banks. This was accomplished through a number of means, including improved profitability, decreased banking expenses, higher productivity and efficiency, improved customer outreach and customer relationship management, improved accessibility to services, and improved service quality.

METHODOLOGY

The research design for the study was cross-sectional. Target population of the study was seven non-deposit taking Microfinance institutions operating in Mombasa County. According to CBK report (2021) in Mombasa there were 13 MFIs consisting of 6 deposit taking MFIs and 7 non-deposit taking MFIs. The unit of observation was all Microfinance Institutions in Mombasa registered with Association of Microfinance Institutions (AMFI). The management staff of all 13 Microfinance Institutions in Mombasa that were registered with AMFI served as the sampling frame for this study. The study adopted purposive sampling design as it was based on all MFIs in Mombasa. The sample size of 89 was selected by use of Fisher's statistical formula.

Structured questionnaires and a secondary data collection sheet was used to obtain primary data. The researcher carefully scrutinized the data after the questionnaires had been completed and collected to look for any errors, exaggerations, or omissions. Descriptive and inferential analysis were used in the study, and the study's data was examined, presented, and interpreted in accordance with its goals. The goal of descriptive statistics is to show the consistency and pattern of the responses for each of the hypothesized variables. More understanding of the research findings was provided by inferential statistics. Frequency and descriptive tables were used to present the research results. The multiple regression model adopted was in the form of;

$$\hat{y} = \beta_\theta + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where:

$\hat{y}$= Predicted variable (financial performance)

β_θ = Regression intercept

β_1-β_4 are the coefficient of the regression model

X_1= Remote data processing

X_2= Digital cards

X_3= Back office automation

X_4= Point of sale terminal

ε= Error term of the model

FINDINGS AND DISCUSSIONS

Descriptive Results

Descriptive analysis was conducted on the study variables to check the mean and standard deviation. The results were presented in the following tables.

Remote Data Processing

The researcher asked respondents to rate their agreement or disagreement on the various aspects of remote data processing. They were required to do this on a 5 point Likert scale where 1 represented Strongly disagree while 5 represented Strongly agree. The results ware presented in Table 1.

Table 1: Remote Data Processing

	Mean	Std deviation
The MFI has automated loan origination platform for remote access	4.01	.639
The rate of remote account opening has improved over time	4.58	.336
Automated loan origination has reduced the turnaround time for loan approval in the MFI	4.95	.604
The frequency of transactions through the MFI has increased	4.35	.393

The results in Table 1 showed that respondents agreed that the MFI has automated loan origination platform for remote access and that the rate of remote account opening has improved over time as indicated by a mean of 4.01 and mean of 4.58 respectively. Respondents also agreed that automated loan origination has reduced the turnaround time for loan approval in the MFI as shown by a mean of 4.95 and that the frequency of transactions through the MFI has increased (mean=4.35).

Digital Cards

The researcher asked respondents to rate their agreement or disagreement on the various aspects of digital cards. They were required to do this on a 5 point Likert scale where 1 represented Strongly disagree while 5 represented Strongly agree. The results were presented in Table 2.

Table 2: Digital Cards

	Mean	Std. Deviation
MFI credit cards are secure and encrypted with latest technologies	4.60	.644
The debit cards provided clients with choice of withdrawal in any bank digital point	4.15	.434
Credit cards are attractive to retail MFIs because they typically provide higher risk-adjusted returns than other types of loans	4.07	.509
The MFI offers incentives to the customers to motivate them use digital cards	3.11	.402

The results in Table 2 showed that respondents agreed that MFI credit cards are secure and encrypted with latest technologies and that the debit cards provided clients with choice of withdrawal in any bank digital point as indicated by a mean of 4.60 and mean of 4.15 respectively. Respondents agreed that credit cards are attractive to retail MFIs because they typically provide higher risk-adjusted returns than other types of loans as indicated by a mean of 4.07. Respondents were in different to the statement that the MFI offers incentives to the customers to motivate them use digital cards as shown by a mean of 3.11.

Back Office Automation

The researcher asked respondents to rate their agreement or disagreement on the various aspects of back office automation. They were required to do this on a 5 point Likert scale where 1 represented Strongly disagree while 5 represented Strongly agree. The results are presented in Table 3.

Table 3: Back Office Automation

	Mean	Std. Deviation
The transactions processing error rate has been put in control through automation	4.87	.882
The MFI has digitized and automated all its backend work flow	3.98	.526
The human factor in handling repetitive tasks in the back office has reduced	4.82	.471
The back office efficiency has improved through automation	4.42	.209

The results in Table 3 showed that respondents agreed that the transactions processing error rate has been put in control through automation and that the MFI has digitized and automated all its backend work flow as indicated by a mean of 4.87 and mean of 3.98 respectively. Respondents also agreed that the human factor in handling repetitive tasks in the back office has reduced (mean=4.82) and that the back office efficiency has improved through automation (mean=4.42).

Point of Sale Terminals

The researcher asked respondents to rate their agreement or disagreement on the various aspects of point of sale terminals. They were required to do this on a 5 point Likert scale where 1 represented Strongly disagree while 5 represented Strongly agree. The results are presented in Table 4.

Table 4: Point of Sale Terminals

	Mean	Std. Deviation
The MFI has expanded point of sale terminals in all populated urban areas enabling accessibility	3.06	.753
The MFI has provided adequate security around the point of sale terminals	4.10	.748
The point of sale terminals are available whenever needed hence reliable	4.04	.741
The MFI has enhanced 2-step authentication on all transactions through point of sale terminals	2.64	.756

The results in Table 4 revealed that respondents were indifferent to the statement that the MFI has expanded point of sale terminals in all populated urban areas enabling accessibility. Respondents agreed that the MFI has provided adequate security around the point of sale terminals as indicated by a mean of 3.06 and mean of 4.10 respectively. Respondents also agreed that the point of sale terminals are available whenever needed hence reliable (mean=4.04). Respondents disagreed to the statement that the MFI has enhanced 2-step authentication on all transactions through point of sale terminals (mean=2.64).

Regression Analysis

The data was used to regress financial performance on remote data processing, digital cards, back office automation and point of sale terminals. The results of regression analysis are presented in the following sub-sections.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.681[a]	.463	.417	1.067842

a. Predictors: (Constant), Remote data processing, Back office automation, Digital cards, Point of sale terminals

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The regression results in Table 5, showed a moderate regression between financial process innovation and financial performance of MFIs. In the model summary, the R^2 is 0.463 indicating that predictors explain 46.3% change in financial performance of microfinance institutions.

Table 6: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1995.148	4	498.787	16.621	.000[b]
	Residual	2310.635	77	30.008		
	Total	4305.783	81			

a. Dependent Variable: Financial performance

b. Predictors: (Constant), Remote data processing, Back office automation, Digital cards, Point of sale terminals

From the ANOVA results in Table 6, it was established that the significance value in testing the reliability of the model was obtained as 0.000 which is less than 0.05, the critical value at 95% significance level. Therefore, the model is statistically significant in predicting the relationship between financial process innovation and financial performance of MFIs.

Table 7: Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
(Constant)	12.064	4.201		2.871	.000
Remote data processing	.489	.201	.168	2.432	.004
Back office automation	.294	.137	.056	2.145	.000
Digital cards	.319	.150	.083	2.126	.004
Point of sale terminals	.423	.209	.175	2.024	.010

a. Dependent Variable: Financial performance

The derived regression coefficients of the model are:

$$Y = 12.064 + .489X_1 + .294X_2 + .319X_3 + .423X_4$$

The regression results showed that independent variables had significant value below 0.05 meaning that they were all significant. From the results, it showed that holding all factors constant at zero, the change in financial performance of MFIs would be 12.064. Further, the regression results showed that a unit change in remote data processing would lead to an increase in financial performance of microfinance institutions by 0.489. A unit change in back office automation would lead to 0.294 unit change in financial performance of MFIs. Further, a unit change in digital cards would lead to 0.319 unit change in financial performance of MFIs and a unit change in point of sale terminals would lead to an increase in financial performance of Microfinance institutions by 0.423.

Discussion of Key Findings

The regression coefficient results was used to achieve the study objectives. This was achieved by considering the P-values that are associated with the relevant regression coefficients and t-values. The initial objective of the study was to find out how remote data processing affect financial performance in Microfinance institutions. The regression results for remote data processing was β_1=0.489, t=2.432, and p<0.05 showing that there was a positive and significant relationship between remote data processing and financial performance of MFIs. A unit increase in remote data processing costs would result in an increase in growth of MFIs by 0.489. It was concluded that a null hypothesis

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that remote data processing has no significant effect on financial performance of MFIs is rejected.

The second objective of the study was to investigate how back office automation affects financial performance of MFIs. According to the regression analysis's findings ($\beta 2 = 0.294$, $t=2.145$, $p<0.05$), back office automation significantly affects financial performance of MFIs. According to the study, a unit change in back office automation would lead to 0.294 unit change in financial performance of MFIs. The null hypothesis that back office automation has no significant effect on financial performance of microfinance institutions is, therefore rejected since the p-value is less than 0.05.

Third objective of the study sought to investigate the effect of digital cards on financial performance of Microfinance institutions. According to $\beta 3 = 0.319$, $t=2.126$, and $p<0.05$, the regression analysis results showed a substantial positive relationship between digital cards and financial performance of MFIs. According to the findings, a unit change in digital cards would lead to 0.319 unit change in financial performance of MFIs. The null hypothesis that digital cards has no significant effect on financial performance of MFIs is, therefore rejected since the p-value is less than 0.05.

Fourth objective of the study sought to establish the effect of point of sale terminals on financial performance of Microfinance institutions. According to regression analysis, point of sale terminals and financial performance of MFIs has significant and positive connection ($\beta 4 = 0.423$, $t=2.024$, and $p<0.05$), which implies that a unit change in point of sale terminals would lead to an increase in financial performance of Microfinance institutions by 0.423. The null hypothesis that point of sale terminals has no significant effect on financial performance of MFIs was therefore rejected since the p-value was less than 0.05.

CONCLUSSIONS AND RECOMMENDATIONS

The study concluded that the Micro finance institutions have enabled remote access to loan origination platform through automation. This implies that clients can originate loan autonomously without visiting the MFIs premises. This has contributed to an increase in remote account openings and loan applications. The study concludes that automated loan origination has reduced the turnaround time for loan approval in the MFI and that the frequency of transactions through the MFI has increased.

The study concluded that MFI has taken measures to encrypt credit cards with cutting-edge technologies thus rendering them secure. Also the debit cards provide clients with choice of withdrawal in any bank digital point. This increases ease of banking by clients and makes the MFI services closer to customers. The study concludes that credit cards are attractive to retail MFIs because they typically provide higher risk-adjusted returns than other types of loans. However, the MFIs do not offer incentives to motivate customers to switch to digital cards usage.

The study concluded that the MFIs automation has reduced transactions processing error rate. This has been possible because of scaled down human involvement. The MFI has digitized and automated all its backend workflow and the human factor in handling repetitive tasks in back office operations has reduced. The MFIs back office efficiency has improved through automation.

The study concluded that the point of sale terminal controlled by the MFIs have been installed in all populated urban areas thus enabling accessibility. Further, it is concluded that these point of sale terminals have been provided with adequate security to minimize insecurity incidents and the point of sale terminals are available nay time they are needed by customers hence reliable. The study concludes that the MFI has not taken extra security measures like enhancingc2-factor authentication on all transactions through point of sale terminals.

The study recommended that the technologies enabling remote access to loan origination needs to be on board by the MFIs. This is because the core business of MFIs is to give loans to customers and

by enabling remote loan origination would improve growth of MFIs positively. The account opening should be automated so as to enable new customers to open and manage accounts with ease. The study recommends that the management of MFIs should automate loan origination with a view to reduce the turnaround time for loan approval in the MFI.

The study recommended that the management of MFIs should take measures to encrypt credit cards with cutting-edge technologies so as to render them secure. The debit cards should be adopted in the MFIs as they provide clients with choice of withdrawal in any bank digital point. This increases ease of banking by clients and makes the MFI services closer to customers. The credit cards should be made attractive to retail MFIs since they typically provide higher risk-adjusted returns than other types of loans. The MFIs should offer incentives to motivate customers to switch to digital cards usage.

The study recommends that the MFIs should automate its processing as they were found to reduce error rate of transactions processing. The reduction in error rate will be occasioned by minimized human intervention in the core functions. In addition, the MFI should digitize and automate all its backend workflow. This would improve efficiency and minimize operations costs hence improving growth of MFIs.

The study recommended that management of MFIs should install point of sale terminals in all area with high population and shopping centers so as to enable wider accessibility of MFIs services. The point of sale terminal should be well guarded through round the clock security so as to minimize chances of the terminal tempering resulting in theft of customer's money. The management of MFIs should ensure that the point of sale terminals are available as and when needed and additionally the MFI should enable 2-factor authentication in all point of sale terminal transactions so as to protect the client's money.

Suggestions for Further Research

The study has been limited on financial process innovations and financial performance of MFIs in Mombasa County. Moreover, insights have been provided to offer further research directions for financial process innovations in the MFIs sector. By conducting extra research, more effective ways can be developed to manage the relationship between the financial process innovations and growth of MFIs. In the past decade or so, great changes have happened in the financial process innovations and it is expected that financial innovations will continue to evolve in the future when more research has been undertaken and new findings have been reported.

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