

**THE RELATIONSHIP BETWEEN FINANCIAL INNOVATIONS
AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN
KENYA**

BY

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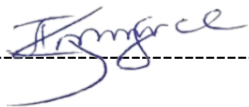
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DECLARATION

This research project is my original work and has not been presented for the award of any other degree/diploma in any other university.

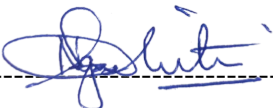
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DEDICATION

This research endeavor is dedicated to my devoted wife and children, who have made major sacrifices to allow me to complete it. Their encouragement, support, and excitement motivated me to accomplish my objective.

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LIST OF ABBREVIATIONS

ATMs: Automated Teller Machines

BPM: Benchmarking Performance Measurement

BRP: Business Process Re-engineering

CBK: Central Bank of Kenya

KENEX: Kenya Exchange Service Bureau

MFIs: Micro Finance Institutions

NPV: Net Present Value

PLC: Public Limited Company

ROA: Return on Assets

ROE: Return on Equity

SACCOs: Saving and Credit Cooperative Organizations

SMEs: Small and Medium Enterprises

SPSS: Statistical Software for Social Scientists

SWIFT: Society for Worldwide Interbank Financial Telecommunication

TQM: Total Quality Management

SBM: Standard Bank of Mauritius

ABSTRACT

The current financial crisis in Kenya's banking sector, notably the collapse of Imperial Bank, followed by the problem of Chase Bank, may be related to the increased competition in the financial sector. Competition from Safaricom plc financial services (M-pesa and Mshwari) has resulted in a dramatic shift in the banking sector's profitability as a consequence of this new competition. Therefore, there is a need for constant investment and innovations by banking institutions for them to retain and attract new customers while enhance their performance. Commercial banks in Kenya have improved their financial performance by implementing new financial innovations, according to this report. The research concluded that Kenyan banks' financial performance was affected by mobile banking, online banking, agency banking, and electronic payments transfers. In the model, the size of the bank was employed as a variable to regulate. This study made use of descriptive research methods. Banks in Kenya were the target audience. As of 2020, there were 41 banks in Kenya, and each one supplied the information requested. Financial innovation was studied via an in-depth survey that drew on information from the CBK as well as audited bank annual financial statements from 2016 to 2020. Hypotheses were investigated using regression and correlation analysis to uncover a connection between financial innovation and ROA. The R² was 0.904, which suggested that the chosen independent variables were responsible for 90.4 percent of the variance in ROA variation. Moreover, the results show that even if all other variables remain constant, ROA will fall by 0.612 shillings. The ROA is increased by 0.523 shillings per unit of mobile banking usage while all other variables are maintained constant. ROA is increased by 0.543 shillings per unit usage of internet banking when all other circumstances are equal. While other conditions remain unchanged, a single usage of agency banking boosts the ROA by 0.506. The ROA rises by 0.601 shillings while the size of the bank remains unchanged. Financial performance has benefited greatly from the company's decision to make an investment in financial innovation. No significant influence on ROA was seen with EFT. The research advises that policymakers create an atmosphere that encourages banks to experiment with new financial products, which improves their financial performance. Managers and directors of commercial banks should also work on improving their financial innovations coverage in a bid to enhance their performance and to remain competitive in the ever changing environment.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

As a result of the global financial system, the banking industry has undergone a number of changes (Gitau, 2011). Kenya banking sector is also adopting various innovation processes in order to enhance financial inclusion owing to globalization in the ways of doing business across the world. Financial innovation has resulted from change in technology and globalization of financial systems. According to Nofie (2011) innovations in financial market has resulted in better service delivery through reducing cost of offering financial services. Aliyu and Tasmin (2012) concluded that innovation in business result to enhanced performance because of improved service delivery and introduction of wide range of new products. There are several theories which back financial innovation. This study used Constraint-induced theory by Silber (1983). The hypothesis asserts that financial innovation is driven primarily by the desire to maximize profits for financial institutions.

The circumvention innovation theory of Kane (1981) illustrates how financial institutions should cope with management failure and profit decrease in order to minimize possible losses. The transaction cost hypothesis of Niehans as applied to innovation According to the hypothesis, the most essential aspect in financial innovation is the lowering of transaction costs. Technology advancements have led to an increase in transaction costs, and financial innovation is viewed as a response to this.

Commercial banks face many risks that affect their overall performance. These risks include interest rate risks, credit risks, exchange rate risks, operation risks and liquidity

risks among others (Nyarige, 2012). This means that banks and other financial institutions must always explore for new ways to decrease their production costs, fulfill the needs of their clients, and boost earnings. As financial sector rivalry heats up, banks are being forced to adapt in order to stay relevant. For instance, M-pesa and Mshwari services have significantly influenced the role of banks in financial intermediary and hence need for more innovative products to compete from the services offered by Safaricom plc. The commercial banks undertake all of this in order to keep up with their competitors and not fall behind (Gitau, 2011). New technologies are being studied to see whether they have an impact on financial organizations' overall performance.

1.1.1 Financial Innovations

Financial innovation, according to Lawrence (2010), refers to the development and delivery of new finance solutions via new techniques and procedures. Financial innovation is defined by Lerner and Tufano (2011) as the introduction of new financial instruments targeted at either removing or decreasing the financial sector's problems. Financial innovations thus, are the developments that enhance the financial institutions and markets through the use of modern telecommunications technologies. Financing innovations are a means of improving the performance of a bank and ensuring that the bank maintains an advantage in the market, according to Batiz and Woldesenbet (2016). Financial innovation, according to Noyer (2017), is the process of creating new products for the market. According to all of these definitions, financial innovations should result in improved products and processes.

Innovations may be categorized in three forms; product, institutional and process innovations (Willcocks & Lacity, 2016). Institutional form relate to advancement in legal

setup, development of financial intermediaries, enhancement in business structures, reduction of barriers, and setting up new service structure. Process innovations cover the formulation of new business processes such as the use of client data management software and computers in accounting leading which result in market expansion and increased efficiency. Product innovation encompasses techniques to boost efficiency or to respond to changes in the marketplace. Commercial banks are continually seeking for methods to increase efficiency and ease of use in order to maximize earnings. In this study, the independent variables of mobile banking, agency banking, internet banking, and electronic banking will be studied using a 5-point Likert scale.

1.1.2 Financial Performance

According to Brigham and Houston (2014) how an organization attains its objectives determines its level of financial performance. Basic organization goals incorporate investor wealth creation, consumer loyalty, profit maximization, and overall industry positioning. Hence, all organization activities should be tailored toward improving the performance. Chesire and Kombo (2015) described performance as a way of achieving financial and market-based objectives over time. Employees' and supervisors' performance is a constant and continuing process, Armstrong (2009) discovered. Their responsibility is to be a partner in a system designed to enable people to achieve what they need to. According to Harzing (2010), performance may reflect fluctuations in market size or financial situations, rather than just sales statistics.

In Aliqah (2012)'s view, a firm's success in comparison to its rivals may be judged by its market share, and a rise of sales in a sluggish industry serves as a motivation to expand the market share of a company. In an effort to get a larger part of the market, businesses

position themselves in relation to their rivals. Economies of scale have also worked for large organizations in terms of cost advantage. Chesire and Kombo (2015) found that the performance of the organization can be categorized in to three in respect to the company's results; shareholder return, financial performance and commodity market performance. Based on an organization's ability to withstand the market, the market's assessment of its protection and its reputation, a firm's overall performance is evaluated (Tan et al., 2009).

Various criteria have been used to measure financial performance in past research. Profitability, sales growth, sales margin and average yearly increase are some examples of returns on investment (Li, Nathan & Rao, 2010). There are several novel approaches to performance management, according to Kaplan & Norton (1992). An organization's performance management strategy includes the Balanced Scorecard, business process reengineering (BPR), quality management systems like Total Quality Management (TQM), and business process management (BPM). In this study, the return on assets will be utilized to determine financial success.

1.1.3 Relationship of Financial Innovations and Financial Performance

There has been an increase in financial institutions' use of innovation as a means of improving their operational performance (Gitau, 2011). Commercial banks employ them to get an edge over their competitors in a highly competitive industry. To stay relevant in the client marketplaces, several companies are replicating the latest advancements in the business. In general, commercial banks' financial performance is being boosted through innovations, resulting in higher earnings, better margins, and more positive growth. Mobile banking is the most important contribution to financial success, according to

Kurgat (2017). This is based on levy and charge use and the ease of mobile banking. He shows how mobile banking in Kenya has been used in m-banking, paying bills, loan application, statement generation, internal transfer, and standing order instruction.

The transaction cost hypothesis of Williamson (1975) states that innovation is targeted at lowering transaction costs, which will lead to increased financial performance. According to resource based view by Pfeffer and Salancik (1978) innovation is achieved by the bundle of resources owned by the business entity. Every business entity is endowed with different types of resources which make them competitive in achieving the goals by remaining competitive. The theory of social cognitive by Davis and Luthans (1981) emphasizes the significant of the external environment due to its effect on the human behavior which has an ultimate influence on innovation.

1.1.4 Commercial Banks in Kenya

For investors and enterprises alike, commercial banks play an important role by providing loans to help them raise the capital required for investment objectives (Were & Wambua, 2014). They are involved in activities such as allowing deposits and interbank borrowing in order to pool those funds for economic gain in activities such as lending, extending advances and investing. According to World Bank report (2021) about 35% of GDP is provided as domestic credit by financial institutions. The industry is regulated by the CBK under the banking laws established through the Banking Act. The industry comprises of three tiers of banks namely tier one, tier two and tier three banks and all make up a total of 42 registered commercial banks.

Classification of banks depend on whether they have been operational over a period of time thereby accumulating substantial assets worth billions of cash and also have significant customer base. Classification of these banks in terms of percentage is as follows; tier two command about 33.03% of the financial market compared to 58.2% of tier one and about 8.77% of tier three (CBK, 2019). Were & Wambua (2014) found that the basic method of classifying banks is calculating a weighted composite index of the bank reserves and capital, assets and profitability taking in to considerations other economic parameters. According to Obulutsa & Merriman (2014) dynamism in the micro and macro environmental factors in the banking industry has affected bank performance over the decades. Changing of business strategies and embracing new technology is critical for every financial institution in order to enhance competitiveness.

1.2 Research Problem

Innovation is a critical issue of major concern for many business entities in the world. It is a strategy many commercial banks are using to rebuild the global financial systems which had collapsed. Many commercial banks have turned to innovation to stay ahead of the competition. Innovation is a key factor globally and has continuously gained recognition. Hansen (2005) suggested that advances in financial intermediation result in more efficiency and variety, which in turn enhances productivity and the economy's development potential.

The current financial crisis in Kenya's banking sector, notably the collapse of Imperial Bank, followed by the problem of Chase Bank, may be related to the increased competition in the financial sector. Competition from Safaricom plc financial services (M-pesa and Mshwari) has resulted in a dramatic shift in the banking sector's profitability

as a consequence of this new competition (CBK Annual Report, 2019). Therefore, there is a need for constant investment and innovations by banking institutions for them to retain and attract new customers while enhance their performance (Gitau, 2011). In this view, the research wishes to look at whether financial innovations in the banking industry have influenced their financial performance.

Sewang et al (2014) sought to know whether innovations had any effect on ROA of SMEs in China. From the findings, innovation had an insignificant effect on ROA of SMEs. Achary (2011) investigated how financial innovations affect performance of MFIs in India. Microfinance institutions in India benefited from financial innovations, according to the results of this study. Deposit banks in Nigeria were examined by Henry & Ruth (2020) for the impact of financial innovation on their ROE. Findings showed that the relationship of (online banking, mobile banking) and ROE was positive.

According to Ogweno, financial improvement has a substantial effect on the success of microfinance enterprises in Kenya (2019). No statistical correlation was found between agency banking and ATM locations and the ROE of regulated MFIs, according to the findings of this study. A research by Moki, Ndung'u, and Kinyua (2019) looked at how deposit-taking SACCOs in Nairobi County fared financially because of their innovative strategy. SACCOs' performance was shown to be highly influenced by their innovation approach, according to the results of the research. Kenyan commercial banks were studied to see whether financial innovation had an impact on their performance. According to the data, Kenyan banks' success was strongly linked to innovation.

Financial innovation's impact on financial performance has not been conclusively studied by multiple academics, which warrants additional investigation. To find out whether financial innovation and bank performance are connected, the researchers carried out their research in this area. The study therefore, answers' the following question; is there any relationship between financial innovations and financial performance of commercial banks in Kenya?

1.3 Research Objective

To determine the relationship between financial innovations and financial performance of commercial banks in Kenya.

1.4 Value of the Study

Researchers and academics in the financial sector would benefit from research recommendations and may broaden their focus beyond the recommendations to cover gaps in the literature on changes in the financial sector. In this study, Kenya's financial innovation and performance are taken into account. Since the findings add to the existing body of knowledge, a literature review is possible.

Findings from the study benefit the commercial banks regulator to develop policies that would affect banking industry as well as policies that enhance competitiveness amongst firms. This is in terms of subsidies, working permits for expatriates among other policy areas. Research also gives helpful information on the problems and advantages of finance innovations, which helps policymakers develop laws and regulations that encourage innovation in the banking business.

An important consequence of the study's results is that they provide managers at commercial banks concrete proof of effective techniques they may utilize to beat their rivals. For strategists and managers, the results give empirical information for decision-making and planning reasons when pursuing financial innovations as a competitive weapon in their firm.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter includes a discussion of the theoretical overview and empirical investigations connected to financial innovation. It is separated into parts that deal with theoretical basis, factors of financial performance, empirical examination, conceptual framework, and, finally, a summary of literature.

2.2 Theoretical Review

This generally provides a theoretical underpinning for how financial innovations are linked to the success of companies. A total of three theories are investigated in this study: The Transaction Cost Innovation Theory, the Circumvention Innovation Theory, and the Theory of Constraint-Induced Financial Innovation.

2.2.1 Constraint-Induced Financial Innovation Theory

Silber (1983) developed the theory in his constraint model. The theory points out the maximization profit in financial firms are the primary reason for financial innovation. However, there are restrictions on the process which hinder the process of achieving profit maximization in a firm. The handicaps are externally based, such as policies and internally based, such as leadership style and organization management. According to the theory, the limitations and restrictions guarantee stability in governance and reduce the efficiency of the business organization, and so the commercial organization should strive toward cutting them off. Financial performance may be improved as a result of the constraints that exist both within and outside. It underlines the difficulty of bringing new ideas to market.

The approach discusses financial innovation from a microeconomic perspective and explains why financial institutions come up with new ways of getting income despite the changing landscape (Ongwen, 2015). Financial innovation involves a series of processes carried out by any financial institutions and consists in creation, promotion and adoption of new processes, products and products of different technologies or some changes to how the financial activities are carried out. It is relevant in explaining what weaker or smaller firms should do to succeed, which is engaging in more innovation. Financial constraints are viewed to reduce the ability of the firms to innovate, and so firms should work on lessening the limitations imposed on the financial institution. Silber (1983) argues that financial organizations should innovate in order to increase revenues.

2.2.2 The Transaction Cost Innovation Theory's

Niehans introduced this model in the year (1983). It's their belief that financial innovation is primarily driven by a reduction in transaction costs. When technical developments cut transaction costs they perceive financial innovation as a reaction. Improved financial services and an increase in financial innovation are attributed to a decrease in transaction costs. It studied financial innovation from a microscopic economic structure change perspective. The primary motivation for financial innovation is to lower transaction costs, but the model indicates that a secondary goal is to generate profits for financial institutions. The main aspect of innovation in financial firms is to reduce business costs which are possible by the use of technology asit in reducing the transaction costs.

The ability to lower down the transaction costs results in upgrading the financial services and innovation in the financial institutions. The money related innovations are argued to decreases the costs involved in sales. The theory is relevant to information and technology

set up as it considerably lessens the transaction costs, as it is helpful in the utilization of data, effective coordination and administration (Willcocks & Lacity, 2016). As an example, mobile phones that connect to the internet may minimize the cost of exchange by allowing remote access to the company's internal database. It is relevance in agency and mobile banking as they lower the cost of operation and later improves the profitability of the bank. The theory offers a framework for assessing the influence of innovation on financial company results.

2.2.3 Circumvention Innovation Theory

Kane's work contributed to the development of the theory (1981). In his hypothesis he tries to explain how the government regulations and controls forms role in the financial sector. The controls or regulations are in the form of tax imposed in property in financial institutions which reduces the potential profit of the firm. The theory argues against the regulations that impact the financial market positively in the market economy and the main aim is the regulative function existing between deposition of regulations by the federal government as well as the exogenous market forces such as the changing depositing environment, dynamic technological change and the uncertainty in prospective financial developments. It means that the product dimension occurs as a result of innovation to adapt or circumvent the regulations or controls.

According to this hypothesis, the financial institution's profitability is harmed by various types of government rules and restrictions. Management and market innovation is a continuous process which entails a fight between the political forces and economic forces. The financial industry has strict regulations compared to other sectors. To understand what financial institutions need to deal with, it is important to consider the

failure of management and the decrease in profit enforced by the government in order to limit possible losses (Achieng et al., 2015). Business innovation is a result of circumvention of government regulations and earning a profit. However, the theory differs from reality as it assumes that regulation innovation is towards the direction of reinforcing law while in a real sense, it's toward liberal market innovation. Since it creates the foundation for innovation genesis and study into control of innovation and their dynamic connection, it is regarded superior than Silber's theory.

2.3 Determinants of Financial Performance

2.3.1 Online Banking

In Kenya internet banking innovation date back in 2008 when the first bank I&M was granted the charter to deliver online banking services (CBK, 2009). There on a lot of banks have embraced online banking making it possible for banking services delivery to people in the Diaspora. About 30 of Kenya's 42 commercial banks provide online banking services and are members of SWIFT and KENEX, respectively (CBK, 2019). Pooja and Singh (2011) argued that Online banking plays a significant role marketing, customer retention and improving service delivery and this has a real impact on financial institutions overall performance.

2.3.2 Electronic Funds Transfer

The Banking sector is becoming competitive because of uncertain economic climate and this has challenged banking institutions to embrace ICT in their process and services in order to gain a competitive edge (Aduda & Kingoo, 2012). According to Steven (2002) Electronic banking can be termed as way in which telecommunication network has been

used to offer banking services to customers. For instance, use of ATMs has increased customer convenience as well as improving efficiency in service delivery and this has enhanced profitability in banks due to increased transactions. Agboola (2006) found that ICT has improved institution reputation by enhancing process and services efficiency.

2.3.3 Agency Banking

Agency banking plays a significant role by bringing banking services closer to the clients thereby cutting down expenses clients suffer as they look for financial services which may be far away from their locality (Kasekende, 2008). For instance, it may be quite expensive for banks to set up branches in every corner of the country especially in those areas where population density is low. Agency banking is favorable because it's less expensive to establish an agency compared to opening a branch on basis of infrastructure and staffing costs. These agencies also offer business opportunities to the locals who may benefit from operating the agencies and thereby promoting business and economic growth. Mwenda (2013) argues that agency banking is good for both institutions and agents in business perspective since it enhances the profitability of financial institution through increased outreach of financial services.

2.3.4 Mobile Banking

Mobile banking, according to Anyasi and Otubu (2012), is the practice of utilizing a mobile phone to carry out banking services. Nasikye (2009) terms mobile banking as a way of doing financial transaction through use of mobile phones which are linked to clients account. M-banking is quite convenient in offering real time financial services at any point across the world at affordable cost and its beneficial to the institution and

consumer in different perspectives. Okon and Amaegberi (2018) found that mobile banking enhance profitability of financial institutions through increased money transactions that render commission and in other way reduce overhead expenses.

2.3.5 Firm Size

According to Nielsen (1974) company size is the total worth of an entity. Mathur and Kenyon (1997) in their studies concluded that big firms have a better chance to access finances compared to the smaller firms meaning when the organization is large it generates more revenue hence being in a better and stable financial position while on the contrary smaller firms generates smaller revenue hence making the firm's financial position not to be stable and hence unable to access the financial resources and lower cost. Omondi (2013), Hogarty (2012), and Ndungu (2014) used the total assets possessed by the business as a measure of the size of the corporation. Scales of likert will be used to evaluate statements about business size.

2.4 Empirical Review

Commercial banks' performance has been influenced by financial innovation in a mixed way, according to study. Previous research works done global, regional and local have yielded mixed results and therefore, need for more research in the area.

The financial impact of innovation on China's small and medium-sized Sped firms was examined by Sewang et al. (2014) in a global study. Between 2009 and 2013, the study was completed. A combination of secondary and primary data was used to examine the 159 small businesses in the research. Regression analyses were performed on study data using multiple linear models. The effectiveness and originality of mobile money transfer

services were evaluated. It was found that innovation has minimal influence on the profitability of small businesses, according to their findings. Because the study's results may not hold up in Kenya, contextual information is lacking.

Achary (2011) researched on how financial innovations affected the ROA of MFIs in India. The research population consisted of 112 MFIs, and secondary data on study variables were sorted during a nine-year period (2001-2009). Data analysis was done through SPSS software and results were tabulated and discussed. From the study results financial innovations significantly affected the ROA of MFIs in India. He concluded that financial innovation improved the ROA of MFIs in India. Contextual knowledge gaps arise because the study's conclusions may not hold in a Kenyan environment.

Financial innovation in Nigeria has an impact on deposit banks' ROE, according to Henry and Ruth (2020). There were a total of 14 deposit money banks in the survey. Firms' annual reports and accounts were used to get further information. The data was analyzed using panel data regression. Online and mobile banking have a positive link with ROE, according to the study. Adopting financial innovations to increase bank profitability was advocated by the research. This study was done in Nigeria and there is need for more research in Kenya context to see whether the result holds.

According to Ogweno (2019), microfinance institutions in Kenya have been affected by financial innovation. A total of 13 licensed MFIs were included in the study's population as of December 31, 2018. Cross-sectional design was adopted and yearly reports of all 13 MFIs over the period of 5 years were used to gather data (Jan 2014 to Dec 2018). Data analysis led to a use of regression analysis to show how the variables are interconnected.

ROA of licensed MFIs in Kenya has been shown to be unaffected by ATMs or agency banking in the country.

Deposit-taking SACCOs in Kenya's Nairobi County were examined by Moki, Ndung'u, and Kinyua for their financial health (2019). There were 40 registered SACCOs in Nairobi County that were studied in this descriptive research design. In a statistical package for social science, there were tabulations of relevant statistics and explanations of them. For SACCO's overall success, the research found that its innovation approach had a major impact.

Financial innovation has been studied by Korir, William, and Adam (2015) to see whether it affects the ROA of Kenyan banks. Because the population was so tiny, the census approach was used to gather data from every one of Kenya's 44 officially recognized banks. A total of 44 banks' annual reports were analyzed for secondary data. The data was examined using social science statistical tools that can both infer and describe relationships between variables. According to the findings of a recent study, innovation was a critical component of bank performance in Kenya.

2.5 Conceptual Framework

Financial innovation (independent variables) and financial performance are linked in a conceptual framework (dependent variable).

Independent Variables

Dependent Variable

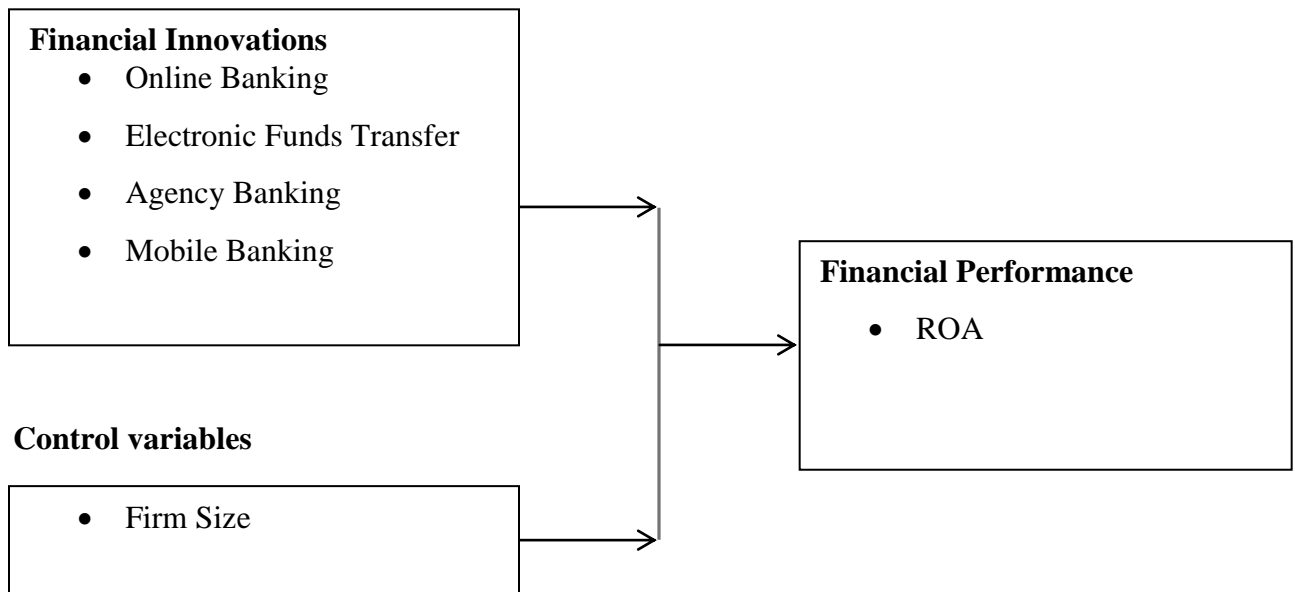


Figure 2.1: Conceptual Framework

2.6 Summary of Literature Review

Section presents the theoretical framework to examine the concept of financial innovation and performance. Three hypotheses have been tested in this study: For financial organizations, the major motivation for innovation comes from the desire to maximize profits. Circumvention innovation theory explains how the government regulations and controls forms role in the financial sector. According to the notion of transaction cost innovation, the primary driver of financial innovation is a decrease in transaction costs.

Various financial innovations are also captured in this section. This study looked at four different techniques of innovating; internet banking, electronic funds transmission, agency banking and mobile banking. Aspects of financial innovation and performance are also explored in publicly available empirical studies. Finally, the chapter summarizes the connection of the variables through a conceptual framework diagram.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

Methodology for achieving study objectives are presented in this chapter. Data collection and analysis are two of the most important aspects of research technique. The following sections were also explored in detail: collection of data and its analysis are included..

3.2 Research Design

Descriptive research was used in the investigation. Saunders, Cooper, and Schindler explain a phenomenon in terms of a certain time period and population (2006). A population or phenomena under inquiry was characterized by this way. Using this method, the researcher may gather qualitative data that evokes meaningful responses and can then generalize their findings over a broader population.

3.3 Population

Target population is the group of components the researcher wants to study and derive conclusions from, according to Mugenda and Mugenda (2003). All of Kenya's registered banks were included in the study's target audience (CBK, 2019). As stated in the study, a random sample of the population was gathered using a census technique (Appendix II).

3.4 Data Collection

Measurements or observations are collected in an orderly manner in order to evaluate the research aim (Kothari, 2004). As part of the investigation, data from primary and secondary sources was gathered. To gather information on a broad variety of creative ventures, structured questions were employed (Appendix D). Questionnaire A asks for

personal and business information about respondents, while Questionnaire B asks about financial innovation objectives. Five years of annual reports from the bank were analyzed for financial performance and company size data (2016-2020).

3.5 Data Analysis

The data was analyzed using both descriptive and inferential statistical approaches. SPSS version 21 was used to organize and analyze the data. Since SPSS's output gives appropriate statistical inference and is often simple to comprehend and implement, using SPSS is recommended above other methods. There were various tables highlighting the most essential statistics from data analysis. Using regression analysis, relationship between financial performance and the various financial innovation strategies was estimated as:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

Where; α , β_1 , β_2 , β_3 , β_4 , and β_5 are coefficients to be estimated; Y is performance measured through ROA, X_1 is online banking, X_2 is electronic fund transfer, X_3 is agency banking, X_4 mobile banking X_5 firm size measured as log total assets, and ε is the error term.

3.5.1 Test of Significance

The F-test and the T-test were used in this investigation to determine statistical significance. When testing the overall significance model, the F-test is employed, but the T-test is utilized when testing the individual significance of each variable at the 5 percent level of significance.

CHAPTER FOUR: DATA ANALYSIS RESULTS AND FINDINGS

4.1 Introduction

This section discusses the study's findings and conclusions. In addition to demographic information, it offers information on the response rate and other basic statistics. The part also provides the results of the investigation in relation to the research goals.

4.2 Response Rate

The response rate is a proportion of the total number of responses received by all participants in a research study. Table 4.1 summarizes the findings.

Table 4.1: Response Rate

Response Rate	Frequency	Percent
Returned	41	100
Unreturned	41	100
Total	41	100

Source: Field Data (2021)

According to Table 4.1, 41 questionnaires were distributed to head of innovations or their representative who were chosen as the sample size for the current analysis. All the 41 questionnaires sent out to respondents were filled and returned, resulting in a 100 percent rate of response. This is above the recommended level of 50% or more, and it agrees with Sekeran and Bougie (2015), who claimed a research having a 50% or more response rate is appropriate for investigation and conclusion drawing.

4.3 Reliability Test Results

The consistency with which an instrument measures its intended function indicates its reliability. Chronbach's alpha, a test for questionnaire internal consistency, was used to make the determination. Data obtained through the questionnaire were imputed into SPSS

and Chronbach’s alpha for the items in the questionnaire generated. Those items that had a Chronbach’s alpha of less than 0.7 which is the threshold would be eliminated from the questionnaire while collecting data for the main study.

Table 4.2: Reliability Test Results

Variables	Cronbach’s Alpha	Critical Value	Conclusion
Mobile banking	0.717	0.7	Reliable
Online banking	0.784	0.7	Reliable
Agency banking	0.741	0.7	Reliable
Electronic funds transfer	0.814	0.7	Reliable

Source: Field Data (2021)

All variables were higher than 0.7 Chronbach alphas, as Table 4.2 shows. This indicates that the questionnaire utilized in this study was very coherent internally. As a result, it was possible to accurately gauge the ROA effect of financial innovation using the survey.

4.4 Demographic Analysis

This section describes the respondents' demographics.

4.4.1 Gender of the Respondent

A question on gender was posed to all participants. Table 4.3 displays the results.

Table 4.3: Gender Distribution

Gender	Frequency	Percentage
Male	23	56%
Female	18	44%
Total	41	100%

Source: Field Data (2021)

According to the data, male respondents numbered 23 (or 56 percent), while female respondents totaled 18 (or 44 percent). In this research, most of the respondents are male.

This also implies that the study was able to get responses from both genders which enrich the study findings.

4.4.2 Age of the Respondents

The purpose of the research was to determine the age of the volunteers. It is essential to understand the age of respondents, since someone's age may affect their research answer.

Table 4.4 displays the results.

Table 4.4: Respondents' Age Composition

Age	Frequency	Percentage
20-29 years	3	7.3%
30-39 years	11	26.8%
40-49 years	17	41.5%
50 and Above	10	24.4%
Total	41	100%

Source: Field Data (2021)

41.5 percent of respondents were in this age range, according to Table 4.4. Twenty-six percent were between the ages of 30 and 39, 24.4% were above the age of 50, and 7.3% were between the ages of 20 and 29. According to the findings, the respondents were relatively young.

4.4.3 Highest Education Level

Participants were asked to identify their greatest educational attainment. Table 4.5 shows the results.

Table 4.5: Distribution of Respondents by Highest Level of Education

Education	Frequency	Percentage
Diploma	1	2.4%
Degree	27	65.8%
Masters	13	31.7%
Total	41	100%

Source: Field Data (2021)

The majority of respondents (65.8 percent) had a degree, while 31.7% had a Masters. Only 2.4% had the highest level of education being a diploma. None of the interviewed respondents indicated a different level of education. These findings suggest that innovation managers among commercial banks are relatively well educated as all of them had achieved at least a diploma education level. High levels of education are essential in a company because they enable an organization to comprehend and resolve its problems.

4.5 Analysis of Study Variables

Descriptive data for each variable analyzed are presented here in percentages, means, and standard deviations in this section.

4.5.1 Mobile Banking

The purpose of the research was to find out how many Kenyan banks use mobile banking. Mobile banking is one of the strategic innovations. Average and standard deviation of mobile banking indicators are shown in Table 4.6.

Table 4.6: Descriptive Statistics for Mobile Banking

Statements	N	Mean	Std. Dev
Your institution's financial position has been boosted by the use of mobile banking.	41	4.24	0.55
Mobile banking has improved customer convenience	41	4.21	0.73
Mobile banking has greatly increased reliability of services	41	4.03	0.63
Increased profitability may be attributed to the lower costs associated with mobile banking.	41	4.45	0.50
Mobile banking services has made it easy for loan application process thereby improving profitability through interest earned	41	4.33	0.53
Overall mean Score	41	4.25	

Source: Field Data (2021)

According to the findings, mobile banking is more profitable since it requires less maintenance (Average=4.45, std. dev=0.5). The findings further revealed that mobile banking services has made it easy for loan application process thereby improving profitability through interest earned (Average=4.33, std. dev=0.53). Respondents further agreed that mobile banking has positively influenced the profitability of their institution (Average=4.24, std. dev=0.55). Additionally, findings discovered that mobile banking has improved customer convenience (Average= 4.21, std. dev=0.73). The findings, furthermore, showed that mobile banking has greatly increased reliability of services (Average=4.03, std. dev=0.63). The overall mean was 4.25 implying that mobile banking is being practiced among banks to a great extent.

4.5.2 Online Banking

Study participants were financial institutions in Kenya that have implemented online banking. Table 4.7 shows the average and standard deviation for several online banking metrics.

Table 4.7: Descriptive Statistics for Online Banking

Statements	N	Mean	Std. Dev
Using internet banking has increased your institution's turnover and profitability.	41	4.00	0.55
Online banking has expanded customer base	41	3.91	0.67
Online banking has lowered the cost of operations	41	3.82	0.80
Through online banking customer support services has been improved	41	3.85	0.78
Online banking has expanded the geographical reach	41	3.97	0.58
Online services has lowered advertisement and marketing costs	41	3.85	0.80
Overall Mean Score	41	3.90	

Source: Field Data (2021)

The findings showed that online banking has improved turn-over and profitability (Average=4.0, std. dev=0.55). The findings further noted that Online banking has expanded the geographical reach (Average=3.97, std. dev=0.58). Similarly, findings showed that online banking has expanded customer base (Average=3.91, std. dev=0.67). The findings further showed that through online banking customer support services has been improved (Average=3.85, std dev=0.78). Furthermore, findings showed that online services has lowered advertisement and marketing costs (Average=3.85, std. dev=0.80). Finally, findings showed that online banking has lowered the cost of operations

(Average=3.82, std. dev=0.83). The overall mean was 3.90 indicating that on average, banks in Kenya practice online banking to a great extent.

4.5.3 Agency Banking

Research was conducted to determine the degree to which Kenyan banks use agency banking. Table 4.8 shows the average and standard deviation of an agency banking measure.

Table 4.8: Descriptive Statistics for Agency Banking

Statements	N	Mean	Std. Dev
Agency banking has improved profitability in your institution	41	4.21	0.69
Agency banking has increased financial inclusivity	41	4.03	0.63
Agency banking has increased number of customers	41	4.42	0.55
Agencies are established at close customer proximity	41	4.33	0.68
Overall Mean Score	41	4.25	

Source: Field Data (2021)

The findings showed that agency banking has increased number of customers (Mean=4.42, std. dev=0.55). The findings also discovered that agencies are established at close customer proximity (Mean=4.33, std. dev=0.68). It has been shown that bank profits have increased as a result of the use of agency banking (Average=4.21, std. dev=0.69). Additionally, agency banking has increased financial inclusivity (Mean=4.03, std. dev=0.63). The overall mean was 4.25 suggesting that banks in Kenya are implementing agency banking to a large degree.

4.5.4 Electronic Funds Transfer

The purpose of the research was to find out how many Kenyan banks employ electronic money transfer. Financial innovation includes the use of electronic money transfers.

Table 4.9 shows the mean and standard for electronic funds transfer indicators.

Table 4.9: Descriptive Statistics for Electronic Funds Transfer

Statements	N	Mean	Std. Dev
Electronic funds transfer has enhanced profitability in your institution	41	4.21	0.73
Payments may be made more quickly and easily through electronic funds transfer.	41	4.03	0.63
Customers' transactions have risen as a result of electronic payments transfer.	41	4.45	0.50
Electronic funds transfer has enhanced banking services provision through customer convenience	41	4.33	0.53
The bank's current cash holdings and cash deposits have risen as a result of electronic money transfers.	41	4.25	0.75
Overall mean Score	41	4.25	

Source: Field Data (2021)

The findings revealed that electronic funds transfer has increased the level of customers transaction (Average=4.45, std. dev=0.5). The findings further revealed that electronic funds transfer has enhanced baking services provision through customer convenience (Mean=4.33, std. dev=0.53). The study also found that electronic money transfer has enhanced the bank's current cash holdings and cash deposits (Mean=4.25, std. dev= 0.75). Additionally, findings discovered that electronic funds transfer has enhanced profitability in your institution (Average= 4.21, std. dev=0.73). Lastly, the descriptive outcomes also

revealed that electronic fund transfer facilitates making of payments (Average=4.03, std. dev=0.63). On average, the results revealed that banks have adopted electronic funds transfer to a greater degree as average mean of 4.25 displayed.

4.5.5 Bank Size

The study was aimed at determining the size of Kenyan banks. CBK annual reports over the last five years were used to get the information (2016-2020). Table 4.10 shows the average and standard for bank size.

Table 4.10: Descriptive Statistics for Bank Size

	N	Minimum	Maximum	Mean	Std. Deviation
Bank size	41	16.782	22.405	20.01217	1.284154
Valid N (listwise)	41				

Source: Research Data (2021)

It has been shown that the average natural logarithm of total assets over the previous five years is 20.012, with an average standard deviation of 1.284. There is a minimum value of 16.782 and a maximum of 22.405.

4.5.6 Financial Performance

Research was conducted to determine the degree of ROA in Kenyan banks. CBK annual reports over the last five years were used to get the information (2016-2020). Average and standard deviation are shown in Table 4.11.

Table 4.11: Descriptive Statistics for Financial Performance

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	41	.003	.048	.02832	.010912
Valid N (listwise)	41				

Source: Research Data (2021)

The average ROA for the last five years is 2.832%, with a standard deviation of 0.011%, according to the statistics. The least number is 0.3 percent, while the highest is 4.8 percent.

4.5 Correlation Results

Analyzing the correlation between each predictor and the response variable was done to determine its strength and direction. Correlations between study variables are shown in size and direction in Table 4.12.

Table 4.12: Correlation Results

		ROA	Mobile banking	Online banking	Agency banking	EFT	Bank size
ROA	Pearson Correlation	1					
	Sig. (2-tailed)						
Mobile banking	Pearson Correlation	.488**	1				
	Sig. (2-tailed)	.000					
Online banking	Pearson Correlation	.384**	.285**	1			
	Sig. (2-tailed)	.000	.000				
Agency banking	Pearson Correlation	.562**	.072	.017	1		
	Sig. (2-tailed)	.000	.135	.800			
EFT	Pearson Correlation	.105	.185**	.044	.017	1	
	Sig. (2-tailed)	.078	.000	.524	.803		
Bank size	Pearson Correlation	.495**	.335**	.104	.118	.051	1
	Sig. (2-tailed)	.000	.000	.127	.084	.460	

** . Correlation is significant at the 0.01 level (2-tailed).

b. Listwise N=185

Source: Field data (2021)

Table 4.12 shows that the return on assets (ROA) and mobile banking have a statistically significant association ($r=0.488^{**}$) at the 5% level of significance. This implies that mobile banking and ROA change in the same direction. In addition, the results show that online banking and ROA are positively and significantly correlated ($r=0.384^{**}$) at 5 % significance level. This implies that both online banking and ROA change in the same direction. Further, results show that agency banking and ROA are positively and significantly correlated ($r=0.562^{**}$) at 5 % significance level. This implies that both agency banking and ROA change in the same direction. The link between ROA and EFT was not very strong. ROA was positively and significantly associated with bank size.

4.6 Regression Results

A regression analysis was performed in order to assess the amount of ROA that can be explained by the components evaluated. Tables 4.13 to 4.15 show the regression findings.

Table 4.13: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.951 ^a	.904	.890	.425085

a. Predictors: (Constant), Bank size, Mobile banking, EFT, Online banking, Agency banking

Source: Field data (2021)

According to the corrected R^2 results, the independent variables examined explained 90.4% of the variance in ROA across Kenya's commercial banks. In other words, the five variables explained 90.4% of the difference in ROA across Kenyan commercial banks, whereas additional factors not examined in this study accounted for 9.6% of the variation.

Table 4.14: ANOVA Analysis

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	59.638	5	11.928	66.008	.000 ^b
	Residual	6.324	35	.181		
	Total	65.962	40			

a. Dependent Variable: ROA
b. Predictors: (Constant), Bank size, Mobile banking, EFT, Online banking, Agency banking

Source: Field data (2021)

As shown in Table 4.14, the ANOVA results suggest the data is suitable for drawing conclusions about the variables.

Table 4.15: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.612	.033		-7.423	.000
	Mobile banking	.523	.011	.508	4.178	.000
	Online banking	.543	.078	.521	4.704	.000
	Agency banking	.506	.004	.501	3.362	.000
	EFT	.102	.001	.104	1.830	.069
	Bank size	.601	.002	.595	6.823	.000

a. Dependent Variable: ROA

Source: Field data (2021)

The coefficient of regression model was as below;

$$Y = -0.612 + 0.523X_1 + 0.543X_2 + 0.506X_3 + 0.601X_4$$

Where:

Y = ROA; X₁ = Mobile banking; X₂ = Online banking; X₃ = Agency banking; X₄ = Bank size

Profits ROA will decrease by 0.612 units if all other parameters remain the same. One unit of mobile banking use boosts ROA by 0.523 units when all other parameters are equal. A unit increase in online banking use increases the ROA by 0.543 units while maintaining all other factors constant. For every one more unit of agency banking that is used, the ROA rises by 0.506. Keeping the rest of the parameters fixed, the ROA rises by 0.601. Innovation in financial services has unquestionably had a significant impact on financial performance. EFT was shown to have no meaningful impact on ROA, according to the study.

4.7 Discussion of Research Findings

Financial innovation was studied as a factor in ROA in this research. The study surveyed 41 banks in Kenya. 41 banks were surveyed, and all of them responded. Primary and secondary data are used in this investigation. From CBK surveys and annual reports, the data used in this study was obtained. Some of the newer technologies explored were mobile banking, online banking, agency banking, and electronic funds transfer (EFT). In this trial, the bank's size functioned as a reliable guarantee. Data was also evaluated using descriptive and inferential statistics. The following is a summary of the findings.

Mobile banking has a significant influence on Kenyan banks' profitability, according to research ($\beta=0.523$, $p=0.000$). They are in line with Muli (2018)'s results, which revealed that mobile banking has a large and favorable influence on efficiency. However, these findings were inconsistent with those of Kamande (2018) who found that mobile banking does not significantly influence ROA.

Results show that Kenyan banks' ROA ($\beta=0.543$, $p=0.000$) is favorably and substantially linked to internet banking (). Online banking has a negative impact on bank performance,

according to Kim et al. However, Ogwen (2019) found no significant association between internet banking and MFIs' ROA.

Agencies are favorably and substantially linked to the bank's ROA ($\beta = 0.506$, $p = 0.008$) according to the findings. A favorable correlation between ROA and agency banking was reported by Abdulkadir (2019). These findings align with King'angai et al. (2016) findings on how agency banking impacts Kenyan-based banks' performance.

In terms of ROA, EFT had a little impact, but bank size had a large one. There was a correlation coefficient of 0.904. 90.4 percent of ROA variance can be attributed to the specified predictor factors. In the ANOVA table, a p value of less than 0.05 indicates that financial innovations have a substantial impact on ROA.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the findings of the preceding chapter, draws additional conclusions, and discusses the limits of the research that were discovered over the course of the investigation. Additionally, it makes policy-making recommendations and makes ideas on areas where additional research should be conducted.

5.2 Summary of Findings

Research was conducted to examine the ROA of Kenyan banks in light of financial innovation. It was determined that EFT and the size of banks were factors in the investigation. The study was conducted using a descriptive approach. An SPSS analysis was performed on both main and secondary data sets.

The study's initial objective was to ascertain the return on assets (ROA) of Kenyan commercial banks in light of the advent of mobile banking. Mobile banking has a positive link with ROA at a 5% significance level, according to the correlation data. This suggests that a better mobile banking experience might result in a higher ROA. Mobile banking in Kenya has a favorable and substantial impact on ROA, as shown by regression findings ($\beta=0.523$, $p=0.000$).

The second purpose was to determine the impact of internet banking on the return on assets of Kenyan banks. Online banking and ROA exhibited a positive link, as shown by the correlation data with a 5% level of significance. ROA is expected to rise as a result of

an increase in internet banking. According to regression findings, Kenyan banks' ROA ($\beta=0.543$, $p=0.000$) has a substantial effect on internet banking.

The third goal of the research was to determine the effect of agency banking on the return on assets of Kenyan banks. The significance threshold for the link between ROA and agency banking is set at 5% in connection statistics. An increase in ROA may be expected as a consequence of increasing agency banking. In Kenyan banks, agency banking has a substantial and beneficial influence on the ROA ($\beta=0.506$, $p=0.008$), according to research.

The study's fourth objective was to determine the influence on ROA in Kenyan banks of agency banking ($\beta=0.506$, $p=0.008$). Correlation analyses at the 5% level of significance indicate that EFT is positively correlated with ROA but is not statistically significant. This suggests that increasing EFT would have no discernible effect on ROA. Results from the regression ($\beta=0.102$, $p=0.069$) show that EFT had a favorable impact on ROA in Kenyan banks, although that effect was not statistically significant.

The fifth purpose was to investigate the link between the size of a bank and its ROA among Kenyan banks. Correlation analyses at the 5% level of significance indicate that bank size is positively correlated with ROA. This suggests that increasing the size of the bank would result in an increase in ROA. The regression findings ($\beta=0.601$, $p=0.000$) reveal that bank size had a positive and considerable influence on ROA across Kenyan banks.

5.3 Conclusions

The research's goal was to discover the link between ROA and financial developments. Mobile banking has a good and considerable impact on ROA, according to the research. This may imply that banks which have adopted mobile banking in a large scale are likely to record a high level of ROA compared with banks with less mobile banking adoption.

According to the study's findings, internet banking has a statistically significant influence on ROA. This may imply that banks which have adopted online banking in a large scale are likely to record a high level of ROA compared with banks with less agency banking adoption. The study concludes that online banking enhances ROA among banks in Kenya.

Agency banking has a favorable and considerable impact on ROA, according to the research findings. This may imply that banks which have adopted agency banking in a large scale are likely to record a high level of ROA compared with banks with less agency banking adoption. Kenyan banks' ROA improved as a result of their use of agency banking, according to a new study. According to research, ROA is affected by the size of the bank. If this is the case, it might be because major banks have greater governance procedures in place than small banks.

5.4 Recommendations for Policy and Practice

Research shows that mobile banking increases ROA in a favorable and statistically significant way. The research suggests that bank managers in Kenya broaden the scope of mobile banking because of the potential increase in ROA. The policy makers such as the

CBK should create a conducive environment for banks to conduct mobile banking activities.

ROA was shown to be significantly impacted by internet banking. Study advises that bank managers and directors in Kenya guarantee that customers may transact via internet banking without security issues, as this would result in greater ROA levels for the banks. The government should work on enhancing internet coverage to make this a reality.

From the research results, agency banking had a substantial influence on ROA. Therefore, the study recommends that the CBK which is the regulator should come with policy guidelines on how banks should adopt agency banking. They should also create a conducive environment making it easy for banks to adopt agency banking. Furthermore, management and directors of banks in Kenya should work on ensuring they have agency banking outlets in the different parts of the country.

5.5 Limitations of the Study

The return on assets (ROA) of Kenyan banks was investigated as a factor in this study. A total of five variables were examined in this investigation. However, there are a lot of other elements that might impact a company's ROA.. Some are controlled by the bank, such as management efficiency and corporate governance, while others are not.

The research used quantitative data. Other elements that potentially impact the association between financial innovations and banks' ROA were also left out of the research, including qualitative data. Qualitative methods like focus groups, open-ended surveys, and interviews can aid in the development of more definite outcomes.

A five-year period was the focus of the investigation (2016 to 2020). For now, we don't know how long the effects will persist. After 2020, it's not apparent whether the same benefits will be attained. To account for key economic developments, the research should have been conducted over a longer period of time.

The researchers used a typical least squares regression model to examine the data. Using regression models has drawbacks, such as erroneous and misleading results that change the value of the variable. In addition, the regression's outcomes may be altered if more data were supplied.

5.6 Suggestions for Further Research

A 90.4 percent R square was found in the research results. According to this, there are additional elements that impact ROA among Kenyan banks that were not addressed in the study. Other researchers ought thus to focus on other factors for example; management efficiency, liquidity, board composition in terms of expertise, audit committee, among other corporate governance aspects that affect ROA among the banks.

The research was restricted to Kenyan commercial banks. Additional research on other Kenyan financial institutions should be conducted, according to the study's suggestions. Future research should look into how financial innovations affect other factors besides the ROA, such as bank value, efficiency, and growth, to name a few.

Because of the readily available data, the focus of this research was drawn to the last five years. Past studies may span a longer time period, such as ten or twenty years, and might have a significant impact on this study by either complementing or contradicting its

conclusions. Longer studies enable researchers to observe the impact of economic cycles, such as booms and busts, on their findings more thoroughly.

Regression models have their own set of drawbacks and might provide incorrect results when a variable is changed. In the future, researchers should investigate the numerous linkages between financial innovations and ROA by using models like the Vector Error Correction Model.

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APPENDIX I: QUESTIONNAIRE

Financial innovation and commercial bank financial success are linked, and this questionnaire is designed to help researchers better understand this connection. As a participant, you have been asked to fill out the following questionnaire. Your personal information will only be used for this research, and it will be kept private and anonymous. Do your best to answer all the questions.

SECTION A: GENERAL INFORMATION.

Please read each of the questions carefully and follow the instruction given. Kindly enter your responses in the areas given and check (✓) the box that corresponds to your response to the questions, where appropriate.

1. Age (tick as appropriate)

20-29 ()

31-39 ()

41-49 ()

50 and above ()

2. Gender (tick as appropriate)

Sex Male ()

Female ()

3. Highest level of education (tick as appropriate)

Phd. ()

Masters ()

Bachelor ()

Diploma ()

Others Specify

4. Which category best describes your position in the organization?

Top level management ()

Middle level management ()

Low level management ()

Subordinate staff ()

Other (please specify)

SECTION B: FINANCIAL INNOVATIONS

5. To what degree do you agree with the following claims about mobile banking and financial performance? Use: 1- Strongly Disagree, 2- Disagree, 3- Undecided, 4- Agree and 5- Strongly Agree.

MOBILE BANKING AND FINANCIAL PERFORMANCE	1	2	3	4	5
Your bank's bottom line has seen a boost thanks to the popularity of mobile banking.					
Mobile banking has improved customer convenience					
Mobile banking has greatly increased reliability of services					
Increased profitability may be attributed to the lower costs associated with mobile banking.					
Mobile banking services has made it easy for loan application process thereby improving profitability through interest earned					

6. To what degree do you agree with the following statements with regard to online banking and financial performance? Use: 1- Strongly Disagree, 2- Disagree, 3- Undecided, 4- Agree and 5- Strongly Agree.

ONLINE BANKING AND FINANCIAL PERFORMANCE	1	2	3	4	5
Your institution's turnover and profit margins have been boosted by online banking.					
Online banking has expanded customer base					
Online banking has lowered the cost of operations					
Through online banking customer support services has been improved					
Online banking has expanded the geographical reach					
Online services has lowered advertisement and marketing costs					

7. To what degree do you agree with the following statements with regard to agency banking and financial performance? Use: 1- Strongly Disagree, 2- Disagree, 3- Undecided, 4- Agree and 5- Strongly Agree.

AGENCY BANKING AND FINANCIAL PERFORMANCE	1	2	3	4	5
Your institution's profitability has increased as a result of agency banking.					
Agency banking has increased financial inclusivity					
Agency banking has increased number of customers					
Agencies are established at Close customer proximity					

8. To what degree do you agree with the following statements with regard to electronic fund transfer and financial performance? Use: 1- Strongly Disagree, 2- Disagree, 3- Undecided, 4- Agree and 5- Strongly Agree.

ELECTRONIC FUNDS TRANSFER AND FINANCIAL PERFORMANCE	1	2	3	4	5
Electronic funds transfer has enhanced profitability in your institution					
Making payments is made easier with electronic money transfers.					
Customer transactions have risen due to electronic payments transmission.					
Electronic funds transfer has enhanced banking services provision through customer convenience					
The bank's current cash holdings and cash deposits have risen as a result of electronic money transfers.					

APPENDIX II: SECONDARY DATA

BANK	ROA	Bank size
1	0.030	21.853
2	0.036	20.011
3	0.041	19.285

BANK	ROA	Bank size
4	0.032	18.742
5	0.029	19.773
6	0.035	20.085
7	0.028	21.103
8	0.026	19.287
9	0.023	18.402
10	0.020	20.602
11	0.026	16.782
12	0.034	19.024
13	0.037	20.319
14	0.031	20.546
15	0.037	21.453
16	0.039	22.405
17	0.033	19.582
18	0.040	19.875
19	0.037	21.035
20	0.030	21.981
21	0.017	20.295
22	0.029	19.286
23	0.023	18.999
24	0.023	19.827
25	0.003	20.200
26	0.015	21.179
27	0.025	19.459
28	0.042	17.052
29	0.045	20.625
30	0.006	17.039
31	0.009	19.258
32	0.009	20.353
33	0.014	20.522
34	0.010	21.353
35	0.034	22.238
36	0.036	19.711
37	0.029	19.868
38	0.031	20.957
39	0.048	19.258
40	0.036	20.353
41	0.033	20.522

APPENDIX III: LIST OF LICENSED COMMERCIAL BANKS

- 1) African Banking Corporation Ltd
- 2) Guaranty Trust Bank (K) Ltd
- 3) Bank of Baroda (K)
- 4) Guardian Bank Ltd
- 5) Bank of India
- 6) Gulf African Bank Ltd
- 7) ABSA Bank Kenya PLC
- 8) Habib Bank A.G. Zurich
- 9) Bank of Africa Kenya Ltd
- 10) Habib Bank Ltd
- 12) SBM Bank Kenya Ltd
- 13) I & M Bank Limited
- 14) Citibank N.A Kenya
- 15) NCBA Bank Kenya PLC
- 16) Jamii Bora Bank Ltd
- 17) Consolidated Bank of Kenya.
- 18) Cooperative Bank of Kenya Ltd
- 19) KCB Bank Kenya Ltd
- 20) Credit Bank Ltd
- 21) Middle East Bank (K) Ltd
- 22) Development Bank of Kenya
- 23) National Bank of Kenya

- 24) Diamond Trust Bank Ltd
- 25) DIB Bank Kenya Ltd
- 26) M-oriental Bank Ltd
- 27) Ecobank Kenya Ltd
- 28) Paramount Bank Ltd
- 29) Spire Bank Ltd
- 30) Prime Bank Ltd
- 31) Equity Bank Kenya Ltd
- 32) Sidian Bank Ltd
- 33) Family Bank Ltd
- 34) Stanbic Bank Kenya Ltd
- 35) Fidelity commercial Bank Ltd
- 36) Standard Chartered Bank Kenya Ltd
- 37) First Community Bank Ltd
- 38) Access Bank Kenya PLC
- 39) UBA Kenya Bank Ltd
- 40) Mayfair CIB Bank Ltd
- 41) Victoria Commercial Bank Ltd

