EFFECTS OF FINANCIAL INNOVATION ON PERFORMANCE OF COMMERCIAL BANKS IN KENYA

MANNASSES ELKANA ODULWA

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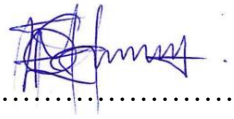
DECLARATION

This is my original work and has not been presented in any other university or college for examination purpose.

Signature  Date 24 November 2022

MANNASSES ELKANA ODULWA

D63/37209/2020

This research project has been submitted for examination with my approval as university supervisor.

Signature  Date 24 November 2022

Prof. Cyrus Mwangi Iraya

Supervisor,

Faculty of business and management sciences, University of Nairobi

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DEDICATION

I dedicate my research project to my parents Morris Odulwa and Emily Odulwa, my siblings Zipporah, Michael, Rahab, Emmanuel and Damaris, their encouragement and support has played a key role throughout my education**.**

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LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
ATM	Automated Teller Machine
CBK	Central Bank of Kenya
EFTs	Electronic Fund Transfers
IDT	Innovation Diffusion Theory
KBA	Kenya Bankers Association
MFI	Micro-finance Institutions
NSE	Nairobi Securities Exchange
ROA	Return on Assets
ROI	Return on Investment
RTGS	Real Time Gross Settlement
SPSS	Statistical Package for Social Sciences

ABSTRACT

The global business landscape is evolving quickly and is quite competitive. In this situation, the majority of firms are becoming aware that knowledge is the most crucial resource for establishing long-term competitive advantage. Therefore, financial innovation is created to offer strategy, procedure, and technology to improve corporate effectiveness. The research assessed the effect of financial innovations on financial performance of commercial banks in Kenya using a descriptive research design. The study population composed 42commercial banks in Kenya as at 31 December 2021. This research collected data for five years from 2017 to 2021. The regression method was preferred to analyze and determine the effects of every independent study variable. The study findings showed there exists a direct relation linking mobile banking to commercial banks performance (*Beta*= 0.113, P=.039). They revealed Internet banking had direct moderate influence on the Commercial banks ROA (*Beta*= 0.133, P=.000). Agency Banking had strong direct influence on ROA (*Beta*= 0.106, P=.008). They further indicated that capital adequacy positively influenced Commercial banks performance (*Beta*= 0.002, P= .069). The study results also indicated that there exists an inverse correlation between Asset quality and commercial banks performance (*Beta*= -0.506, P= .000). Finally, bank size to commercial banks ROA (*Beta*=0.411, P= .000).

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

The banking sector has evolved tremendously in the past decade which has mainly been influenced by increased globalization. The world has become like a small village and the banking industry has been in the forefront particularly through various innovations like mobile banking, introductions of credit cards, use of RTGS for funds transfer which have tremendously changed the operations of this industry Kamau & Oluoch, (2016). The profitability of any firm is key to stakeholders as their rationale is to maximize wealth of the stakeholders**.** This calls for the stakeholders in the banking sector to adopt and encourage innovation in older to realize an improved performance as these innovations cut operational costs by huge margins Nader, (2011). McKay and Pickens (2010) reiterated in their paper that the banks which focus on innovations gain a competitive advantage in the long run. This is highly attributable to reduction in the costs of carrying out daily operations as clients can transact from wherever they are without visiting branches which cuts on the labour costs hence improving on the bank's profitability. The use of innovation has reduced transactional costs in banks in Europe Gutu (2014). Hence, innovation is a tool which cuts down frequent visit to physical banking halls as customers transact at the comfort of their homes Nader, (2011).

The study considered some theories to broaden its scope. It relied on; Diffusion of Innovation Theory by Rogers (2003), asserts that if a new innovation has a comparative advantage over the current production tools. Additionally, innovation compatible with already in use technologies and procedures is essential because those that are compatible are more likely to be accepted. Technology Accepted Model (TAM) developed by Davis (1989), reiterated that the extent to which individuals have confidence in utilizing a given system would improve their productivity; levels to which people believe that utilizing a specific system would make them use less or no effort. The effective adoption of the new technologies, as well as people's attempts to learn and their first efforts focused on how technological shifts are helping in learning new processes, Finally, Constraint-induced innovation Silber (1983) noted primary driver of financial innovation is financial institutions' desire to maximize profits. The scholar further noted in his studies that it eliminates or cuts the restrictions placed on businesses. Because of the significant hidden costs associated with these restrictions,

businesses that are subject to flaws like regulation and entry barriers are highly motivated to innovate and increase their profitability Mukur (2014).

Mabrouk and Mamoghli (2010) claim that the constraint and first mover of product innovations in Tunisian banks are positively and significantly related to return on assets. Gardachew (2010) found that the slow pace of technology innovation adaptation has prevented Ethiopian banks from becoming functional. According to a Porteus (2006) study, Ugandans now services offered by their banks thanks to the growth of electronic and mobile banking. Over the years, Kenya's financial sector has swiftly transformed. Ombok (2016) agreed with the conclusions made by Mwania & Muganda (2011), who saw the growth of mobile money transfers like AIRTEL and M-PESA. Expansion of branches and agent or retail banking, investments in T-bondfor financing developments, among others, were heading inexorably toward a cashless or paperless economy, as shown in the increasing preference of use of Visa cards in making payments for bills and other similar behaviors. Effective information technology use has improved asset and personnel utilization for firms, boosted revenues, and enhanced public access to financial services. According to Muchiri (2016), four mobile phone carriers have been operating in Kenya for the five years (2007–2011) when mobile phone money transfer services have been available, with 15.4 million consumers and more than 39,449 agents. In 2010, there were an average of Ksh. 2.54 billion in daily transactions and Ksh. 75 billion in monthly transactions, which led to lowering of the cost of transaction and increased accessibility to financial services. This shows an extremely active market for electronic payments.

1.1.1 Financial Innovation

What truly qualifies as financial innovations has many definitions. Financial innovations, according to Allen (2012), are the means through which financial organizations use ICT to create new goods and services and novel methods of provision of banking services. Thus, the phrase refers to the development of new financial services' goods and services. The banking industry's financial innovations, according to Jack and Suri (2010), strive to improve service delivery while also increasing the market share of the individual financial organizations. A novel service, product, or mode of production is an innovation. It might also refer to a better version of an already successful product or manufacturing process. Financial innovations assist in bringing down the price of delivering the current goods and services. Financial innovation, according to Lawrence and Scott (2010), is a wide-ranging notion that comprises:

use of new financial intermediation techniques, establishment of innovative financial organizations, modifications to financial legislation or regulation, changes to services, and modifications to business procedures. In order to ensure that the bank operates successfully and efficiently in assuring client pleasure, financial innovation is a tool. It is true that services businesses are well-regarded if they consistently exceed client expectations.

Many commercial banks have adopted financial innovations like online banking and electronic banking. Since they were introduced in the 1990s, ATM usage has increased. Some of the financial innovations used in Kenya include Real Time Gross Settlement (RTGS), online client self-services, EFT, utility bill payment among others. As a result, there are now more companies in the banking sector, which has boosted service delivery efficiency Ignazio (2007). Mpesa's popularity and success have also completely changed Kenya's banking industry. Customers can reduce the time it takes to complete interbank transactions to only five seconds thanks to platforms like PesaLink. PesaLink is a success story that highlights the effectiveness of mobile banking alliances with other platforms, which have significantly increased the speed of transactions in the banking industry. New financial innovations are giving users new ways to access banking services, including Prime Bank's "Bank on Wheel." The bank provides financial services to clients where they are physically located, establishing a mobile branch with more effective service delivery and fewer operational expenses. Customers of United Bank of Africa can now transact on social media platforms thanks to the integration of Whatsapp and Facebook with their banking system. The "Leo" service, which aids users in creating accounts, purchasing airtime, and transferring money Bankers in Kenya (2022).

According to Siam (2006) e-banking as a financial innovation led to more customer satisfaction in Jordan. According to Anbalagan (2011) most financial innovations are brought into existence due to the emergence of computers and technological improvements. The automated teller machine, for instance is an innovation that is fostered by advancements in Information and Communication Technology (ICT). Any organization's continued success depends on innovation Kimberly, (2009). As a result, any firm that can quickly adopt a new technology is able to keep up with the competition Shapiro, (2009). The growth of financial institutions, the sophistication of new payment systems, and the availability of alternative assets to keeping money are all positive effects of advancements which in turn satisfy the needs of financial participants, have been developed Nyathira, (2012); Cherotich et al.,

(2015). The main causes of this are technological advancements and an increase in rivalry as institutions become more numerous.

1.1.2 Financial Performance

The technique of evaluating a firm's strategy, operations, and policies in terms of money is what is known as financial performance Kaguri, (2013). The company's ROI and ROA (Return on Assets) both reflect these outcomes. It gauges a company's financial stability and likelihood of surviving for a specific amount of time Wanjiru, (2012); and it can be utilized as a starting point for comparable businesses within the equivalent sector or to aggregate markets or sectors. The capacity of a financial institution to produce long-term profitability is known as financial performance. Managers must assess complex trade-offs between risk, growth, and return collectively in order for any financial institution to be successful, intriguing the development of risk-adjusted indicators Gambacorta & Albertazzi, (2011). The measurement of a corporate entity's financial success is how well it has used its resources to produce revenues. Typically, profitability ratios, liquidity ratios, and gearing ratios are applied in assessing financial performance of organizations Alfred, (2017). Agbada and Osuji (2013) claim that the ROA is a crucial representation indicator frequently applied in banking institutions to determine its financial performance, and that it shows their capability and effectiveness in utilizing banks resources to generate income. Therefore, this is a method of evaluating a company's performance in monetary terms and can be used to contrast companies in the same industry that are similar to one another.

Analyzing financial performance involves comparing outputs to inputs Pandey, (2010). Performance measures an organization's measure of efficiency in utilization of resources and can be expressed in form of non-financial characterization and financial results Waal & Bagorogoza, (2010). Waal, Bagoro (2010). Therefore, financial performance reveals how effectively resources are employed to generate income, how they contribute to sustainable performance, or how a corporation expands. Therefore, financial results show if financial objectives are attained or not Bakar & Ahmad, (2010). As a result, shareholders would be more interested in financial performance than any other group of the company's stakeholders. Investors are interested in a company's potential to generate income that will cover costs and leave them with enough money to pay them dividends Mamoghli& Mabrouk, (2010). Financial performance has been gauged using a variety of techniques. For instance, profitability and earnings, Bagorogoza and Waal (2010), are good markers of financial

performance. Financial performance, in the opinion of Al-Hussein and Johnson (2009), is determined by how effectively financial objectives are attained. The effectiveness of commercial banks is evaluated by how good they manage the public deposits and the loans borrowed to achieve their goals, which include profit expansion. This includes manipulating interest rates so they can borrow at lower rates and lend at high rates while still being within acceptable ranges.

The success indicator can be measured both financially and nonfinancially, according to Bakar & Ahmad (2010). According to Njeri (2013), a company's goal may be both financial and non-financial, including market expansion, financial viability, customer retention, relevance, effectiveness, and efficiency. Financial goals include arise in profits and revenues, while non-financial goals include employee and customer satisfaction, and retention of customer. Financial performance, in the opinion of Al-Hussein and Johnson (2009), is determined by how effectively financial objectives are attained. In other words, an organization's financial success is a gauge of how well it meets its financial objectives. In this regard, they evaluated the financial performance of Saudi Arabian commercial banks using Return on Assets. In this study, return on assets was used as a proxy for financial performance. The ratio of income to total assets, or return on assets (ROA), aims to quantify financial success. In other words, it's a profitability metric that shows how the business uses its resources to earn money.

1.1.3 Financial Innovation and Financial Performance of Commercial Banks

Banks use financial innovations as powerful strategic tools to outperform the rivalry, and they have become a vital tool for the bank to enhance performance and sustain its efficacy in the market. Woldesenbet & Batiz-Lazo, (2006). This piques interest in researching how financial innovations and banking performance are related. A successful invention that creates a distinct competitive spot can provide a bank a competitive edge and improve financial performance in a highly turbulent environment Amit & Roberts, (2003). This can only be sustained by constant innovation and process and product improvement Porter, (2004).

Financial innovation has several advantages, including lower costs, lower risks, more profits, higher living standards, and better services for the financial participants. Financial innovations can be categorized as new products, new services, new "production" processes, or new organizational forms, according to Frame and White (2002). As a result, a new intermediate good or service developed for financial services companies may be incorporated

into a new financial production process. Therefore, innovation is essential to an organization's long-term success. As a result, any firm that can quickly adopt a new technology is able to keep up with the competition Shapiro, (2015). The growth of financial institutions, the sophistication of new payment methods, and asset holding options designed to fulfill the needs of financial players are just a few examples of how advances in the financial sector have positively impacted the economy Njeri, (2013). The main causes of this are technological advancements and an increase in rivalry as institutions become more numerous.

1.1.4 Commercial Banks in Kenya

Kenyan commercial banks operate under organizations and markets governed by the Central Bank of Kenya (CBK). The CBK (2022) estimates that Kenya has 42 fully functional commercial banks. The majority of Kenya's commercial banks are privately held. The regulator also reports that 13 of the banks are foreign owned, compared to 27 indigenous banks. Commercial banks play a significant role in the nation's economic expansion. To this aim, the Vision 2030-an economic blueprint, which has as one of its pillars guaranteeing the sustainability aspect of the banking system for economic development via mobilizing savings, has incorporated the sector's function and stability.

The Companies Act 487, the Banking Act 488, and the CBK Act 491all govern how commercial banks in Kenya conduct business. These Acts make sure that the banking industry is stable and that there are no shady transactions that could jeopardize the secure protection of deposits. Additionally, the CBK provides practical rules to protect individual banks against hazards. According to the standards, all products must be approved by the CBK and meet particular requirements for capital sufficiency, liquidity management, asset quality, and licensing. Commercial banks must therefore limit their operations while abiding by the law and optimizing returns on investments.

When it comes to size of the industry served, Kenya's banking sector is the biggest in Central and East Africa, claim Becket al. (2009). The CBK Act is designed to guarantee depositor protection and the elimination of the risk of instability in the banking sector. Additionally, CBK laws aim to control unlawful practices including money laundering and corruption. For example, the CBK requires disclosure and source information for each transaction involving $1,000 or more in Kenya Shillings. The CBK is also tasked with approving financial innovations offered by the relevant Kenyan banks.

1.2 Research Problem

The global business landscape is evolving quickly and is quite competitive. In this situation, the majority of firms are becoming aware that knowledge is the most crucial resource for establishing long-term competitive advantage. Therefore, financial innovation is created to offer strategy, procedure, and technology to improve corporate effectiveness. Kenya's commercial banks have faced numerous difficulties over the past 20 years. The industry has experienced intense rivalry from other financial institutions including Saccos and microfinances, according to Tsuma et al. (2015). These institutions have the financial resources to meet the hurdles faced through changing their focus to innovative, high-quality products that can meet customers' needs in the same market Mutuku, (2014). These organizations target the middle-class and lower-class individuals that make up the majority of bank customers Njeri, (2013). This circumstance has fueled a desire for banks to be more efficient and technologically advanced, which is expected to lead to improved financial services for financial participants as well as more access to funding and higher profitability. Commercial banks in Kenya must be able to come up with innovative concepts in order to survive and succeed. One such timely concept is financial innovations.

Due to the rapid changes in technology innovation happening throughout the world and affecting the financial sector, the banking industry is always changing, which has sparked interest in financial innovation research. The financial services sector has been affected by constantly changing customer needs, pioneering financial products, technology advancements, and the usage of different distribution channels. The CBK has continued to authorize new banking innovation products for this sector. Through the introduction of new products, the expansion of existing ones, and the addition of new distribution channels, banks are able to remain competitive in the most unusual situations and to adapt to the environment. According to CBK (2016) reports, the number of ATMs increased from 617 in 2006 to 2656 in 2016, with a 62 or 4% drop in 2016 compared to 2015. In 2015, there were 2718 ATMs. The adoption of more affordable channels for providing financial services by banks has been the key factor driving the reduction in the number of ATMs. Kenyan commercial banks have made significant investments in new technologies as well as employee training to operate the new systems that have been put in the banks. 15 banks submitted applications at the end of 2016 to launch PESALINK, a new product developed by Kenya Bankers. At the end of 2016, 15 banks submitted applications to launch PESALINK, a new service developed by the

Kenya Bankers Association that allows clients to transfer money between banks via mobile phone, internet, ATMs, bank agents, and branches CBK, (2016).

Hendrickson and Nichols (2011) assert that small banks in USA improved performance as a result of their financial innovations. This is due to the fact that tiny banks get a competitive advantage and are able to draw in more clients. The impact of financial innovations on the financial performance of commercial banks is not completely investigated, according to Mabrouk and Mamoghli (2010). According to Francisco (2007), the growth of the banking sector in an economy is a result of financial innovations. Numerous studies on the subject have been conducted in Kenya investigating the connection linking innovations and bank profitability established an existence of strong correlation research variables Koriret et al., (2014). Research on the impact of financial innovation on commercial banks' total revenue, return on assets, profitability, and consumer deposits was conducted by Ngumi (2013). Results of study indicates that financial innovations had a favorable impact on overall revenue, ROA, profitability, and consumer deposits. But the study found that using a mobile phone had a stronger moderating impact on performance than using internet banking. Commercial banks have implemented credit cards, mobile banking, and agency banking, however Muriru & Ngari (2014) highlighted that it is unclear if doing so has helped financial performance or not. Therefore, there is a need for additional research on this topic. Because of the disparate outcomes Ngumi, (2013); Muriru & Ngari, (2014). It's also critical to remember that the outcomes of earlier research may have varied when additional variables were included in the equation because they used various variables. This study will take into account a variety of financial innovations and how they impact the commercial bank’s performance both individually and in combination. Additionally, there haven't been much research conducted on this topic in developing nations like Kenya.

1.3 Research Objective

The general objective of this study is to establish the effect of financial innovations on financial performance of commercial banks in Kenya.

1.4 Value of the Study

Researchers and academics will be able to find information from this study. In this study, critical discussions on bank financial performance and financial innovations will take place. Future researchers and academics who are looking for information on these topics will use these crucial talks. This work will serve as a foundation for other studies as well. By

obtaining secondary data for this study, students conducting research on the subject of financial innovations, banks, and bank performance will greatly benefit. The researcher will document the many methods and means of financial innovations, which will benefit commercial banks in Kenya even more as a result of this study. In order to benefit from innovations, commercial banks in Kenya will thus discover a wealth of useful information and tips on how to improve their financial innovations. The financial performance of Kenya's commercial banks has improved as a result of appropriate financial innovations.

Business consultants that provide advice to commercial banks which will find this study to be of considerable value. This is due to the analysis that will be done of how financial innovations affect the performance of commercial banks. Given that microfinance organizations operate in the same sector as commercial banks and might profit from similar financial developments, this study will be very helpful to all financial institutions. The government can utilize this study through institutions like the Central Bank of Kenya. The study will provide useful data that will aid CBK policy makers in formulating regulations governing operations related to agency banking, mobile banking, internet banking, and electronic financial transfers. The CBK will be able to create rules and regulations that would encourage innovation in the banking industry with more knowledge on the advantages of these technologies and their difficulties.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The relevant literature to the topic is reviewed in this chapter. The chapter is divided into four sections: a conceptual framework, an empirical assessment of the variable, and a summary of the literature study. A conceptual framework provides a path which the study will take including defining the dependent and independent variables, and how they are related. The empirical review looks at the previous studies carried out relating to the topic of study, including identification of a research gap.

2.2Theoretical Review

This study will be based on the following theories: Diffusion of Innovation Theory, Technology Accepted Model (TAM) and Constraint-induced financial innovation theory.

2.2.1 Diffusion of Innovation Theory (IDT)

The IDT focuses on providing an explanation on how, within a company, innovation is spread. Rogers (2003) asserts that several varied factors contribute to the dissemination of inventions from place to place. For example, if a new innovation has a comparative advantage over the current production tools, it will be seen as an augmentation and may be implemented across the entire organization. Additionally, innovation compatibility with already in use technologies and procedures is essential because those that are compatible are more likely to be accepted. Innovations are also evaluated for their convenience of use, their ability to be tested before being fully implemented, and the ease with which their inputs and outputs may be quantified. It is significant to remember that since knowledge varies among individuals, the perception of ease of use is considered to be subjective. This idea, according to Rogers (2003), is primarily focused on four factors: invention, communication means, time, and the consequences that a specific innovation has on social systems. According to Hernadez and Mazzon (2006), there are higher chances of innovations being embraced by an entity if congruent with that entity's particular set of values.

Due to the disparities in how each department operates, the theory's assumption that diffusions will occur between them may not be valid. Innovation, time, communication channels, and the effects of social systems are the four main components of the theory. These are undoubtedly significant criteria, but they are not the only ones that need to be considered. For instance, the theory does not take into account the company's financial stability, the

possibility for growth in one business type vs another, or the companies' management teams' competence.

This theory is essential to the study because it explains how innovations spread from one area of the economy to another or from one division to another within the same company. It explains how innovations are embraced by organizations throughout the sector. Particularly in the banking industry, the requirement for prompt service delivery and changing consumer preferences are characteristics. Because of this, the theory provide insight on how electronic payment transfers and mobile banking have grown to dominate the banking sector. A customer transaction is guaranteed by electronic funds transfer without the need for a physical trip to the banking area. Mobile banking, on the other hand, moves quickly and entails the handover of mobile technology to the banking sector, from the telecommunications industry.

2.2.2 Technology Accepted Model (TAM)

Davis, Bagozzi, Davis, and Warshaw (1989) established the hypothesis. This hypothesis was originally taken from Ajzen and Fishbin's (1980) as the Theory of Reasoned Action (TRA). PU and PEOU are two of the criteria that, according to the theoretical model, people take into account while choosing a new technology. Davis (1989) defines PU as the extent to which individuals believes that utilizing a given system would improve their job performance; and PEOU as the extent to which people believe that utilizing a specific system would make them use less or no effort. The effective adoption of the new technologies, as well as people's attempts to learn and their first efforts focused on how technological shifts are helping in learning new processes, are questionable in the minds of decision-makers Bagozzi, Warshaw, &Davis, (1992).

PU and PEOU are two characteristics that the Technology Accepted Model uses to impact their decision-making. These are undoubtedly significant aspects that affect decision-making, but they are not the only ones that need to be considered. For instance, other aspects that have a significant impact on decision-making, such as economic conditions, lifestyle, personality, and age, are not taken into account by the theory.

Ease of use was viewed as the primary factor in an Egyptian study that looked at customers' intentions to continue using internet banking and using the TAM model. A study on the adoption of mobile banking in Thailand was mentioned by Izogo et al. (2012) and El-Kashir et al. (2009). It revealed that users will only utilize mobile banking technology if they believe it will be beneficial to them. Masinge (2010) added that perceived trust, cost, and perceived

danger as distinct to TAM in a study done in South Africa focusing on the factors affecting its uptake. Results revealed cost, perceived usefulness, perceived ease of use, and perceived usefulness all significantly influenced the adoption of mobile banking.

2.2.3 Constraint-induced Financial Innovation Theory

This theory was put forward by Silber (1983), who noted; primary driver of financial innovation is financial institutions' desire to maximize wealth. Further, Silber (2004) noted; the purpose of financial innovation is to eliminate or reduce the restrictions placed on businesses. Because of the significant hidden costs associated with these restrictions, businesses that are subject to flaws like regulation and entry barriers are highly motivated to innovate and increase their profitability. The idea emphasizes that the majority of financial institutions implement financial innovation primarily with the intention of maximizing profits.

There are some limitations on maximizing profit, including organizational management and internal policies. The theory of constraint-induced innovation is original and descriptive since it examines financial innovation from the perspective of microeconomics. However, because of its overemphasis on "innovation under adversity," it is difficult to commendably describe the financial innovation phenomenon rising liberal finance trend. Financial limitations considerably decrease the likelihood that a company will take on innovative ideas. Due of the high shadow costs associated with these restrictions, businesses who must contend with flaws like entry barriers and stringent regulations have the strongest incentive to innovate and increase revenues. In his study, Mukur (2014) utilized this theory and acknowledged its applicability as a way to solve organizational leadership shortcomings. The Constraint-Induced Financial Innovation theory is tested in numerous specific examples; however, its applications mostly have anecdotal value. However, the theory falls short of becoming a comprehensive and coherent explanation that focuses on both individual markets and the economy as a whole. Numerous academics who study actual financial phenomena have noted that banks, in particular, do matter.

2.3 Determinants of Financial Performance of Commercial Banks

Vives (2017), reiterated the number of loans advanced, the current customer base, the amount of investment, and the industry's political and legal context are the leading factors impacting the bank’s profitability. The study focus is to discuss macroeconomic issues, financial innovations, capital sufficiency, customer base size, and loan advances.

2.3.1 Financial Innovations

According to Bulut (2013), financial innovation is defined as the introduction or enhancement of a good, service, or method that benefits those who engage in financial activity. Benefits include decreased expenses, reduced risks, higher earnings, higher living standards, and better services for financial participants. Any organization's capacity to quickly adopt a new technology gives it the advantage over the competition because innovation is essential to its continued success. The growth of financial institutions, the sophistication of new payment systems, and the availability of alternative assets to keeping money are all positive effects of advancements in the financial sector on the economy. customized to fulfill the needs of financial participants, according to Cherotich et al. (2015). The main causes of this are technological advancements and an increase in rivalry as institutions become more numerous.

2.3.2Capital Adequacy

The gap between a bank's liabilities or debts, and assets is referred to as bank capital. The government securities, cash, and loans earning interests are included in the asset element of a bank's core capital, whereas loan cost reserves and other debt are included in the liabilities portion. If a bank were to sell its assets, its core capital would be the amount needed to cover creditors' claims Koima et al., (2017).

The money used to launch a bank's operations might be its core capital, which can take the form of issuance and paid-up shares. The bank's capital funds over time show the accumulated capital. The amount of capital a financial institution including banks must maintain in order to comply with the financial regulator, is known as core capital Zerfeshewa, (2010). A ratio of equity classified under the core capital that must be kept as a proportion of risk-weighted assets is typically used to express this. The amount of capital that a financial organization needs and retains in order to efficiently perform its financial activities prudently is known as capital adequacy.

In the position of a bank, the bank’s core capital typically depends on various elements, including the bank's size, operational risks, forces interacting with the market, lending policies, and managerial qualities Tokefun & Asikhia, (2013). Additionally, it is based on the bank's cash and assets in its portfolio.

The regulatory authorities are currently using bailout measures to keep the financial system afloat, making capital adequacy of a bank extremely important. Even so, there are currently adequate capital levels to be taken into consideration for rising risk levels, and this has been a point of contention between supervisory authorities like CBK and the bankers Barus et al., (2017).

2.3.3Size of customer base

A bank's size is typically determined by its assets, such as the number of its customers. According to a study by Goddard et al. (2004), the size of the bank's client base and its financial success are significantly and favorably correlated. This is related to the fact that a bank's cost of borrowing capital decreases as it grows larger, leading to improved profitability ratios. Due to a number of factors, the commercial bank size or any other corporate organization in terms of its clientele is a crucial factor in determining its profitability.

Commercial banks with a sizable client base can expand their business geographically into areas with less intense competition or virtually unexplored market. Such a move would meaningfully expand the bank's customer base, and raise customer deposits Goddard et al., (2004). It's crucial to keep in mind that commercial banks make the majority of their profits by lending to borrowers and reinvesting consumer deposits.

Increased customer deposits imply a higher lending potential for the bank. With such a high lending capacity, the bank will be able to generate more revenue from loans and report profit margins that are higher than commercial banks with a smaller customer base. Therefore, it is evident a correlation exists between a bank's profitability or financial level of success and customer base size Ongore & Kusa, (2013). The notion that a meaningful expenditure in technology that boost the company's efficiency can be made by banks with more is another aspect of the association between profitability and customer base of the bank.

One strategy to enhance the performance of the commercial banks is to make investments in technical advancements as well as to enter into joint ventures with technological enterprises, such as businesses that offer services in mobile money transfer. For instance, Kenya Commercial Bank, one of the major commercial banks in Kenya by assets, has partnered with mobile networks including Safaricom to create a platform for mobile money transfer that has significantly increased its incomes and, as a result, its profitability Ongore & Kusa, (2013).

2.3.4Size of Loan Advanced

Based on the bank theory, the credit risk, interest risk, operating risk, portfolio risk, risk of credit deficiency, and trade union risk are the six (6) basic forms of risk that are linked to the bank's credit policies. However, the credit risk is the most significant of these concerns, so it requires special consideration and handling Barus et al., (2017). Assets are the monies made available to clients as credit. Simiyu (2016) carried research on impact of loan book on bank profitability and discovered that increasing a bank's loan selection and results indicated an inverse correlation among study variables.

Additionally, it was discovered that as banks' loan portfolios grew, the number of non-performing loans rose in the years that followed. These results confirm those of Amahalu et al. (2016), who found that increases in growth of current loan are accompanied by surges in loan losses in succeeding financial years. Diversification is taken to be a method of reducing financial loss exposures. However, as banks expand their loan portfolios, the study's findings did not prove that diversification of the loan portfolios lessens the issue of problematic loans. In the financial markets, interest rates serve as a pricing mechanism for loans Hindi & Ngaba, (2018). As the law of demand typically predicts, reduced prices (lower interest rates in the case of loans) would encourage greater demand. In order to draw in more borrowers and expand their loan book, commercial banks typically cut their lending rates. The study also discovered that commercial banks become more cautious with their lending after successful financial periods. Banks don't pay much attention to borrowers' credit histories during economic expansions Simiyu, (2016).

2.3.5Macroeconomic Factors

These factors include the GDP, Inflation, Interest Rates, and Political Instability. For instance, the demand for bank assets is influenced by the trend of the GDP. The demand for lending decreases when GDP growth slows, which has an adverse effect on profitability of a bank. Because of the nature of the economic cycle, credit is in high demand in a booming economy as demonstrated by positive GDP growth. Compared to a recession, the demand for loan is higher during a boom Athanasoglou et al., (2005). The same authors claim that the connection between inflation levels and bank profitability is still up for debate in relation to the Greek situation.

2.4 Empirical Studies

A descriptive research design was used in the Akhisar et al. (2015) study on the impact of innovations on performance of banks in Turkey. Secondary data was gathered from various countries. The study purposed to evaluate the effect of debit and credit cards, ATMs, POS (point of sale terminals), and online banking. It was discovered that the performance of banks was negatively impacted by both POS and internet banking. On the other hand, the performance was positively impacted by the ratio of ATMs to bank branches. The study came to the conclusion that ATMs are advantageous to banks considering that they enhance performance.

Additionally, Fu-Qiang and Sajid (2014) conducted a study to determine whether the adoption of debit cards had an impact on the commercial bank's profitability in Sri Lanka. Return on Assets was used to gauge bank performance. They gathered data for their study over a ten-year period, and descriptive statistics were employed to present the results. It was shown that the use of debit cards and profitability were positively correlated. This demonstrates that commercial banks benefit from innovations.

Additionally, Dauda and Akingbade (2011) conducted research on Nigerian banks' performance. The paper evaluated the function of financial innovation and its effects on output. Primary data was gathered by sending out questionnaires. Additionally, the study looked at how much financial innovations impacted both consumer satisfaction and profitability. To test the theory, fifteen banks were chosen as a sample. The study found that innovations had a three-fold impact: they improved service delivery, which increased the lenders' profitability, and they encouraged employee motivation.

In a different study, Francesca and Claeys (2010) investigated the function of online banking services in advancing the strategic objectives. 60 significant European Union-based banks participated in the study. According to the study, banks that wanted to increase their market share were more likely to adopt financial innovations like internet banking because it would allow them to reach more clients. However, banks that were completely relied on the internet were found to have poor performance because they had invested a significant amount of capital in the venture to offer online banking, and the future labor cost savings were insufficient to cover the initial capital investment.

Last but not least, Yin and Zhengzheng (2010) conducted research in China with the intention of examining the changes in operations brought on by technological advancements. According to their study, banks that embraced new methods were more profitable. A bank may see lower operational costs when it adopts streamlined procedures, like using internet banking. As a result, the commercial bank may reduce expenses while also performing better. Consequently, research is needed to determine how this process affects the performance of commercial banks.

Locally, Cherotich et al. (2015), using a descriptive statistic with data gathered from CBK records, evaluated the impact of innovations on banks' performance. The analysis included the 5-years up to 2013. The results from regression model indicated that changes in Return on Assets are highly influenced by checks, EFTs, and RTGS. Furthermore, each of these factors had a statistically significant favorable influence on the institution’s performance.

In order to evaluate the impact of internet banking, credit and debit cards, agency banking, and mobile banking on bank performance, researchers looked at these four areas. The study included both primary data—firsthand information gathered through the distribution of secondary data and survey questionnaires. Analysis covered a period of four years beginning in 2008. It was discovered that every factor had a favorable impact on performance. Additionally, every factor examined has a large impact on Kenyan banks' earnings. The findings affirm and agrees with what other related findings have indicated.

Gichungu and Oloko's (2015) study sought to determine whether bank innovations had an impact on banks' performance. The researcher sought to determine whether agency banking, ATM usage, internet and mobile banking, and performance of banks were impacted. The yearly reports of the bank were mined for secondary data. The results are presented in descriptive statistics. The regression model showed that these factors had a big impact on performance. All of the variables were statistically significant in affecting the institutions' performance and were important predictors of the entities' financial success.

Mwangangi did more research on the effect of financial innovations on the banking sector's success (2011). Financial innovation characteristics, according to the study's findings, show a substantial positive link to the performance of Kenya's commercial banks, having a considerable impact on that performance. Because an organization can't foresee the future,

there is uncertainty. As a result, the degree of competition, complexity, and uncertainty all have an impact on organizational effectiveness.

Finally, Monyoncho (2015) was interested in ascertaining whether innovations in banking had an influence on the financial performance of Kenyan banks. His study used a descriptive analysis that took into account all 44 banks. The results of the ANOVA test showed that the use of credit and debit cards, ATMs, mobile banking, and online banking significantly impacted bank performance. Additionally, the model showed that each factor had a significant favorable influence on the banks' performance.

2.5 Conceptual Framework

The relationship between financial innovations and the financial performance of commercial banks was revealed through a conceptual framework. Innovations, bank size, total assets, and loans advanced are the study's independent factors, while the dependent variables are revenue from assets (ROA).

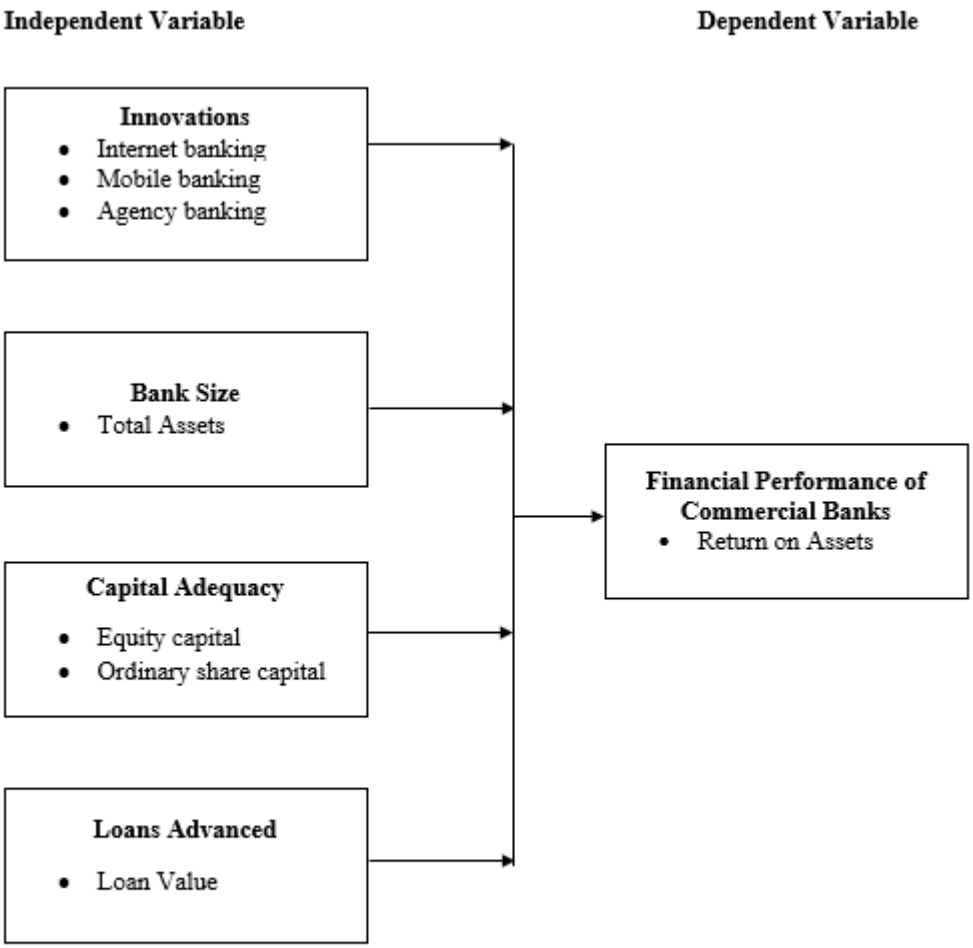

Figure 1.1; Effects of Financial Innovation on Performance of Commercial Banks

Source: (Author, 2022)

2.6 Summary of Literature Review

Numerous local academics have conducted studies that have highlighted the elements of financial innovation, including online banking, mobile banking, and electronic fund transfers. Gichungu and Oloko (2015) conducted one of the research projects, with the factors of the study included the evaluation of agency banking, mobile banking, utilization of ATMs,and online banking. Study factors used by Muiruri and Ngari (2014) included evaluating the impact of credit cards, mobile banking, agency banking, and online banking.

Monyoncho (2015) identified internet banking, credit and debit cards, ATMs, mobile banking, and other financial innovation variables. EFTs, RTGs, and cleared cheques were variables of financial innovation according to Cherotich, Sang, Shisia, and Mutungu (2015). As a result, commercial banks are adopting innovations. Research on the impact of these innovations on Kenya's commercial banks are required. There is a research gap because no

studies evaluating the influence of financial innovations on the commercial bank's financial performance in Kenya have been conducted.

According to the literature analysis, earlier studies only focused on a small number of innovation-related characteristics, however this study includes additional crucial variables that earlier studies left out, making the study more thorough. Therefore, this study aims to close these important gaps in the literature by examining how financial innovation affects the commercial banks' financial performance.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The research design, the intended audience, the method of data collection, and data analysis were all illustrated in this chapter. The chapter specifically looked at and discussed the descriptive correlational research approach as the research design considered for the study. It also discussed the composition of the study targeted population, the sampling frame, and how the sample size was reached at. The chapter also discussed the methods of data collection, type of data collected, and the approach to data analysis including developing the regression model.

3.2 Research Design

This study used a descriptive correlational research approach since it described the current situation and makes hypotheses about how financial innovations affect banks' financial performance. Descriptive analysis, according to Mugenda and Mugenda (2006), is used to characterize the research phenomena as it manifests itself in the field without manipulating any variables. The study used descriptive methodologies designed to address the existing state of affairs. This is important for determining how financial innovation affects the performance of commercial banks. In this study, a descriptive approach was selected to determine whether there was a linear relationship between the study variables.

3.3 Target Population

According to Saunder et al., a study population is a group of incidents, individuals, or objects that have one thing in common and are the subject of the investigation (2009). 42 commercial banks with CBK licenses made up the study's target population. The intended audience was both easily reachable and general study participants. To choose Commercial Banks for the study, a straightforward random sampling process was used. The goal of this strategy was to guarantee every object had an equal probability of being chosen because the groups were homogeneous.

3.4. Sampling Frame

Tier	Number of Banks	proportions	Sample size
Tier 1	6	14 percent	6
Tier 2	14	33 percent	14
Tier 3	22	53 percent	22
Total		**100 percent**	**42**

Sampling techniques are the procedures employed by researchers to choose their samples. The sample offers the required data, which may be processed and examined to produce valuable information. Kothari (2006). A stratified random sample technique was used in the study. The use of random sampling was used since it allows the researcher to focus on a particular region while also drawing conclusions about the study population. A stratified random technique was employed in this investigation. Stratified random sampling was utilized to represent diverse respondents from various strata in order to obtain the ideal sample size.

3.5 Data Collection

The chosen approach was secondary data. For a period of five years, from 2017 to 2021, data on the chosen financial innovations—including mobile banking, internet banking, and EFTs—was gathered utilizing a data collection form. Additionally, from 2017 to 2021, secondary data on the ROA of commercial banks was gathered from respective sources.

3.6 Data Analysis

3.6.1 Diagnostic Tests

The diagnostic procedure undergone comprised tests for stationarity, multicollinearity, autocorrelation, model specification, and normality. The stationarity test was used to determine whether statistical properties like variance, mean, and autocorrelation vary over time. Skewness and kurtosis were used to test for normality, while the Durbin Watson test was used to assess autocorrelation. In the end, tolerance thresholds and variance inflation factors (VIF) were used to determine multicollinearity.

3.6.2 Analytical Model

With the use of SPSS, descriptive design was the preferred way of data analysis and inferential statistics. The mean, standard deviation, and other summary statistics are examples of descriptive statistical methods. Correlation and regression analysis are two examples of inferential statistics that were used to establish the links.

The regression equation for the study was:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where:

Y = Return on Assets of commercial banks

β_0 = Constant

X_1= Innovations

- Mobile banking given by Log total value of mobile banking transactions.
- Internet banking given by Log total value of internet banking transactions.
- Agency banking given by Log total value of agency banking transactions.

X_2 = Capital Adequacy given by bank capital to total assets

$X3$= Loans Advanced given by the maximum loan value to collateral value

X_4 = Log of total assets representing the Bank Size.

β_1 - β_4 = Regression coefficients

ε = Error Term

3.6.3Tests of significance

ANOVA was used to verify accuracy and reveal the importance of the overall model. F-confidence statistic's interval was 95%. The importance of the variables was evaluated using the t-test.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND INTERPRETATION

4.1 Introduction

This section depicts the results of the research and the discussions of the findings. The chapter illustrates the response rate results, correlation, regression and the interpretation of the findings.

4.2 Response Rate

The study population undertook a census of the 42commercial banks licensed under CBK as at 31 December2021 and collected secondary data from the commercial banks' financial reports for 5 years 2017-2021. It however managed to obtain data from 39commercial banks. The 39 commercial banks led to a 92.86% response.

4.3 Descriptive Statistics

The collected data was summarized as shown under table below.

Table 4.1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Dev	Skewness	Kurtosis
ROA	195	-.2440	0.1400	0.00694	0.038682	-3.471	19.613
MB	195	4.323	5.5855	5.09096	0.319403	.799	-.187
IB	195	8.473	17.293	14.32992	1.605652	-1.310	-.163
AB	195	8.347	17.539	14.45197	1.781150	-1.160	-.425
CA	195	.0280	2.1257	.247485	.212457	1.995	.366
AQ	195	.0009	38.5559	.365154	2.8284459	-.017	-1.794
BS	195	14.7765	20.6163	17.725991	1.3648773	.453	.350
Valid N (Listwise)	195						

Source: Research Data

Average Return on Assets (ROA) was 0.00644 with minimum and maximum -2.44 and 0.70 correspondingly while Mobile Banking (MB) was 5.09096 with maximum value and minimum of 4.323 respectively. Internet Banking (IB) averaged 14.3299 with

minimum/maximum 8.473 and 17.293 while Agency Banking (AB) averaged 14.45197 with minimum/maximum 8.347 and 17.539. Study also shows the average value of Capital Adequacy (CA) of 0.247485 with minimum/maximum 0.0280 and 2.1257 whereas Asset Quality (AQ) was .365154 with minimum/maximum values of .0009 and 38.5559 correspondingly. Finally Bank Size (BS) averaged 17.7260 while minimum/maximum were 14.7765 and 20.6163 correspondingly. Kurtosis and skewness are within the range of +3 and -3 thus an indication of normality among the study variables.

4.4 Diagnostic Tests

4.4.1Regression Assumptions Tests

This test is revealed in table 4.2 below;

Table 4.2 Autocorrelation Test

Model	Durbin-Watson
6	1.291

Source: Research Data

Durbin-Watson statistic value of 1.291 is above the zero value but below four which is an indication of an absence of autocorrelation.

4.4.2 Stationarity Test

This study was carried out through Augmented Dickey Fuller (ADF) as shown in the table below.

Table 4.3 Stationarity Test

Variable	Test statistics	P value
ROA	-4.88069	0.0007744
Mobile Banking	-5.35027	0.0001492
Internet Banking	-5.54835	0.0000723
Agency Banking	-6.05280	0.0001000
Capital Adequacy	-4.99607	0.0007455
Asset Quality	4.99607	0.0007455

Bank Size	-5.53585	0.0000632

Source: Research Data

The p values lie above 0.05. this is an indication of stationary implying that data is appropriate to be used in forecasting.

4.4.3 Multicollinearity Test

Variance of Inflation (VIF) of the study are revealed by the results of Table 4.4below.

Table 4.4 Multicollinearity Test

Variable	Tolerance	VIF
Mobile Banking	.199	5.035
Internet Banking	.237	4.211
Agency Banking	.254	3.932
Capital Adequacy	.917	1.091
Asset Quality	.935	1.070
Bank Size	.163	6.129

Source: Research Data

The study results show values which range from 1-10 which is an indication of the absence of multicollinearity. Additionally, tolerance levels of above 0.15 validates VIF further.

4.4.4 Heteroscedasticity Test

Heteroscedasticity tests are revealed in table 4.5 below.

Table 4.5 Heteroscedasticity Test

Breusch-Pagan test
Test statistic: LM = 3.277809,
with p-value = P(Chi-square (5) > 3.277809) = 0.49943

Source: Research Data

The Breusch Pagan (P=0.49943) which are less than 0.5 indicates nonexistence of heteroscedasticity as well as data being homoscedastic. Homoscedasticity exists where the error term doesn't vary across the independent variables.

4.4.5 Normality Test

It's used to test whether data is normally distributed. This is conducted using Kolmogorov-Smirnov test and Shapiro-Wilk test, if P≥0.05 then the data is normally distributed.

Table 4.6: Test for Normality

	Kolmogorov-Smirnov			Shapiro-Wilk test		
	Statistic	Df	Sig.	Statistic	Df	Sig.
ROA	0.326	195	0.112	0.869	195	0.078
Mobile Banking	0.408	195	0.207	0.918	195	0.102
Internet Banking	0.272	195	0.063	0.881	195	0.094
Agency Banking	0.124	195	0.057	0.874	195	0.091
Capital Adequacy	0.176	195	0.061	0.892	195	0.101
Asset Quality	0.567	195	0.365	0.923	195	0.120
Bank Size	0.644	195	0.412	0.874	195	0.094

a. Lilliefors significance Correction

Source: Research Data

The value P≥0.05 implies the researcher rejects null hypothesis and accepts alternative hypothesis.

4.5 Correlation Analysis

Correlation checked the study variation (joint) among the variables to establish the extent of association between them as well the strength amongst study variables.

Table 4.7 Correlation Results

		ROA	MB	IB	AB	CA	AQ	BS
ROA	Pearson correlation Sig.(2 tailed	1						
MB	Pearson correlation Sig.(2 tailed	-.011** .001	1					
IB	Pearson correlation Sig.(2 tailed	.011** .440	.801** .000	1				
AB	Pearson correlation Sig.(2 tailed	-.042** .441	.833** .000	.786** .000	1			
CA	Pearson correlation Sig.(2 tailed	.055** .222	.243** .000	.222** .001	.220** .001	1		
AQ	Pearson correlation Sig.(2 tailed	-.464** .000	.044** .272	.068** .171	.035** .311	.157** .014	1	
BS	Pearson correlation Sig.(2 tailed	.189** .004	.866** .000	.855** .000	.821** .000	.223** .001	-.029 .344	1

The results reveal that six independent variables correlate with each other. This implies that the higher investment in Mobile banking, the higher the ROA. These are some of the factors as to why commercial banks are investing heavily on mobile banking Apps as the Financial sector is highly competitive and banks have to be highly innovative in order to remain competitive in the sector. It is the more innovative commercial banks like KCB and Equity which dominate the banking sector and report high turnovers. This is an implication commercial banks should endeavor to come up with innovative products for their customers in order to survive in an ever-increasing competition in the sector.

The researcher observed an existence of a weak correlation linking the independent variables. This reveals that the independent variables are strong forecasters of commercial banks performance. Additionally, weak correlation makes it for regression to establish the strength and direction of the correlation. They further reveal there is an absence of Multicollinearity among study variables.

4.6 Regression Analysis

It was undertaken to establish the statistical relation of the variables.

4.6.1 Model Summary

The model summary results are revealed below.

Table 4.8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
6	.629[f]	.396	.376	.0305486

a. Predictors: (Constant), MB, IB, AB, CA, AQ, BS

b. Dependent Variable: ROA

Source: Research Data

Results shows that coefficient of determination is 0.396 an indication 39.6% variation is caused by the model independent variables (MB, IB, AB, CA, AQ, BS). Thus, 60.4% are caused by factors outside the model.

4.6.2 Analysis of Variance

Table 4.9: ANOVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
6	Regression	.115	6	.019	20.509	.000[g]
	Residual	.175	188	.001		
	Total	.290	194			

a. Dependent Variable: ROA

b. Predictors: (Constant), MB, IB, AB, CA, AQ, BS

The ANOVA test is carried out to reveal whether the independent variables is suitable in predicting the dependent variable with accuracy hence the model is suitable. The study results show a P 0.00 which is less than alpha 0.05, hence independent variables are fit in predicting dependent variable accurately.

Table 4.10
Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-.004	.009		-.370	.712
	Mobile Banking	-.012	.004	.386	-3.033	.003
	Internet Banking	-.003	.001	-2.41	-2.072	.040
	Agency Banking	-.004	.001	-.337	-2.996	.003
	Capital Adequacy	.023	.011	.125	2.114	.036
	Asset Quality	-.006	.001	-.410	-6.996	.000
	Bank Size	.009	.001	.966	6.883	.000

a. Dependent Variable: ROA

$Y= -.004 -0.012X_1 - 0.003X_2 -0.004X_3 + 0.023X_4-0.006X_5 +0.009X_6$

Regression results reveal that, Mobile banking had weak inverse correlation to Commercial banks ROA (*Beta*= -0.012, P=.003). this is an indication that 0.012 increment in mobile banking innovation would result to 0.012 reduction in commercial banks ROA results from a unit increment in Mobile banking. The findings further reveal that Internet banking had weak inverse influence on the Commercial banks ROA (*Beta*= -0.003, P=.040). this is an indication that a unit change in the Internet Banking leads to 0.003 reduction in Commercial banks performance. Findings further reveal that Agency Banking has a significant direct influence on the performance of commercial banks (*Beta*= -0.004, P=.003). The results show that a unit change in agency banking results to 0.004 decrease in Commercial banks performance. The findings further reveal that capital adequacy has a significant direct influence on Commercial banks performance (*Beta*= 0.023, P= .036). This implies, a unit change in capital adequacy results to 0.023 increase in Commercial banks performance. Further, the results indicates that there exists an inverse correlation between Asset quality

and commercial banks performance (*Beta*= -0.006, P= .000). the results reveal that an increment in Asset quality led to a reduction in commercial banks performance by 0.006 units. Finally, bank asset to commercial banks ROA (*Beta*=0.009, P= .000). This is an indication of a direct linking study variables; a unit change in Bank size will lead to 0.411 increase in Commercial banks performance. The results concur with those of Adeoye, (2012)**;** innovation variations are always putting pressures on banks performance, and that in order to adapt, banks have to devise and adopt technologies aimed at reducing operational costs.

4.7 Discussion of Research Findings

The study aimed to establish the effect of financial innovations on financial performance of commercial banks in Kenya. The population undertook a census of the 42commercial banks licensed under CBK as at 31 December 2021 and collected secondary data from the commercial banks' financial reports for 5 years 2017-2021. It however managed to obtain data from 39commercial banks. The 39 commercial banks led to response rate of 92.86%.

The regression revealed an existence of an inverse link between mobile banking to commercial banks performance. These findings are in line with those of Monyoncho (2015) was interested in ascertaining whether mobile banking had an influence on the financial performance of Kenyan banks. The results showed that the use of mobile banking impacted bank performance.

In addition, results indicate an inverse correlation exists between Internet banking and Commercial banks ROA (*Beta*= -0.003, P=.040). The findings are similar to those of Francesca and Claeys (2010) on the function of internet banking services in commercial banks performance where study results revealed banks that wanted to increase their market share were more likely to adopt financial innovations like internet banking because it would allow them to reach more clients.

The results further show that Agency banking had an inverse correlation to commercial banks performance (*Beta*= -0.004, P=.003). these results concur with the study of Gichungu and Oloko's (2015) which sought to determine the impact of Agency banking on banks' performance. Findings reveal Agency banking had a negative impact on performance of commercial banks.

In addition, findings revealed that capital adequacy had a weak direct influence on Commercial banks performance (*Beta*= 0.023, P= .036). Tokefun and Asikhia, (2013) study which revealed that the impact of the bank's core capital typically depends on various elements, including the bank's size, operational risks, forces interacting with the market, lending policies, and managerial qualities. Additionally, it is based on the bank's cash and assets in its portfolio.

Further, the results indicates that there exists a positive correlation between Asset quality and commercial banks performance (*Beta*= -0.006, P= .000). credit risk is the most significant of these concerns, so it requires special consideration and handling Barus et al., (2017). Assets are the monies made available to clients as credit. Simiyu (2016) carried research on impact of loan book on bank profitability and discovered that increasing a bank's loan selection and results indicated an inverse correlation among study variables.

Finally, bank size to commercial banks ROA (*Beta*=0.009, P= .000). A bank's size is typically determined by its assets, such as the number of its customers. Goddard et al. (2004), the size of the bank's client base and its financial success are significantly and favorably correlated. This is related to the fact that a bank's cost of borrowing capital decreases as it grows larger, leading to improved profitability ratios.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The section entails the summary of the study, the conclusions and recommendations as well as the study limitations.

5.2 Summary

Descriptive results revealed that Average Return on Assets (ROA) was 0.00644 with minimum and maximum -2.44 and 0.70 correspondingly while Mobile Banking (MB) was 5.09096 with maximum value and minimum of 4.323 respectively. Internet Banking (IB) averaged 14.3299 with minimum/maximum 8.473 and 17.293 while Agency Banking (AB) averaged 14.45197 with minimum/maximum 8.347 and 17.539. Study also showed the average value of Capital Adequacy (CA) of 0.247485 with minimum/maximum 0.0280 and 2.1257 whereas Asset Quality (AQ) was .365154 with minimum/maximum values of .0009 and 38.5559 correspondingly. Finally Bank Size (BS) averaged 17.7260 while minimum/maximum were 14.7765 and 20.6163 correspondingly. Kurtosis and skewness are within the range of +3 and -3 thus an indication of normality among the study variables.

The regression revealed an existence of a negative correlation linking mobile banking to commercial banks performance (*Beta*= -0.012, P=.003). The findings further indicated that Internet banking had weak inverse influence on the Commercial banks ROA (*Beta*= -0.003, P=.040). The results of the regression analysis further show that Agency Banking weak positive influence on the performance of commercial banks (*Beta*= -0.004, P=.003). The regression findings also indicated that capital adequacy positively influenced Commercial banks performance (*Beta*= 0.023, P= .036). Further, the results indicates that there exists an inverse correlation between Asset quality and commercial banks performance (*Beta*= -0.006, P= .000). Finally, bank size to commercial banks ROA (*Beta*=0.009, P= .000). Revealing a direct link between study variables, a unit change in Bank asset leads to 0.009 increment in Commercial banks performance.

5.3Conclusions

The study objective was to establish the effect of financial innovations on financial performance of commercial banks in Kenya. However, study results from multiple regression analysis show an inverse correlation linking mobile banking to commercial banks

performance as revealed by beta of -0.012. This indicates that mobile banking had a weak inverse link to commercial banks' performance. Therefore, the study concludes that there is a statistically influence of mobile banking on commercial banks performance.

Further, study results from multiple regression analysis show Internet banking inversely influenced on the Commercial banks performance with a beta -0.003 implying that internet banking had weak inverse relation with performance of commercial banks in Kenya. Therefore, there is a statistically influence of internet banking on the performance of commercial banks in Kenya.

Further, study results from multiple regression analysis show a weak influence of Agency Banking on ROA as indicated by a beta -0.004 implying that Agency banking inversely influenced ROA. Therefore, the study upholds that there is a statistically weak influence of Agency Banking on ROA.

The study further tested the correlation linking capital adequacy to ROA. The findings from regression analysis revealed a beta of 0.023 which is an indication that capital adequacy had direct significant influence on performance of commercial banks. Therefore, the study states that there is a statistically influence of capital adequacy to the Commercial banks' ROA.

The study further tested the correlation linking Asset quality and commercial banks performance. The study results from multiple regression analysis show an inverse correlation between Asset quality and commercial banks performance showed by a beta -0.006 implying that asset quality negatively impacted on commercial banks' ROA. Therefore, the study states that there is an inverse effect of asset quality on performance of Commercial banks.

Finally, the study tested the correlation linking bank size to the performance of Commercial banks. Findings from regression revealed significant effect of bank size on commercial banks' ROA as revealed by beta 0.009 hence bank size has a significant direct influence on performance of commercial banks. Therefore, the study states there exist an influence of bank size to Commercial banks' ROA.

5.4 Policy Recommendation

There has been quite a debate that the banks which have not taken keen notice on financial innovations have lagged behind in terms of their profitability compared to those banks that have embraced innovation. One of the main reasons that advocates of financial innovation reiterate is it improves banks efficiency as customers can transact with ease wherever they are

without visiting banks. However, study findings reveal that there is statistically significant and positive increase in financial performance due to financial innovations. These findings would therefore be of use in support of financial innovation.

The study showed that there was a significant inverse effect of Asset quality and performance of commercial banks. This would also be a guiding principle in determining on whether to continue with adopting the collateral value of loans advanced or not.

The study findings also indicated that financial innovations reduced the operational costs for the commercial banks. According to the Technology Accepted Model, effective adoption of the new technologies, as well as people's attempts to learn and their first efforts focus on how technological shifts are helping in learning new processes. Stakeholder in the banking sector would therefore find the findings of this study relevant in helping them make decision on adoption of technology to improve their performance.

5.5 Limitation of the Study

One of the greatest challenges in this research was related to obtaining accurate data. Since the research used secondary data from the commercial banks' annual financial reports, the researcher did not have control over the accuracy of the data.

The other challenge which the researcher experienced related to the type of the model the researcher used. The mixture of cross-sectional data and time series forms a panel data which cannot be analyzed using the simple ordinary regression methodology. The researcher resolved this problem by using an independent sample t test.

5.6 Suggestion for Further Studies

The study was on the effect of financial innovations on performance of commercial banks in Kenya for a period of five years. The major assumption of the model used by the researcher is that there were no other major events that affected financial performance of commercial banks in Kenya apart from financial innovation. Subsequent studies should be carried out to ascertain if there were other major events that may have affected the financial performance of commercial banks in Kenya.

Further, the study assumed that only mobile banking, Internet banking, Agency banking, capital adequacy, Asset quality and bank size affected financial performance of commercial banks in Kenya. Further research should be undertaken in order to establish whether there are

other factors that may have had an effect on the financial performance of commercial banks in Kenya apart from the variables undertaken in the study.

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APPENDIX I

1. KCB Bank
2. Investments & Mortgages Bank Limited –
3. Imperial Bank Limited
4. Housing Finance
5. Guardian Bank Ltd.
6. Giro Commercial Bank Ltd
7. Fina Bank
8. Fidelity Bank
9. UBA Kenya Bank Ltd
10. The Co-operative Bank
11. Suntra Investment Bank Ltd
12. Sterling Investment Bank
13. Standard Investment Bank
14. Standard Chartered
15. Prime Bank
16. Paramount Bank
17. Oriental Commercial Bank Ltd.
18. NIC Bank
19. ABC Bank
20. National Bank
21. K-Rep Bank
22. Kenya Post Office Savings Bank
23. Faida Investment Bank – FIB
24. Equity Bank
25. Equatorial Investment Bank
26. Equatorial Commercial Bank Limited
27. Dyer & Blair Investment Bank
28. Dubai Bank Kenya Ltd
29. Dry Associates Limited
30. Development Bank of Kenya Ltd
31. Co-operative Bank
32. Consolidated Bank
33. Commercial Bank of Africa
34. Citibank N A
35. Chase Bank
36. CFC Stanbic Bank Limited
37. Central Bank of Kenya
38. Bank Of Baroda (Kenya) Ltd.
39. Bank of Africa Kenya Ltd
40. Afrika Investment Bank
41. African Development Bank Group
42. African Banking Corporation

APPENDIX II

Bank	Year	ROA	Mobile banking	Internet banking	Agency banking	Capital adequancy	Asset Quality	Bank size
KCB	2017	0.008	5.35	13.449	9.653	0.1645	0.1426	16.9342
	2018	0.003	5.338	14.595	11.265	0.1528	0.1566	16.9451
	2019	0.006	5.446	14.645	10.369	0.156	0.1829	17.0576
	2020	0	5.365	14.883	9.626	0.1844	0.1989	17.1451
	2021	0.002	5.439	15.079	13.454	0.1538	0.149	17.1964
I&M	2017	-0.015	5.429	14.605	13.449	0.1639	0.2325	18.0537
	2018	0	5.476	15.989	14.595	0.1616	0.2606	17.8408
	2019	0.001	5.514	15.922	14.645	0.1578	0.2816	17.808
	2020	0.004	5.511	15.858	14.883	0.1602	0.3383	17.709
	2021	-0.046	5.544	15.785	15.079	0.1083	0.4139	17.5996
Housing Finance	2017	0.03	5.465	13.76	14.605	1.9617	0.0754	18.0376
	2018	0.036	5.588	14.577	15.989	0.3053	0.0846	18.2332
	2019	0.041	5.184	14.94	15.922	0.3229	0.0586	18.3812
	2020	0.032	5.152	14.722	15.858	0.3466	0.0882	18.6278
	2021	0.029	5.261	15.115	15.785	0.3274	0.0828	18.7805
Guardian Bank	2017	0.035	5.229	15.332	13.76	0.184	0.042	19.2998
	2018	0.028	5.289	13.573	14.577	0.1786	0.0521	19.3751
	2019	0.026	5.247	14.286	14.94	0.1803	0.0556	19.4197
	2020	0.023	5.303	14.465	14.722	0.1638	0.061	19.6003
	2021	0.02	5.331	14.998	15.115	0.1667	0.056	19.7397
Guardian Bank	2017	0.026	5.33	11.145	15.332	0.423	0.0202	17.5571
	2018	0.034	5.348	12.798	13.573	0.4574	0.0139	17.6829
	2019	0.037	5.314	12.5	14.286	0.5397	0.0207	17.8521
	2020	0.031	5.419	12.966	14.465	0.4392	0.0713	17.9537
	2021	0.037	4.96	14.089	14.998	0.4842	0.0936	17.9514
Giro Commercial	2017	0.039	5.092	13.254	11.145	0.2832	0.058	18.2945
	2018	0.033	5.125	14.251	12.798	0.2637	0.0192	18.4534
	2019	0.04	5.11	13.175	12.5	0.2555	0.0368	18.4028
	2020	0.037	5.166	14.129	12.966	0.2764	0.0162	18.2656
	2021	0.03	5.166	12.968	14.089	0.2715	0.0257	18.3858
Fina Bank	2016	0.017	5.207	15.661	13.254	0.1792	0.1059	19.1891
	2017	0.029	4.737	16.21	14.251	0.1845	0.0745	19.2507
	2018	0.023	4.76	15.935	13.175	0.1732	0.0831	19.3199
	2019	0.023	4.837	16.061	14.129	0.1573	0.0797	19.3172
Fidelity Bank	2017	0.003	4.765	16.087	12.968	0.0939	0.0553	16.4642
	2018	-0.015	5.855	13.912	15.661	0.079	0.1176	16.4487
	2019	-0.025	4.82	12.143	16.21	0.0509	0.1527	16.4149
	2020	-0.042	4.862	13.89	15.935	0.028	0.1533	16.3718
	2021	-0.045	4.878	14.067	16.061	0.1352	0.2568	16.2888
UBA	2017	-0.006	4.873	14.072	16.087	0.1551	0.0638	16.1464
	2018	0.009	4.925	13.029	13.912	0.2285	0.0722	16.32
	2019	0.009	4.934	13.022	13.143	0.1477	0.0754	16.4904
	2020	0.14	5.012	13.254	13.89	0.1451	0.0724	16.7006

	2021	0.01	4.771	13.502	14.067	0.1496	0.087	16.891
CO-OP Bank	2017	0.034	4.721	13.758	14.072	2.1258	0.0342	19.6518
	2018	0.036	4.692	15.034	13.029	0.2277	0.039	19.6787
	2019	0.029	4.688	15.011	13.022	0.2268	0.062	19.7736
	2020	0.031	4.677	15.578	13.254	0.1618	0.1009	19.8406
	2021	0.031	4.602	16.112	13.502	0.1505	0.0979	19.9402
Suntra Bank	2020	0.004	4.529	16.133	13.758	0.2508	0.2601	16.6135
	2016	0.002	4.547	14.321	15.034	0.2355	0.2098	16.6072
	2017	0.007	4.455	14.378	15.011	0.2323	0.2981	16.5449
	2018	0.07	4.489	14.636	15.578	0.3147	0.3695	16.5472
Sterling Investment	2017	0.024	4.335	14.473	16.112	0.1463	0.0241	19.4199
	2018	0.024	4.323	14.276	16.133	0.185	0.0325	19.6087
	2019	0.019	5.35	14.288	14.321	0.1901	0.0666	19.7107
	2020	0.019	5.338	15.268	14.378	0.2111	0.0629	19.7497
	2021	0.019	5.446	15.616	14.636	0.2091	0.0683	19.7719
Standard Investment	2017	-0.23	5.365	16.384	14.473	0.7005	38.5539	14.775
	2018	-0.119	5.439	16.312	14.276	0.299	0.0037	15.4739
	2019	-0.064	5.429	8.654	14.288	0.1486	0.0095	16.0114
Standard Chartered	2017	0.002	5.476	8.473	15.268	0.2496	0.0622	17.7749
	2018	-0.043	5.514	8.765	15.616	0.1944	0.1628	17.6683
	2019	-0.021	5.511	8.937	16.384	0.1599	0.377	17.7944
	2020	0.04	5.544	8.982	16.312	0.1659	0.1735	17.813
	2021	0.002	5.229	14.51	8.654	0.1622	0.1448	18.138
PrimeBank	2017	0.04	5.289	14.426	8.473	0.2017	0.0272	19.8748
	2018	0.035	5.247	15.198	8.765	0.1966	0.0628	19.9761
	2019	0.036	5.303	15.635	8.937	0.2041	0.0553	20.0779
	2020	0.035	5.331	14.631	8.982	0.1593	0.071	20.1671
	2021	0.036	5.33	15.81	14.51	0.1979	0.0873	20.3283
Paramount	2017	0.024	5.348	15.807	14.426	0.1441	0.0367	18.2134
	2018	0.005	5.314	16.632	15.198	0.2078	0.1197	18.0567
	2019	-0.014	5.419	16.553	15.635	0.1986	0.1923	18.0516
	2020	0.004	4.96	16.488	14.631	0.1952	0.1618	18.0204
	2021	0.012	4.95	13.908	15.81	0.1869	0.1409	18.1831
Oriental	2017	-0.001	4.901	14.147	15.807	0.1145	0.2345	16.4941
	2018	-0.004	4.96	15.608	16.632	0.1399	0.3195	16.521
	2019	0.009	5.067	15.939	16.553	0.1534	0.4078	16.6697
	2020	-0.012	5.027	15.781	16.488	0.0911	0.4882	16.6992
	2021	0.01	5.092	14.201	13.903	0.081	0.4145	16.7474
NCBA	2017	0.009	5.125	14.758	14.147	0.2649	0.0916	17.5282
	2018	0.013	5.11	15.067	15.608	0.2547	0.1108	17.2864
	2019	0.007	5.166	15.193	15.939	0.2387	0.1088	17.2774
	2020	0.002	5.166	15.299	15.781	0.2597	0.1467	17.4516
	2021	0.02	5.207	14.735	14.201	0.2428	0.109	17.1856
ABC	2017	0.016	4.737	14.401	14.758	0.1763	0.0304	16.4972
	2018	0.016	4.76	14.583	15.067	0.1904	0.0169	16.5037
	2019	0.01	4.837	14.62	15.193	0.2022	0.0453	16.5757

	2020	0.014	4.765	14.876	15.299	0.2275	0.0757	16.5997
	2021	0.011	4.855	11.683	14.735	0.222	0.0689	16.612
National BAnk	2017	0.029	4.82	12.546	14.401	0.1577	0.0842	17.0226
	2018	0.018	4.862	11.93	14.583	0.1872	0.0923	17.1171
	2019	0.005	4.878	12.984	14.62	0.162	0.0929	17.2596
	2020	0.004	4.873	13.008	14.876	0.1866	0.1064	17.3218
	2021	0.005	4.925	13.706	11.683	0.1711	0.1534	17.3744
Sidian	2017	0.029	4.934	14.077	12.546	0.3213	0.0792	16.1408
	2018	0.024	5.012	14.217	11.93	0.3911	0.1871	16.3419
	2019	0.011	4.771	14.403	12.984	0.2463	0.0745	16.8845
	2020	0.01	4.772	13.678	13.008	0.2729	0.0922	17.0273
Kenya Post	2021	0.017	4.692	12.438	13.706	0.1813	0.0437	18.0874
	2017	0.013	4.688	12.652	14.077	0.1769	0.0692	18.08912
	2018	0.002	4.677	13.478	14.217	0.17	0.1081	18.0282
	2019	-0.01	4.602	12.387	14.403	0.1534	0.2494	17.919
	2020	-0.002	4.529	13.474	13.678	0.1456	0.2356	17.849
Faida	2021	0.037	4.547	14.836	12.438	0.202	0.0248	19.0716
	2017	0.037	4.455	14.657	12.652	0.1815	0.0289	19.1652
	2018	0.03	4.489	15.143	13.478	0.1858	0.087	19.2966
	2019	0.026	4.335	15.486	12.387	0.1792	0.1079	19.3315
	2020	0.033	4.323	16.198	13.474	0.2156	0.0979	19.4287
Equitorial Investment	2021	0.001	5.35	13.923	14.836	0.1625	0.0517	16.6358
	2017	-0.011	5.338	14.97	14.657	0.2008	0.172	16.5742
	2018	-0.037	5.446	15.174	15.143	0.1933	0.1331	16.3714
Equity	2017	0.035	5.365	16.404	15.496	0.1536	0.0446	20.14
	2018	0.033	5.439	16.372	16.198	0.1801	0.0705	20.2045
	2019	0.03	5.429	13.149	13.923	0.1663	0.0766	20.2873
	2020	0.034	5.476	13.172	14.97	0.1955	0.0627	20.3868
	2021	0.028	5.514	14.291	15.174	0.1903	0.1016	20.6163
Equitorial Commercial	2016	-0.013	5.511	13.916	16.404	0.3933	0.159	15.4706
	2017	-0.005	5.544	13.792	16.372	0.5708	0.1807	15.4489
	2018	0	5.465	15.999	13.149	0.4494	0.3825	15.4946
Dyer & Blair	2017	0	5.588	16.552	13.172	0.3119	0.1374	15.9516
	2018	0.003	5.184	17.119	14.291	0.3869	0.0821	16.1101
	2019	0.009	5.152	17.293	13.916	0.3316	0.0718	16.1741
	2020	0.008	5.261	17.168	13.792	0.3093	0.094	16.1683
	2021	-0.002	5.229	13.112	15.999	0.3442	0.1931	16.3327
Dubai Bank	2017	-0.009	5.289	13.473	16.552	0.1399	0.1116	18.6473
	2018	0.001	5.247	13.262	17.119	0.0715	0.1749	18.5348
	2019	0.007	5.303	13.123	17.293	0.0542	0.3001	18.5148
	2020	-0.001	5.331	13.795	17.168	0.037	0.3913	18.5591
	2021	-0.008	5.33	13.178	13.112	0.115	0.3564	18.5343
Dry Associates	2017	0.027	5.348	13.273	13.473	0.2059	0.0912	18.9262
	2018	0.026	5.314	13.209	13.262	0.2304	0.1126	18.9481
	2019	0.02	5.419	13.166	13.123	0.2227	0.1089	19.1442

	2020	0.02	4.96	13.446	13.795	0.1869	0.1224	19.155
Dubai Bank	2017	0.015	4.95	15.871	13.178	0.2412	0.0519	16.1693
	2018	0.011	4.901	15.84	13.273	0.2741	0.0828	16.0592
	2019	0.012	4.96	16.08	13.209	0.2946	0.1056	16.0711
	2020	0.024	5.067	16.57	13.166	0.2853	0.1318	16.1067
	2021	0.009	0.027	16.744	13.466	0.245	0.1211	16.1615
Development Bank	2017	0.031	5.092	14.117	15.871	0.1729	0.017	17.9899
	2018	0.029	5.125	16.162	15.84	0.2216	0.0362	17.995
	2019	0.029	5.11	16.371	16.08	0.2248	0.0486	18.1721
	2020	0.023	5.166	16.383	16.57	0.3729	0.0606	18.422
	2021	0.024	5.166	16.476	16.744	0.4136	0.1018	18.5049
Consolidated Bank	2017	-0.005	5.207	12.591	14.117	0.1509	0.1025	18.7977
	2018	-0.192	4.737	12.628	16.162	0.1281	0.8832	16.0873
	2019	-0.029	4.76	13.081	16.371	0.1644	0.729	16.2608
	2020	0.019	4.837	13.343	16.383	0.2425	1.2528	18.0733
	2021	0.012	4.765	13.52	16.476	0.2312	0.8521	18.0994
City Bank	2017	0.019	4.855	13.042	12.591	0.2468	0.1284	16.7655
	2018	0.001	4.82	13.456	12.628	0.2325	0.2383	16.8541
	2019	-0.022	4.862	14.169	13.081	0.1646	0.278	16.7757
	2020	-0.015	4.878	14.455	13.343	0.144	0.2035	17.0467
	2021	0.004	4.873	14.617	13.52	0.1793	0.1968	17.0908
SBM Bank	2017	0.024	4.925	13.562	13.042	0.187	0.0411	19.1552
	2018	0.021	4.934	14.29	13.456	0.1812	0.0505	19.1847
	2019	0.017	5.012	14.979	14.169	0.1684	0.0666	19.3319
	2020	0.022	4.771	14.97	14.455	0.174	0.0945	19.4537
	2021	0.021	4.721	14.799	14.617	0.1834	0.0998	19.4947
CFC Stanbic	2017	0.027	4.692	14.378	13.562	0.2116	0.1015	19.2707
	2018	0.036	4.688	14.704	14.29	0.2091	0.0829	19.3389
	2019	0.024	4.677	14.957	14.979	0.1852	0.0896	19.4705
	2020	0.028	4.602	14.831	14.97	0.1947	0.1169	19.4694
	2021	0.027	4.529	14.54	14.799	0.1773	0.0953	19.5264
Bank Of Baroda	2017	-0.034	5.35	16	14.378	0.1745	0.3332	16.4876
	2018	-0.054	5.338	16.274	14.704	0.1627	0.1677	16.4404
	2019	-0.101	5.446	16.135	14.957	0.1265	0.4271	16.2268
	2020	-0.244	5.365	16.242	14.831	0.2201	0.5598	16.0372
	2021	-0.069	5.439	16.445	14.54	0.206	0.7111	15.7413
Bank Of India	2017	0.016	5.429	14.742	16	0.2164	0.1103	16.1624
	2018	0.011	5.476	14.835	16.274	0.223	0.1156	16.1547
	2019	0.004	5.514	14.036	16.135	0.2908	0.2416	16.1419
	2020	-0.007	5.511	14.621	16.242	0.2111	0.2211	16.1414
	2021	-0.009	5.544	14.727	16.445	0.2015	0.2857	16.0475
African Development	2017	-0.034	5.465	13.179	14.742	0.2379	0.018	15.8672
	2018	0.004	5.588	13.505	14.835	0.3868	0.0186	15.5385
	2019	0.003	5.184	13.509	14.036	0.3878	0.0436	15.688
	2020	0.003	5.152	14.283	14.621	0.3316	0.1276	16.5455
	2021	0.004	5.261	14.396	14.727	0.2537	0.2432	16.5936

Africa Investment	2017	0.036	5.229	10.741	13.179	0.193	0.0329	16.8122
	2018	0.026	5.289	10.802	13.505	0.2545	0.0255	16.9247
	2019	0.024	5.247	10.946	13.509	0.2274	0.0008	17.073
	2020	0.014	5.303	11.867	14.283	0.2109	0.0308	17.2917
	2021	0.015	5.331	12.995	14.396	0.2015	0.0506	17.401