

**EFFECT OF FINANCIAL INNOVATION ON PERFORMANCE OF COMMERCIAL
BANKS IN KENYA**

BY

HENDRICA NASIMIYU MISIKO

**A DISSERTATION SUBMITTED IN PARTIAL FULLFILMENT OF THE
REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE COMMERCE IN
ACCOUNTING AND FINANCE IN THE SCHOOL OF BUSINESS AND PUBLIC
MANAGEMENT AT KCA UNIVERSITY**

SEPTEMBER, 2018

DECLARATION

I declare that this dissertation is my original work and has not been previously published or submitted anywhere for the award of a degree. I also declare that this contains no material written or published by other people except where due reference is made and the author dully acknowledged.

Hendricah Nasimiyu Misiko

Reg. No. 17/02403

Sign:.....

Date:.....

I do hereby confirm that I have examined the master's proposal of

Hendricah Nasimiyu Misiko

And have approved it for examination.

Sign:.....

Date:.....

Dr. Tirimba Ibrahim

Dissertation Supervisor

ABSTRACT

With the increased competition in the banking industry and the introduction of the interest rate capping following the concerns of the public on the increased cost of credit in Kenya, which minimized credit access by a large segment of the population, the structure of earnings for the banks have begun to move away from the revenue from the interests. In order to offset the loss on interest income and survive in the highly competitive financial industry, most commercial banks have embarked on innovation and digital channels as a method to generate revenue. This study will search for to determine the effect of financial innovation on the performance of commercial banks in Kenya. There exists several studies on this but fewer studies have been done on the recent innovation and due to their current penetration in the Kenyan markets, there is need to understand their effect on performance of commercial banks. Also, despite most banks in the financial sector adopting the digital financial services which are aimed at increasing performance, there have been several cases of banks going under receivership and others totally closing their operations in Kenya. The study specifically aimed at establishing how internet banking, credit cards, Pesalink and mVisa introduction affect the performance of commercial banks in Kenya. The study was guided by constraint induced financial theory, Diffusion innovation theory, Circumvention theory, Regulation innovation theory. The study population was 41 commercial banks currently operational in Kenya. The target population was the 41 commercial banks currently in service in Kenya. The study adopted a descriptive research design. Semi-structured questionnaires were the tools of data collection and were administered face to face by the researcher to the respondents. Data analysis was done by the use of multiple regression method done by assistance of SPSS software. Analyzed data was then presented in the form of tables and charts. The results of study showed that variations on total customer base of the financial institutions could be explained by changes in financial innovations and in particular; internet banking, Pesalink, credit cards and mVisa which means that internet banking, Pesalink, credit cards and mVisa all affected the performance of commercial banks in Kenya. The study thus recommends that it is important for commercial banks to prudently adopt financial innovations as it has positive effects on performance of commercial banks in Kenya.

Key words: Financial innovation, Commercial banks and performance.

ACKNOWLEDGEMENT

In humility I express my gratitude to the almighty God for all He has done to me and giving me the opportunity to come this far. I also take this opportunity to salute the professional guidance accorded to me by my supervisor, Dr. Ibrahim Tirimba and for his guidance throughout the research period, and remarkably always being available when I needed his guidance, direction and assistance which enabled me to compile this dissertation.

My immeasurable appreciation goes also to my comrades and close family members who have played the role of motivating and supporting me. I hereby acknowledge their contributions and those of everyone who played a role to the success of this dissertation.

TABLE OF CONTENTS

DECLARATION	ii
ABSTRACT	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS	v
DEDICATION	x
LIST OF TABLES	xi
LIST OF FIGURES	xii
ACRONYMS AND ABBREVIATION	xiii
OPERATIONAL DEFINITION OF TERMS	xiv
CHAPTER ONE	1
INTRODUCTION	1
1.1 Background of the Study	1
1.2 Statement of the Problem.....	9
1.3 Research Objectives.....	11
1.4 Hypothesis of the Study.....	11
1.5 Justification of the Study	12
1.6 Scope of the study.....	13
CHAPTER TWO	14
LITERATURE REVIEW	14
2.1 Introduction.....	14
2.2 Theoretical Review	14
2.3 Empirical Review	17
2.4 Conceptual Framework.....	26
2.5 Operationalization of Variables.....	27
CHAPTER THREE	28
RESEARCH METHODOLOGY	28
3.1 Introduction.....	28
3.2 Research Design	28
3.3 Target Population.....	28
3.5 Research Instrument	29

3.6 Validity and Reliability of the Instrument	29
3.7 Data Collection Procedure	30
3.8 Data Processing and Analysis	30
3.8 .1 Diagnostic Tests.....	32
CHAPTER FOUR	34
DATA ANALYSIS, FINDINGS AND DISCUSSION	34
4.1 Introduction.....	34
4.2 Response Rate.....	34
4.3 Demographic Information	35
4.4 Study Variables.....	38
4.5 Diagnostic Tests.....	53
CHAPTER FIVE	64
SUMMARY, CONCLUSION AND RECOMMENDATIONS	65
5.1 Introduction.....	65
5.2 Summary	65
5.3 Conclusion	68
5.4 Recommendations.....	69
5.5 Recommendations for Future Research.....	70
REFERENCES	72
APPENDICES.....	81

DEDICATION

I dedicate this dissertation to my mother Metrine Misiko, late father David Misiko and my fiancée Willis Wasonga. You all believed and invested so much in me even when you owned so little of your own. For what I claim as my achievement you have achieved much more through your dedication to excellence and the opportunities you provided for me and the constant advice and encouragement to press on with my academic journey. Thank you for your ceaseless, selfless and limitless encouragement, motivation and support that you have constantly and relentlessly given me. Without you, I would not have reached this level in my academic life. Truly, you have enabled me achieve and live to so much in this life and for this, I will forever be indebted to all of you.

LIST OF TABLES

Table 2.1: Operationalization of Variables.....	27
Table 4.1: Effect of Internet Banking on Performance of Commercial Banks in Kenya.....	39
Table 4.2: Credit Card Components and their Implementation.....	42
Table 4.3: Pesalink Financial Innovation and Performance of Banks.....	44
Table 4.4: mVisa and Commercial Banks Performance.....	47
Table 4.5: Performance.....	50
Table 4.6: Collinearity diagnostics.....	53
Table 4.7: Model Summary.....	53
Table 4.8: ANOVA.....	54
Table 4.9:Coefficients.....	55
Table 4.10:Correlation.....	56

LIST OF FIGURES

Figure 2.1: Conceptual Framework	26
Figure 2.1: Response Rate	34
Figure 2.2: Gender of Respondents	35
Figure 2.3: Respondents' Age Bracket	36
Figure 2.4: Level of Education	37
Figure 2.5: Financial Innovation.....	38
Figure 2.6: Whether Banks Should Adopt Internet Banking.....	40
Figure 2.7: Whether Banks Should Adopt Use of Credit Cards.....	43
Figure 2.8: Whether Banks Should Adopt Use of Pesalink.....	46
Figure 2.9: Whether Banks Should Adopt mVisa	49

ACRONYMS AND ABBREVIATION

ANOVA	: Analysis of Variance
ATM	: Automated teller machine
CBA	: Commercial Bank of Africa
DW	: Durbin Watson
E-Banking	: Electronic banking
EU	: European Union
KCB	: Kenya Commercial Bank
NIM	: Net Interest Margin
NNI	: Net Interest Income
SPSS	: Statistical Packages for Social Sciences
VIF	: Variance inflation factor

OPERATIONAL DEFINITION OF TERMS

Commercial banks	These are financial institutions regulated by the central banks and whose role is to receive deposits and give credit and transfer of funds (CBK, 2016).
Credit card	A payment card that is issued to the card holder to use for the later payment for goods and services and later settle the credit. The issuer usually grants credit to the card holder and creates a revolving account where the card user can be able to borrow and make purchases and settle the credit later with interest (Cohem, 2005).
Innovations	It refers to the improvement of new services and products to be delivered to the customers which are fostered by advancement of ICT and the need to meet new financial requirements for the customers (Batiz-Lazo & Woldesenbet, 2006).
Internet banking	Involves using the internet with the help of computer and computer technology to carry out banking activities (Malhotra & Singh, 2010).
mVisa	It's a mobile service launched in partnership with visa to increase convenience and security of card less transactions (Family bank, 2017).

Pesalink

It is a real time 24-hour platform that was introduced to allow transfer of funds across different banks indifferent platforms including mobile banking, Bank branch and internet banking (CBK, 2017).

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Organizations have experienced diverse changes in both internal and external environment which affect their whole operations and process. To maintain their huge market share, survival, growth and prosperity in the competitive environment, most of them have come up with alternative ways to counter the effect. The financial sector is no exception to this and has experienced radical revolutions in its products, processes, technology, regulation, and governance and business models. The changes in the banking sector are attributed to the great influence of the information and technology (Kumar, 2011).

All enterprises whose aim is to make profit both in financial and nonfinancial sectors in Kenya are seeking services, latest and enhanced structures and product which can reduce total costs, give total satisfaction to the customers in the highly competitive market and obtain high profits. The customers in the banking sector demand for a different variety of the products that can satisfy their needs, accessible easily and convenient. Organizations have adopted financial innovation to solve this problem.

The need to adopt changes in the processes, organizational structure and embrace the new products in the financial sector, have been necessitated by liberalization, development, and globalization of the financial system and the need to be at par with the competition. There have been several regulations which have been set to minimize and reduce constraints in the financial sector (Gitau, 2011).

1.1.1 Financial Innovation

Financial innovation is the source of the invention of technology and tools. It can be drawn back to 1694 on the founding of the bank of England whose main activities were lending money at interest but since then the banking sector has diversified its activities to maximize its profits (Muiruri, 2014). According to Gorton and Metrick (2010), innovations are established to solve the problems faced by the organization and on analysis of both external and internal environment. The need to improve the relationship between the organization and other stakeholders has seen organizations embark on innovation as a tool to maintain their position in the competitive market. Moreover, the poor economic conditions worldwide, the competitive financial market, the need for effectiveness and efficiency in day to day operations and also the requisite to remain relevant in the ever-changing financial industry are among the reasons the commercial banks have fully embraced innovation.

Innovations are grouped into four categories these are market innovations, financial innovations, product innovations, and process innovations. Product innovation involves in the same market, introducing different varieties of the commodity, market innovations is the establishing of new markets and expanding the existing markets while process innovations are enhancing the productivity of the methods and procedures in an organization. According to Kumar (2011), financial innovation has changed the way banks carry out their operations. Gorton and Metrick (2010) note that the rise of innovation in the financial sector can be attributed to the need to lessen liquidation overheads, levy rewards, decrease in ethical vulnerability, decrease regulatory overheads, customization and openness. Despite having embraced innovation, some banks are still facing financial crisis.

For several years, financial innovations have attracted great interest from various stakeholders including scholars, researchers both globally and locally who have done studies to establish this. Nofie (2010) notes that financial innovations reduce the cost of providing banking services to the customer as most customers are able to access banking service at the comfort of their homes without necessarily visiting the banking premise. In Kenya, the efficiency of the financial sector is key for the country to realize its vision 2030 (The government economic blueprint). The key financial pillars of efficiency, stability, and access to financial services can fully be met by fully embracing financial innovation for the country to meet its targeted economic growth (Muiruri, 2014). There are a variety of innovations in Kenya as noted by Central Bank of Kenya, (2013) including Real Time Gross Settlement System (RTGS), Electronic Fund Transfer (EFT), mobile banking, internet banking telephone banking, servicing of utility, mVisa, Pesalink, Credit cards, and prepaid cards.

1.1.2 Performance

The idea of performance is presumed as the essence idea in commercial organizations in common and particularly the banking and financial institutions, in the course of which we are able to provide a full representation of the dealings of an association or organisation and performance of its trade and the extent of the external and internal setting (Alzoubi, 2014).

According to Eccles (1991), performance, is defined as a mirror image of the capacity of the organization and its capacity to accomplish its objectives that is in addition to the manifestation of ways of utilising the organization's monetary resources, manpower as well as exploitation so as to ensure that organisations attain their objectives (Miller & Bromiley, 1990). According to Robins

and Wiersema (1995) performance is the organization's aptitude to reach its enduring objectives, while Wheelen and Hanger (2000) defines performance as those preferred outcomes which the organization aims to realize.

Non-monetary performance measures are articulated in non-financial units for instance employee contentment, the total number of customers and output. Although monetary measures are hinged on information on accounting which is also articulated in financial units, like proceeds and return on investment. The method of gauging the performance of monetary and non-monetary information systems is employed to evaluate both the organizational and individual banks' performance. Most organizations put emphasis mainly on the use of monetary ratios as a vital instrument for measuring the performance and carrying out of the assessment. This method of measuring financial performance has been criticized by Norreklit (2000) who observed that some organizations adopt the financial performance measures alone, the justification this is that the procedure of determining financial performance measures is an undemanding issue since it is guided by the followed regulations and guiding principles which are provided, and these regulations and values may not be employed for the non-financial performance measures (Speckbacher, Bischof & Pfeiffe, 2003).

Owing to the idea that the application of non-monetary indicators will be preferable in the evaluation and appraisal of branch managers' performance, these non-monetary measures are utilized to measure performance for the consistent forecast of the lasting performance and assist to re-focus the management on the lasting run (Anderson, Fornell & Lehmann, 1994). According to Kaplane and Norton (1996) incase non-monetary measures are disregarded and ignored in

assessing the performance, then, those concerned with making of decision may handle just a little part of the existing information. Hoque and James (2000) and Laitinen (2002) noted that the combined usage of information and tools for measuring the financial and non-financial is essential to present the impression of a more impartial general organization's performance.

Yeniyurt (2003), notes that the systems for measuring performance offer helpful information regarding the organization's outcomes and monetary outcomes of its internal processes, and diverse performance measures would be useful in inspiring activities, and plummeting failings of the organization management Hofman and Fieseler (2012), in addition, offer support and endorsement that can be an sign of present or upcoming performance (Hughes, 2000).

Various studies assessed the comparative use of monetary measures in association with non-monetary measures regarding performance of the organizations, and indicated that monetary measures are more apt to usage compared to alternatives when assessing the performance of the management, however, the study by Luft and Shields (2001) established that measurements of non-monetary are weighted more in using for the prediction of upcoming financial performance.

Non-financial performance measures too took into consideration customer base, customer contentment, quality of the product, or staff turnover that are vital for the assessment of the organization's branch managers performance. In cases in which management may employ non-monetary data and the ones concerning accounting performance assessment, and normally fail to provide measurements of non-monetary essential value for management, other than took into consideration the important indicators, that present information about upcoming performance, that

fail to subsist in the existing accounting procedures (Banker, Potter & Srinivasan, 2000).

The non-fiscal performance measures are taken as imperative indicators of the upcoming monetary outcomes, like the key indicators which are deemed significant, particularly when evaluating the performance of administrative activities shown on the monetary profits ultimately, except it nonetheless fail to emerge in the present accounting standards and projected from both two relationships linking non-monetary performance and lasting monetary profit on the significance of non-monetary measures to assess the performance (Hofmann, 2001). Getting dissimilar outcomes through a range of studies may be elucidated by looking at the diverse determinants of usage of a non-monetary performance measures. Nagar and Rajan (2001) examined the manufactured goods' quality in industrial companies, and established that variations in measurements replicate variations in revenues and the application of measures of non-monetary performance is deemed to be helpful to the organization. This is for the reason that they give information concerning the lasting performance that is not explained in the immediate monetary measures.

A study by Ittner, Larcker, and Meyer (2003) sought to find out the association between the performance measurement system, and economic performance, as well as strategic performance. Outcomes of the study established that the companies that function additionally on the usage of non-monetary performance measures have better contentment and high market return compared to organizations that have related approaches or entities which boost their products' or services' worth.

Banker *et al.* (2000) revealed that non-monetary performance measures are preferable indicators to forecast the upcoming of the organization as opposed to fiscal measures, since there is immense

focus on customary performance standards, like net profit or return on investment. Consequently, bringing the interest to the factors of non-measures like market share, customer contentment, output, effectiveness, product value, and worker contentment. Accordingly, non-monetary measures assist in the pinpointing and evaluation of important advancement concerning the objectives of the work and attainments, so as to realize the affirmed aims of the organization, nonetheless Nagar and Rajan (2001) made a conclusion that non-monetary measure is an important indicator of economic performance and a promising basis of information regarding upcoming cash flows.

According to Graham and Harvey (2005), the manipulation of performance data mirrors the effort of the management to advance the monetary performance a number of researches confirm that it is feasible to advance monetary performance through the homogeneousness and falsifying some accounting data concerning the organization. Generally, the monetary measures seem like an aim or target, since they are deemed as standards of non-monetary and voluntary alignments like in the instances of instruction of staff or in cooperation and involvement in policy development. Van der Stede (2000) proposed that the addition of non-monetary measures may boost the frequency of involvement in performance assessment, this is a comparison to the results of study done by Zewailef and Noor (2005) that stressed on the necessity to assume recognized methods and general language to be employed by the personnel during the advancement of a range of performance measures to assess the tactical performance of the organization.

1.1.3 Commercial Banks

Central Bank of Kenya (2017) records that the Kenyan banking sector by June 30, 2017, included forty-three (43) commercial banks, thirteen (13) microfinance banks, one (1) mortgage finance

company, 74 foreign exchange bureaus, 18 money remittance providers, 7 representative offices of foreign banks, and 3 credit reference bureaus. On February 13, 2017, Giro Commercial Bank Limited was obtained by I&M Bank limited and chase bank was taken over by SBM bank, Also, two new commercial Banks, DIB Bank Kenya Ltd and was licensed in April 2017; thus, growing the number of commercial banks to 42.

There are 11 commercial banks in Kenya listed in the Nairobi Securities Exchange. They include Barclays Bank Ltd, Stanbic holdings ltd, Housing Finance Ltd, KCB Group Ltd, Diamond Trust Bank Ltd, National Bank of Kenya Ltd, Standard Chartered Bank of Kenya, Equity Group holdings and the Co-operative Bank of Kenya Ltd. The listed banks recorded an 8.2% decline in core earnings per share in 2017, likened to a growth of 14.1% in 2016, as an outcome of depressed Net Interest Income (NII), subsequent to the capping of interest rates, which too saw banks record abridged margins, with the Net Interest Margin (NIM) coming in at 8.4%, from 9.4%, formerly (Cytonn, 2017).

The Central Bank of Kenya (CBK) has categorised the Kenyan banks into three tiers. The CBK reached this categorization system as a means of differentiating banks in relation to their market share, the number of client payments and asset base. The commercial banks have been classified into Tier 1, Tier 2 and Tier 3 (Cytonn, 2017). There are about six tier 1 financial institutions controlling approximately 50% of the local market operating in the Kenyan economy including Standard Chartered Bank; Barclays Bank; Co-operative Bank of Kenya; Commercial Bank of Africa (CBA); Equity Bank; and Kenya Commercial Bank (KCB). CBA Bank substituted CFC Stanbic in 2015 in tier 1 following its loss of top-tier classification because of its depreciated

market share (Cytonn, 2017).

The tier 2 Banks comprise of medium-sized lenders controlling about 41.7% of the total monetary and fiscal market share in the country. They include Citibank, National Bank, Bank of Africa, Family Bank, Diamond Trust Bank, Ecobank, I&M Bank, Housing Finance, CFC Stanbic Bank, Bank of India, NIC Bank Prime Bank, Bank of Baroda and Guaranty Trust Bank (Cytonn, 2017).

The last classification of commercial banks is Tier 3 which are believed to control close to 8.4% of the total market share. They comprise of Fidelity Bank, Development Bank, Paramount Universal Bank, ABC Bank, Jamii Bora Bank, Consolidated and Development Bank, Credit Bank, Equatorial Commercial Bank, Guardian Bank, Victoria Bank, East Bank, Giro Bank, Oriental Commercial Bank, Trans-National Bank, Habib Bank, First Community Bank, UBA Bank, Gulf Bank, Habib A.G Zurich Bank, Sidian Bank, Consolidated Bank.

In the traditional banking, there were several challenges that were being faced by the commercial banks which included, nonperforming loan ratio, less profitability and lack of innovation, (Mugane, 2015). To find the solutions to the problems, modern the financial sector has come up with several innovations which include, Electronic fund transfers (EFT), Real-time gross settlement (RTGS), mobile banking, Internet banking ,credit cards, prepaid cards, Pesalink, mVisa, telephone banking and servicing of utility (Central Bank of Kenya, 2013).

1.2 Statement of the Problem

The banking sector in Kenya has undergone incredible changes in the recent years in relation to financial innovations which are vital to the performance of the banks. The innovations have transformed and continue to transform the way the bank carries out their operations. Almost all

commercial banks in Kenya have adopted financial innovations to propel their operations and to foster higher performance in their overall operations. However, it is not still clear whether the financial innovations adopted affect performance positively as it is the expectations. Several mid-tier banks are financially struggling in the market and according to Central Bank of Kenya (2017), Chase Bank and Imperial Bank went under receivership and there have been extreme cases like Dubai Bank closing their operations in Kenya. This is contrary to the expectations since these banks have fully embraced financial innovations and it is the expectations that the financial innovations will improve performance. Also, the current studies have overemphasis on specific financial innovations including mobile banking, ATM s, agency banking, debit cards and electronic banking leaving the recent ones like Pesalink, mVisa, internet banking and plastic cards including prepaid cards and credit cards remain less researched (Nyambariga, 2011; Nofie, 2011; & Muiruri, 2014).

Hendrickson and Nichols (2011) did a study on the performance of small banks in relation to interstate branching. Kigen (2010) conducted a study on the outcome of mobile banking transaction charges on the performance of microfinance. According to Muia (2017) electronic banking, mobile banking and internet banking have an assenting impact on the performance of commercial banks. Kiptum (2016) did research on the effect of financial innovation on the performance of commercial banks in Kenya. These studies have focused on some aspects of financial innovation leaving the recent innovations like mVisa, Pesalink, credit cards less researched. This study will, therefore, fill this gap by determining the effect of financial innovation on the performance of commercial banks in Kenya.

1.3 Research Objectives

1.3.1 General Objective

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

1.3.2 Specific Objectives

- i. To determine the effect of internet banking on performance of commercial banks in Kenya.
- ii. To evaluate the effect credit cards on performance of commercial banks in Kenya.
- iii. To establish the effect of Pesalink on performance of commercial banks in Kenya.
- iv. To determine the effect of mVisa on performance of commercial banks in Kenya.

1.4 Hypothesis of the Study

- i. *H₀₁: There is no significant effect of internet banking on the performance of commercial banks in Kenya.*
- ii. *H₀₂: There is no significant effect of credit cards on the performance of commercial banks in Kenya.*
- iii. *H₀₃: There is no significant effect Pesalink on the performance of commercial Banks in Kenya in Kenya.*
- iv. *H₀₃: There is no significant effect mVisa on the performance of commercial Banks in Kenya in Kenya.*

1.5 Justification of the Study

1.5.1 Government of Kenya

The study provides relevant knowledge to the government of Kenya as it seeks to grow the financial services, enhance financial inclusion and access to achieve the vision 2030-the economic blueprint. The government may, therefore, employ the study outcomes in formulating policies that inspires financial innovation while concurrently instilling operative regulatory environment.

1.5.2 Customers of Commercial Banks in Kenya

The study is a vital source of information on new current financial products in Kenya such as internet banking, credit cards Pesalink and mVisa examining their importance in banking among the population currently unbanked. It clarifies how the consistency of the several methods of money transfer services within Kenyan economy, establish and conclude what the systems have been able to accomplish and look for means to increase money transfer services.

1.5.3 Management of Commercial Banks in Kenya

The study aids the management of commercial banks and appreciates the need to embrace financial innovation. The management is able to evaluate the rising opportunities as they desire to create the competitive advantage through service delivery, reduced costs and enhance efficiency and effectiveness.

1.5.4 Scholars and Academicians

The study aids the management of commercial banks and appreciates the need to embrace financial innovation. The management is able to evaluate the rising opportunities as they desire to create the competitive advantage through service delivery, reduced costs and enhance efficiency and effectiveness.

1.6 Scope of the study

The study was restricted to the relationship between financial innovation and performance of the commercial Banks. The independent variables entail internet banking, credit cards, Pesalink, and mVisa while the dependent variable will be the performance. The study was considered in Kenya, a country within the East African region, hence findings can be generalized to the region. The study was conducted between August and September 2018.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter reviews the literature on the area of the effect of financial innovations on the financial performance of commercial banks in Kenya. The chapter gives an assessment of the theories that inform the discussion on innovation. It then outlines the empirical studies on how financial innovations affect the financial performance of commercial banks. It also focuses on the empirical studies which review the association between bank innovations and financial performance of commercial banks, the conceptual framework that shows the link between the independent variables and the dependent variable, the lacunas in the literature review and finally a literature review summary.

2.2 Theoretical Review

This study was guided by the following theories:

2.2.1 Diffusion of Innovation Theory

Rodgers developed and popularized the theory in 1962 after a thorough analysis of more than 508 studies on technological diffusion in different fields. According to Rodgers (1962), the decision to embrace innovation is usually determined by four elements which are innovation, time, communication channels and social systems. In addition to that, Rodgers (2003) notes that individual ability to adopt an innovation is usually determined by the features of the financial innovations including, perceived usefulness, matching needs, intricacy, testability, and visibility with the social system adopting an innovation. Rodgers (2003) also identified the major attributes that influence the adoption of innovation. which included; Relative Advantage-This is how an

innovation is seen as being superior to its antecedent Rogers (2003), Compatibility-The degree to which the perceived innovation is viewed to be congruent to principles, necessities and experiences of viewpoint adopters Hernandez and Mazzon (2006), Complexity-The difficult and ease of use of the innovated product and service (Rogers, 2003), Observability –This usually points out the level in which the outcomes of an innovation are discernible to others (Rogers, 2003). Trialability that is the measure to which the innovation may be experienced and tested prior to its real taking up (Hernandez & Mazzon, 2006). The theory also groups the adopters into innovators, early adopters, late majority and laggards and states that the customers in the innovation adoption phases differ in their features (Rodgers, 1962).

This theory describes how innovations are embraced by bodies across the industry. In particular, the banking sector is characterized by varying customer inclinations and the need for timely and apt services delivery. Consequently, the theory provides insights into how Pesalink, credit cards, internet banking, and mVisa have been embraced by several institutions in the financial industry. Through internet banking and Pesalink the customers are able to transact without having to visit the banking hall and use of credit cards has diffused the access of credit from the branch appraisal to a simple means of credit access.

2.2.2 Circumvention Innovation Theory

This theory was introduced by Kane in 1983. It elucidates that numerous forms of government controls and regulations possess the similar property as implicit taxation. The controls hinder the profitable activities engaged in by companies and minimize the firm's ability to make a profit. With independent economic force and political forces prevailing, Market innovation and

regulation innovation are always parallel to each other and in a continuous fight (Kane, 1983). The financial industry is key to any economy and country thus has very strict controls and measures in place to guide its operations. For the financial industry institutions to make a profit and reduce their failure, they must come up with ways to deal with the regulations. Thus, the needs to earn a profit and evade government regulations are some of the reasons for financial innovation.

However, this theory is dissimilar to what occurs in the real market of finance since the regulation innovation in this theory is the innovation towards the direction of strengthening regulation while the regulation innovation in the actual financial market is geared to the direction of relaxing financial markets (Kane, 1983). The significance of this theory to this research study is that it is taken as the origin of innovation and also elucidated the procedure of regulation innovation and dynamic relations.

2.2.3 Regulation Innovation Theory

This theory was advanced by Scylla in 1982 to highlight the monetary innovation from the financial development angle. It states that monetary innovation narrowly links with societal rule in a country. The regulation transformation has reciprocal effect causation with economic regulation. It poses challenges to adopt financial innovation in strategic economies with stringent controls and in the untainted free-market economy; accordingly, the changes in the financial regulations are the ones that encourage financial innovation (Scylla, 1982).

Innovative activities mostly are experienced in government-controlled economies since most government activities seek to control financial activities. The financial institutions can only circumvent the government controls through financial innovations. The interaction between the

market and government lastly form the twisting development procedure, specifically, control-innovate, controls again-innovates again. The theory additionally clarifies that the latitude of monetary innovation and government activities are the motivation of monetary innovation. Nevertheless, it only considers regulation innovation like single facet of financial innovation, particularly based on the rules and regulations adopted to control financial action as monetary innovation. The financial control is the obtrusive force that energizes financial innovation. The rules and regulations that are considered to be the mark of financial control must be taken as indicators of the trend of financial reform and innovation (Scylla, 1982).

This theory will assist in understanding the role of the various regulators in the financial industry including the Central banks, Kenya Bankers Association and the government in the financial industry and how their decisions impact the financial sectors in embracing the financial innovations and their contribution to the financial performance of financial institutions.

2.3 Empirical Review

This section reviews literature from prior scholars as regards the effect of financial innovations on the performance of commercial banks.

2.3.1 Internet Banking

Francesca and Claeys (2010) did a study on the determinants of banking groups' strategic choices with a focus on online services. They examined on a group of the 60 largest EU banking groups over the period ranging 1995-2005, the study the increased concentration of the banking institutions and the increased competition in the industry lends credence to the embracing of the internet banking by the most organization.

Malhotra and Singh (2010) did a study to examine the impact of financial innovations particularly

internet banking on banks' performance. The study examined 82 scheduled commercial banks financial performance in the period 1998-2007, the multiple regression analysis indicated that banks with skilled internet banking are big and possess improved operating effectiveness ratios and exercised fewer customary source of financing in contrast to banks with green internet banks in addition to non-internet banks. The findings revealed that there was no statistical significance in the dissimilarity in the performance of experienced and inexperienced internet banks.

Yin and Zhengzheng (2010) carried out a study in China to determine the operational changes due to technology innovations. Their study findings showed commercial banks that embraced innovations of processes including internet banking were more profitable since the banks minimized on the operational costs and labor costs improving their performance. Thus, the commercial bank can save on costs, thus, improving on its performance. A study was done by Kimingi (2010) to find out the effects of technological innovations on the performance of the commercial banks in Kenya. The study used a descriptive survey and employed both descriptive and content analysis techniques it analyzed both primary and secondary data. Qualitative data was analysed using content analysis while quantitative data was analysed through descriptive methods. The study concluded that banks have embraced financial innovation through the adoption of various technological tools and techniques-based banking services including ATMs, mobile banking internet banking service. Furthermore, embracing financial innovations resulted to the increased monetary performance of commercial banks in Kenya through improved bank profits, increased sales and return on equity. The study suggested that banks ought to embrace modern technological innovations like internet banking to remain competitive.

Mwangi (2013) studied the effect of innovations on the performance in the financial industry in Kenya. The financial innovations had a statistically significant impact on return on assets, income, customer deposits and profitability of commercial banks in Kenya and tests for significance equally established that the impact was statistically significant. Grounded on the results of the study, the researcher established that bank innovations sway financial performance of commercial banks in Kenya positively.

Korir (2014) established the effect of financial innovations on the performance of commercial banks in Kenya whose target population was the 44 commercial banks in Kenya. The study used secondary data. Regression and correlation analysis was used in the analysis of the relationship between the dependent and the independent variables of the study. The findings of the study revealed a strong connection between financial innovations and financial performance. The study concluded that financial innovations affirmatively affected financial performance.

Founded on the empirical evidence above, this study concludes that the introduction of internet banking has an affirmative impact on the performance of commercial banks in Kenya.

2.3.2 Credit Cards

Cohem (2005) defines a credit card as payment cards that is issued to the cardholder for the payment of goods and services and later settle the credit. The issuer usually grants credit to the cardholder and creates a revolving account where the card user can be able to borrow and make purchases and settle the credit later with interest.

Al-qudah (2012) did a study on the electronic cards' usage and their effect on the banks' performance. The aim of this study was to know the impact of the use the electronic credit cards and it incorporated the number of electronic credit cards, the ratio of venture in credit cards, and the operating expenses to the credit cards, and elucidation of its consequence in the net income from credit cards and presenting the impact of the net income from credit cards for the profitability of bank by using return on equity model. This study was applied to a sample of commercial banks working in Jordan, the information and data were gathered from annual reports provided by the banks and by returning to the credit management in commercial banks. This study found that the improvement in the number of credit card issuance leads to improved income, thus, improved performance. Also, the usage of credit cards issued to the customers increases the banks' performance through increased income. The suggestions of this study were, the commercial banks working in Jordan must improve the issuing of the credit cards of all varieties, and it should also improve the operating expenses, investment for credit cards to improve the possibility of investment in credit cards in the commercial banks working in Jordan

Nisar, Mohsin, Shaukut, and Nadia (2015) conducted a study on the impact of plastic money on the performance of the banking sector of Pakistan. The cards considered in the study were credit cards, debit cards, international cards, and prestige cards. A survey based on convenience and clustered samplings were used. The study concluded that the usage of plastic cards positively affects the performance of commercial banks in Pakistan. The customers are apt to be more contented with plastic money, their exactness besides timeliness. Moreover, the company expansion appeared to be an extra purpose which is your electronic choice for supply connected with solutions. Increment in the clientage, customers' attainment, and respect as well as business

growth contributes to better advances for the monetary organizations.

Nyambariga (2011) did a study which included plastic card usage. The study used secondary data from the central bank of Kenya. Multiple linear regression and linear regression was used to analyze data so as to determine the relationship between the dependent and independent variable innovations on performance e of the commercial. The data analysis as well establishes that taking all other factors at zero, a unit increase in cards usage will have a 0.019 increase on banks performance. The results of the findings further show that plastic cards usage had a positive effect on the performance of commercial banks in Kenya of 0.019 the t-value was 0.085 and the p-value 0.946 meaning that the effect of card usage was neither significant at 5% nor at 10% level of confidence.

Monyonjo (2015) sought to determine the relationship between credit card technologies and the performance of commercial banks in Kenya. The study population included all 44 commercial banks licensed by Central Bank of Kenya. Secondary data for a five-year period was used. The study revealed that Credit cards' adoption by the banks as a way of growing income, and reduction of credit and liquidity risks. The study established that adoption of E-Banking technologies had an affirmative effect on the performance of commercial banks in Kenya. The recommendation was for the financial institutions to continue investing in the financial innovations. Odhiambo (2012) did a study to establish the effects of credit cards on the performance of commercial banks portfolio in Kenya and especially in Migori town. The aim of the study ws to establish the connection between the adoption of credit cards and credit card holders' contentment and to find out if the adoption of credit cards has led to the increased returns for the commercial

banks. The outcomes of the study revealed a positive impact on the contentment of credit card holders and adoption of credit cards bettered return for the commercial banks. This study recommends commercial banks should broaden their credit card market as to get more benefit from the use of credit cards and to increase their revenues.

Basing on the studies above, the researchers find that there is an assenting relationship between credit cards and performance of commercial banks. This study also hypothesizes that credit cards definitely affects the performance of commercial banks.

2.3.3 Pesalink

Pesalink is a platform that permits one bank to talk to another bank via mobile phone applications or unstructured supplementary service data (USSD) codes, however, each bank is allowed to adapt and fit in Pesalink onto its own mobile banking platforms. The inter-banking money transfer service enables customers to send money from one bank account to another in real time. The platform enables customers to send as little as Ksh 10 to as much as Ksh 999,999. Pesalink is a creativity of Kenya Banker's Association (KBA). Pesalink was conceptualized in 2012 due to the realization of banks in Kenya that they were losing billions of money to mobile money transfer platforms like the Mpesa of Safaricom (Demombyenes & Thegaya, 2012). Pesalink is operated by the Integrated Payment Service Limited (IPSL), a subsidiary of the KBA. The objectives of the innovating of Pesalink is risk management and financial inclusivity, efficiency, value for customers, maximizing profit, saving and efficiency (Demombyenes & Thegaya, 2012).

Kirathe (2017) carried out a study on the role of Pesalink innovation in business model re-

alignment of commercial banks in Kenya. The study aimed to establish how product imitation, the creation of value, market shares, and instability affect business model realignment. This study adopted a descriptive study design. It also used descriptive statistic in its methodology on the supply chain management practices. It also used primary data in the study and the data collection process was affected through the questionnaires which were issued through the drop and pick method, coded, keyed and analyzed using both descriptive and regression analysis. The findings of the study showed that Pesalink innovation has a positive impact on the business realignment of commercial banks in Kenya.

The cited studies above indicate that Pesalink adoption positively affects the performance business realignment and hence the performance of commercial banks. This study equally lays the hypothesis that Pesalink improves the performance of commercial banks.

2.3.4 mVisa

mVisa is a new financial innovation that uses quick response code (QR) code-based payment service. QR code is a two-dimensional code made up of black and white squares which can be read by smartphone cameras, the point of sale (POS) terminals or other devices. The QR code was initially developed for the automotive industry in Japan and patented by Toyota subsidiary Denso Wave. QR codes can be used by anyone providing that they adhere to the code standards. However, the use of QR code has blown up in the recent years, for instance, droves of companies began using QR code for advertising and promotions to merchandise tracking and coupons. Consumers are also progressively using QR codes so as to access media on the Internet, download offers, find information about a given product and many more. Moreover, QR codes have also started to be

used for payments, which involve customers making payments by scanning a QR code and then allowing the amount moved straight from their account to the merchant. This happens without the use of a POS terminal (Hartung, 2014).

Internationally, banks and non-banks have embarked on testing whether QR codes to merchants and consumers may help in the provision of an unsophisticated solution for payments (Hartung, 2014). Bank of India in partnership with Visa introduced mVisa application as a new technology for making merchant payments. A customer with mVisa can imitate payments using his mobile phone with the pre-installed mVisa application. The merchants can then have the options of accepting these transactions by making a Quick Reference (QR) code through the mVisa application provided to them (India Infoline News Service, 2016).

Agabi (2017) notes that the global payments brand, Visa, unveiled mVisa in Nigeria as a financial innovation that would enable customers from Visa's Nigerian associate banks to make payment with any mobile phone wherever mVisa is allowed. mVisa transactions are processed through Visa's global network, Visa Net, applying the same scale, security and dependability just as any other Visa transaction. Nigeria was the first market to present customers with the expediency of making across-the-border payments through the use of mVisa. Andrew Torre, President for Visa Sub-Saharan Africa noted that "Small and medium merchants in particular, no longer have to invest in expensive point of sale infrastructure as mVisa gives them the freedom to accept payments in a convenient, secure and affordable manner that their customers' trust" (Agabi, 2017).

mVisa was launched in Kenya in 2016 by Visa, as a mobile payment application in so as to rival

the incumbent M-PESA. In collaboration with four large banks, Visa launched mVisa to enable consumers to make payments by scanning a merchant's QR code (Hartung, 2017). It had previously unveiled as a pilot with Family Bank nine months ago but is now live at eight banks namely; KCB, Cooperative, Ecobank, Barclays, National, Standard Chartered NIC, and Prime Bank. This role out entails free person-to-person (P2P) money transfers for mVisa users at these banks to others registered mVisa members at any of the banks. For instance, customers of Cooperative Bank are able to get mVisa by bringing up-to-date their MCo-op cash phone applications but those without MCo-op cash are able to get it by dialing USSD *667# on their phones and this will bring up mVisa which they can use to send money to any other mVisa users and pay for goods and services without extra cost. Merchants can make payments through the use of a QR code within a phone or via a card displayed at a shop or other places of business. QR codes allow transmissions without the necessity for a smartphone and for merchants, they may admit payments without the point of sale (POS) devices like card readers (Muli, 2017).

mVisa's objective is to enable financial inclusion and transparency that would help the small medium enterprises (SMEs) get credit from banks; consequently, enabling the processing of confirmable payments to a business will improve its feasibility. This financial innovation is recent and with the many advantages associated with it, there is a need to do research on how it affects the financial performance of the banks that have adopted it (Muli, 2017).

The cited studies above indicate that mVisa adoption positively affects the performance business realignment and so the performance of commercial banks. This study equally lays the hypothesis that mVisa improves the performance of commercial banks.

2.4 Conceptual Framework

Independent Variables

Dependent Variables

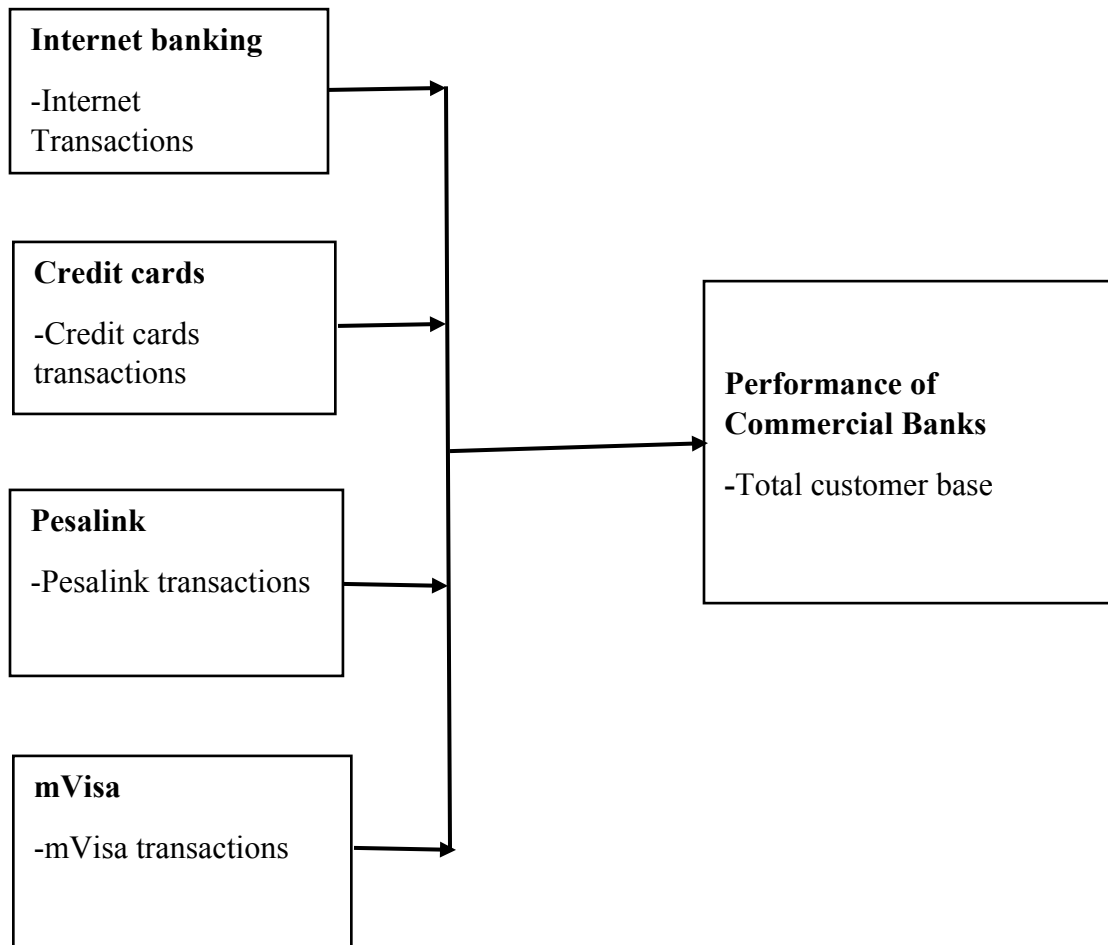


Figure 2.1 Conceptual Framework

2.5 Operationalization of Variables

Table 2.1: Operationalization of Variables

Variable	Measurement
Internet Banking	Internet banking transactions
Credit Cards	Credit cards transactions
Pesalink	Pesalink transactions
mVisa	mVisa transactions
Performance of Commercial Banks	Total customer base

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter comprises the research design, the target population, sample size and sampling procedure, data collection methods, data analysis and presentation that this study used to study the effect of financial innovations on the performance of commercial banks in Kenya.

3.2 Research Design

This study adopted a descriptive research design. A descriptive study is the kind of study where information is collected without altering the setting, thus, it reports situations or things as they exist (Burns & Grove, 2003). According to Adams, Hafiz, Khan, and David (2007), the descriptive study can be used to answer research questions like “What is happening? Why is something happening? How is something happening?” This design was appropriate because this study sought to establish the situation as it exists without the manipulation of any of the variables.

3.3 Target Population

Suitability of Study Heterogeneous Units

According to Mugenda and Mugenda (2004), a target population is the complete set of recognizable objects under a certain study. Thus, the target population for this study was all 41 commercial banks fully operating and regulated by the Central Bank of Kenya. According to CBK (2017), presently, 44 commercial banks in total are operating in Kenya but three including Chase bank and Imperial were put in receivership in 2017. Thus, the study target 41 commercial banks

fully operating in Kenya.

3.4 Sampling and sampling procedure

A sample is a subset of elements drawn from a larger population (Lavrakas, 2008)

This study adopted the census sampling method of forty-one (41) commercial banks in Kenya as listed by the Central Bank of Kenya (CBK) (2017). The period of study was from March 2017 to July 2018. The study period was chosen to incorporate the period within which all the study variables were in existence. Two respondents were picked per bank from the management side by purposive sampling to make the total target respondents be 82.

3.5 Research Instrument

According to Mugenda and Mugenda, (2003), data collection tools are the instruments that are employed to collect the needed information for the purpose of confirming a given fact. The study used primary data. Primary data was collected through the administration of questionnaires. Questionnaires were ideal for this study since they are faster, cheap, easy and convenient to administer to respondents. Moreover, the data collected through questionnaires are very adaptable and easily to constructible, easy to process since questionnaire is direct and produces easily understandable and specific data (Adams *et al.*, 2007). The questionnaire had four sections which formed the major areas of study excluding the first section which captured the demographic characteristics of the respondents. Other segments were organized according to the key study objectives. Thus, the data was authentic and consistent enough for the purpose of analysis in this study.

3.6 Validity and Reliability of the Instrument

According to Creswell (2003), validity can be achieved by obtaining data from triangulation, peer

review, which entails having the study participants assess final reports to ascertain its accurateness, and documentation by means of profound descriptions. Hence, the criterion for Creswell (2003) was employed by the researcher so as to establish the trustworthiness of the instruments used in the study.

Reliability denotes the extent a measuring instrument produces unchanged outcomes when it is used every time (Abbott & McKinney, 2013). According to Drost (2011), the methods for estimating the reliability comprise internal consistency, split-halves, inter-rater reliability, alternate forms, and test-retest reliability. This study used an internal consistency method which was then tested by the use of Cronbach's alpha. The alpha measures the consistency in an instrument and questions the appropriateness of using a set of items to measure a particular characteristic in the test. Thus, the test was deemed internally consistent since the reliability estimations were constructed on average inter-correlations among all single items in a test. When using the alpha, in the reliability test, the alpha value should not be less than 0.7 (Pallant, 2010).

3.7 Data Collection Procedure

Primary data was collected by semi-structured questionnaires and will be administered face to face by the researcher to the respondents from the 41 banks currently operating in Kenya. The construct was structured to elicit information on the independent variables (mVisa, Pesalink, Credit cards, and Internet banking) and the dependent variable (commercial bank performance).

3.8 Data Processing and Analysis

Data analysis was done with the help of SPSS and into a regression model that shows the connection between the independent variables and the dependent variables (performance of

commercial banks). Multiple regression analysis was also used in an attempt to find out the effect of mVisa, Pesalink, credit cards, and Internet banking on the performance of commercial banks. The choice of SPSS for use in this study was informed by the fact that it produces outcomes of most of the simple outputs that are essential for a study in which a descriptive research design is adopted. The performance of commercial Banks was measured based on the total customer base. In this instance, the Total customer base was tested against the independent variables and the multiple linear regression model that was used in this study is shown below:

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

Where;

Y_i = Total customer base of commercial banks

β₀ = the constant to be estimated by the model

β₁, β₂, β₃ and β₄ = Coefficient indicating effect of independent variables on the dependent Variable

X₁ = Internet banking

X₂ = Credit cards

X₃ = Pesalink

X₄ = mVisa

ε = inherent error in the model

Analyzed data was presented in form of tables and analyzed data presented in the form of graphs.

3.8 .1 Diagnostic Tests

The analyzed data was subjected to the following diagnostic tests. These included: multicollinearity test, Normality tests and Autocorrelation tests.

3.8.1.1 Multicollinearity Test

Multicollinearity arises the moment a combination of independent variables in a regression model is extremely but not perfectly correlated (Aczel & Sounderpadian, 2002). Multicollinearity test will be performed for the purpose of the examination of multicollinearity problem of which failure control can result into unstable parameter estimator that would make it very inflexible to evaluate and infer the effect of independent variables (Pesalink, mVisa, credit cards, and internet banking) on the dependent variable (financial performance). Variance inflation factor (VIF) was employed in SPSS software so as to examine the multicollinearity problem in the model from the variables of the study. Variables whose VIF values are 10 and above shows the existence of multicollinearity problem that requires improvement. More often, this kind of problem results from the use of too many independent variables so as to measure the same dependent variable. In the case of the existence of this problem, the likely solution would be dropping the variable with high VIF in so as to change the other variables from non-significant to significant (William, 2008).

3.8.1.2 Autocorrelation Test

The Durbin Watson test was used to test for autocorrelation. The problem of autocorrelation results when an error term of one period relates to the error term of another succeeding period in time series data (Andrew, 2002). The serial correlation also occurs when the researcher employs a mathematical form which differs from the true form of the relationship producing the disturbance

term. When the disturbance terms are seriously correlated then the Ordinary Least Square (OLS) estimators will be unbiased, hence the use of t and F statistics of significance turns out to be invalid. Autocorrelation can lead to overestimated t values that produce type 1 error. Durbin Watson d statistic will be used to detect the serial correlation. Autocorrelation will be absent if the Durbin Watson statistic takes values between 0 and 4. Durbin Watson test is appropriate for small sample size ($n < 25$) (Bowerman, 2003).

3.8.1.3 Normality test

Kolmogorov-Smirnov and Shapiro-Wilk test are used to test for normality. For large sample sizes, Kolmogorov-Smirnov is used while for small sample sizes Shapiro-Wilk test is used (Thode, 2002). Shapiro-Wilk test was used in this study. If the tests results show that the p-values for the variables were > 0.05 then the variables are normally distributed.

CHAPTER FOUR

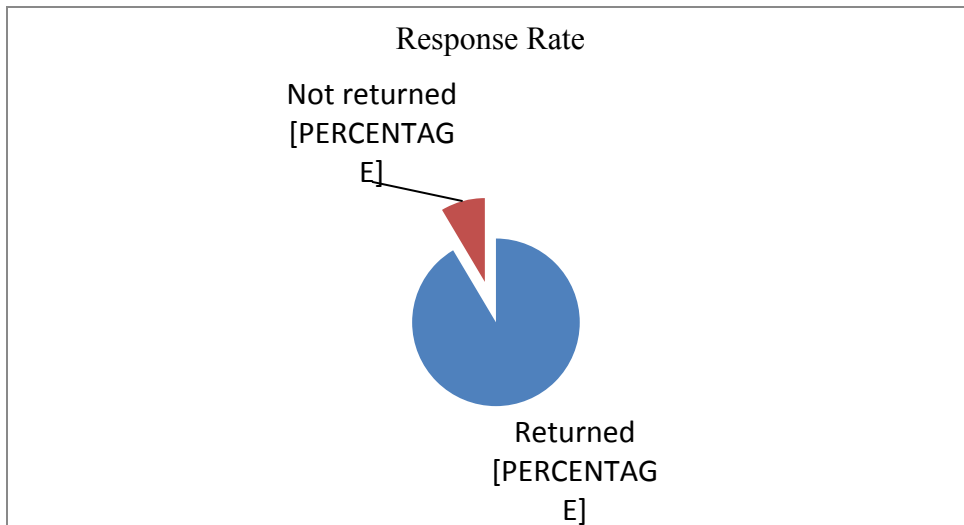
DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents the results and findings of the study. The purpose of this study was to determine the effect of financial innovations to the performance of commercial banks in Kenya. After administering the instruments, data was collected, coded, edited, organized and cleaned for analysis. It specifically discusses internet banking, credit cards, Pesalink, and mVisa financial innovations and the effect of these financial innovations on performance of commercial banks in Kenya.

4.2 Response Rate

The unit of analysis for this study was the top, middle and line managers of commercial banks in Kenya and 82 managers were selected. The total number of questionnaires issued was 82 but only 75 of the respondents returned the questionnaires; therefore, the overall response rate was 92%. This is because, in the banking industry, managers have to go to the field to supervise their sales agents and attend meetings, and in some cases, they do sales, this made it difficult to find all the managers present in the office hence the 92% response rate. The results are presented in Figure 4.1



Source: Field data, 2018

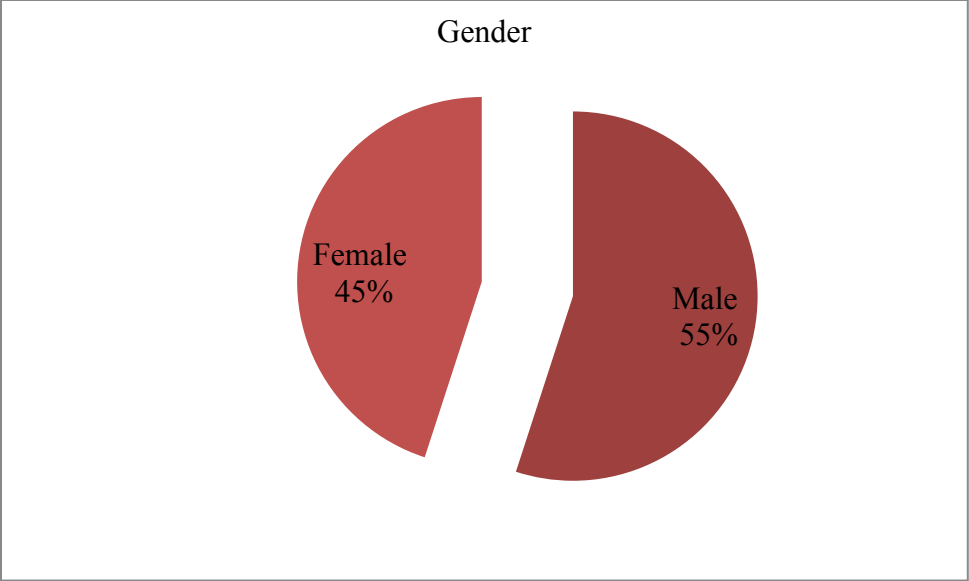
Figure 4.1: Response Rate

4.3 Demographic Information

This section presents the results of the demographic information of the respondents. Subsection 4.3.1 presents the gender of the respondents, subsection 4.3.2 presents the age bracket of the respondents, while subsection 4.3.3 presents the level of education of the respondents.

4.3.1 Gender of the Respondents

The study sought to establish how the sample was spread out across gender. This was meant to determine whether commercial banks in Kenya have employed across gender. The results are presented in Figure 4.2.



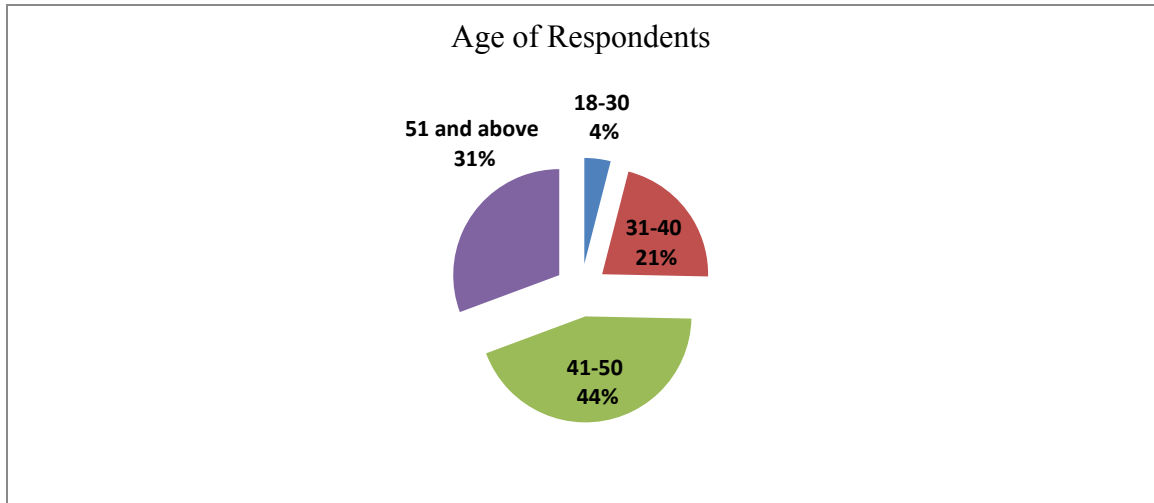
Source: Field data, 2018

Figure 4.2: Gender of Respondents

Results from the Figure 4.2 above indicate that, a majority of 55 % was male and 45 % was female. This implies that more men were engaged in the banking sector in Kenya, compared to women especially at the top management levels. Commercial banks in Kenya should therefore launch programmes geared towards encouraging more women to seek employment in the banking sector in order to achieve gender balance at the top management levels.

4.3.2 Respondents Age Brackets

The respondents were asked to indicate their age bracket. This was important as older people are expected to have more experience in the banking sector. Their responses are presented in Figure 4.3



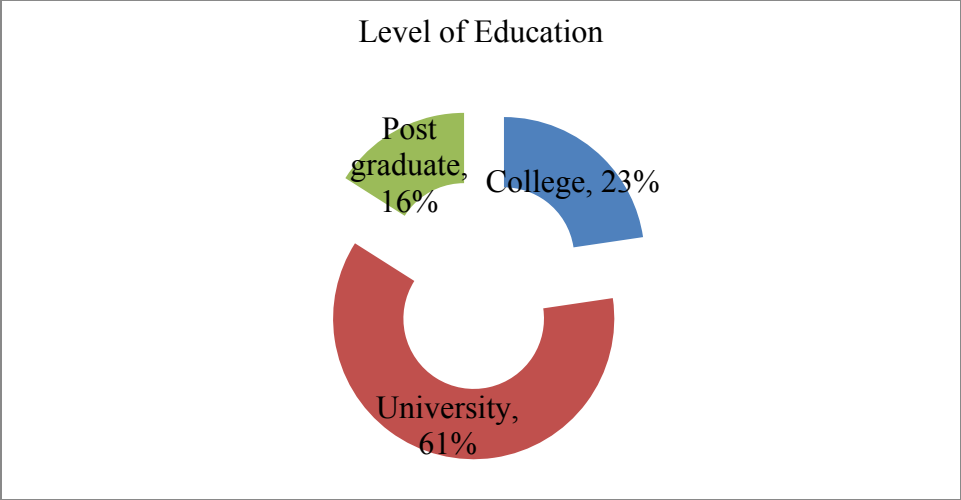
Source: Field data, 2018

Figure 4.3: Respondents' Age Bracket

Results in Figure 4.3 indicated that, majority of the respondents were age 41-50 being 44%, those of 51 years and above having 31%. Those of 18-30 had the lowest number of respondents with 4%. This implies that, in commercial banks, older employees are considered more for the management positions because it is assumed that they have more experience in the industry.

4.3.3 Level of Education

The respondents were asked to indicate their level of education. This was Important since education would affect their level of understanding of different aspect in the commercial banks sector. The responses are presented in Figure 4.4



Source: Field data, 2018

Figure 4.4: Level of Education

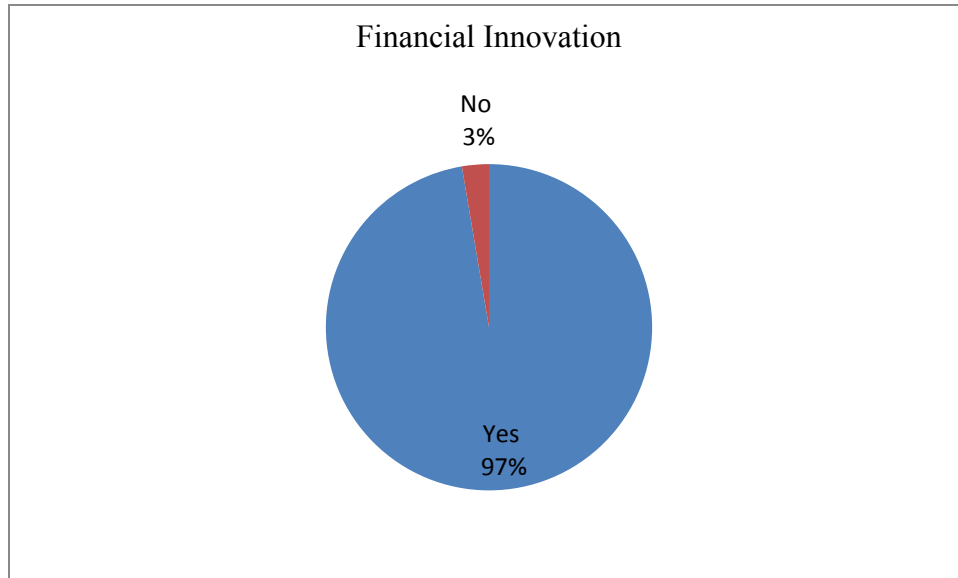
The results from the Figure 4.4 indicate that majority of 61% had university degrees and those on the college level were 23% only 16% had postgraduate level education. None of the respondents had below college education. This indicates that higher level of education employees mostly occupy the managerial positions in the commercial banks sector.

4.4 Study Variables

This section presents the results of the findings of the study variables.

4.4.1 Financial Innovations

Respondents were asked to indicate whether their company had used any kind of financial innovation in the recent past.



Source: Field data, 2018

Figure 4.5: Financial Innovation

From the Figure 4.5 majority of 97% agreed that their companies use financial innovations such as internet banking, credit cards, Pesalink and mVisa. Only 3% of the respondents disagreed that their companies use financial innovations. This implies that most of the commercial banks in Kenya adapt to new technology as it keeps on changing, so as to remain relevant in the market and save costs.

4.4.2 Internet Banking and Performance of Commercial Banks

This study sought to find out whether implementation of internet banking has an effect on total customer base of commercial banks descriptive statistics of percentages, mean and standard deviation were used to analyze the data. The results are presented in Table 4.1

Table 4.1: Effect of Internet Banking on Performance of Commercial Banks in Kenya

	5	4	3	2	1	Mean	SD
1 Internet banking has increased the number of customers registered by the bank	57%	32%	4%	4%	3%	4.4	0.94
2 Internet banking has led to increased customer loyalty	41.3%	38.7%	12%	6.7%	1.3%	4.1	0.95
3 internet banking has led to improved bank's reputation and image	37.3%	42.7%	10.7%	6.7%	2.7%	4.1	0.99
4 Internet banking has led to increased number of bank transactions	45.3%	37.4%	12%	4%	4%	4.1	1.04
5 Internet banking has led to improved customer service	57.3%	32.0%	4%	4%	2.7%	4.4	0.94
6 Internet banking has led to the fulfilment of customer needs	36%	32%	12%	13.3%	6.7%	3.7	1.26
7 Internet banking has enabled efficient and timely provision of services to customers	37.3%	38.7%	10.7%	12%	1.3%	3.9	1.05

Source: Field data, 2018

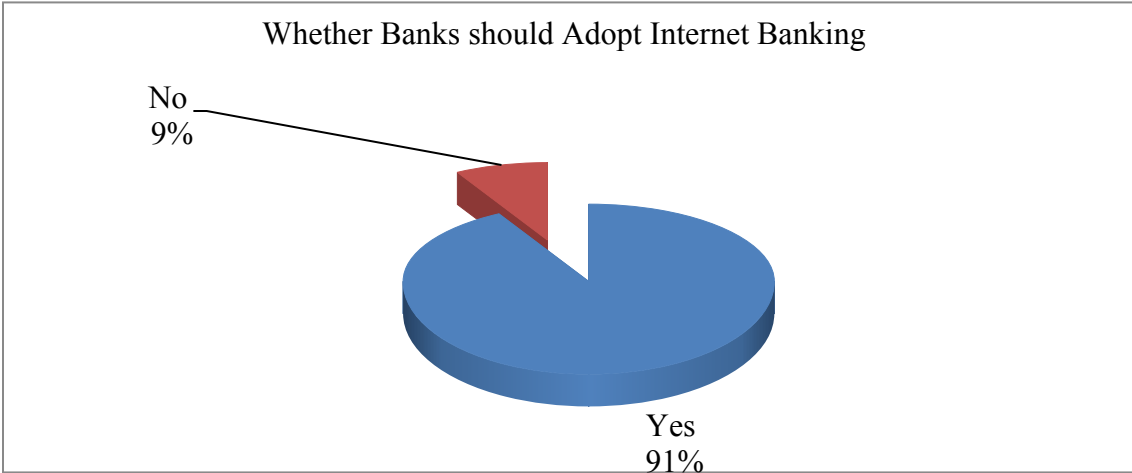
From Table 4.1, it is seen that generally 89% of the respondents agreed that Internet banking has increased the number of customers registered by the bank. Only 7% disagreed that Internet banking has increased the number of customers registered by the bank. A high majority of 80% strongly agreed that Internet banking has led to increased customer loyalty and only 8% disagreed. 80% of the respondents agreed that internet banking has led to improved bank's reputation and image while only 8% disagreed that internet banking has led to improved bank's reputation and image. A majority of 82% agreed that Internet banking has led to increased number of bank transactions and only 8% disagreed. 68% agreed that the Internet banking has led to improved customer service and only 20% disagreed. A majority of 76% agreed that internet banking has led to the fulfillment of customer needs and only 13.3% disagreed. 74% of the respondents agreed that Internet banking

has enabled efficient and timely provision of services to customers while only 8% disagreed that Internet banking has enabled efficient and timely provision of services to customers.

Generally, these results imply that majority of commercial banks in Kenya have implemented internet banking and it's having significant impact on their transactions. The results are consistent with Malhotra and Singh (2010) who asserts that internet banking elements provide the foundation for better performance in commercial institutions especially banks. The findings for the study also concurred with the research findings for (Ngano, 2015) which revealed that internet banking improved banks image, improved bank managers competence and promoted the overall banks growth in Rwanda.

4.4.3 Banks and Internet Banking

Respondents were asked to indicate whether they would advise banks to adopt internet banking. The results are presented in Figure 4.6



Source: Field data, 2018

Figure 4.6: Whether Banks should adopt Internet Banking

It is seen from the figure 4.6, majority of 91% indicated yes, and only 9% indicated no. This implies that, generally most respondents agreed that commercial banks in Kenya should adopt internet banking. The main reason for given for this was internet banking will attract and keep customers loyal to the company due to the affordability and convenience of internet banking.

The study concurred with Ali (2014) whose study findings revealed that online based banking services increase the number of customers registered for banking services for transacting via internet banking due to the convenience and reliability offered by internet banking thus growing the customer numbers across the various Kenyan banks. Kadzo and Wafula (2015) also confirmed that adoption of internet banking leads to lower transaction costs thus attracting more customers hence improving the overall total customer base hence growth of banks. The findings however do not concur with the findings of a study by Francesca and Claeys (2010) which found out that the performance of banking groups with an internet bank is poor. The initial investment in technology has proved higher than any consequent cost saving, especially on labor. The study concluded that Internet banks fail to create synergies with other banking activities hence financial innovations in the internet banking does not improve banks financial performance.

4.4.4 Credit Cards and Performance of Commercial Banks

This study sought to find out whether credit cards have any significant effect on performance of commercial banks in Kenya. Descriptive statistics of percentages, mean and standard deviation were used to analyze the data. The results were presented in Table 4.2

Table 4.2: Credit Card Components and their Implementation

	5	4	3	2	1	Mean	SD
1 Credit cards has increased the number of customers registered by the bank	52%	25.3%	8%	9.3%	5.3%	4.1	1.21
2 Credit cards has led to increased customer loyalty	37.3%	38.7%	10.7%	12%	1.3%	3.9	1.05
3 Credit cards has led to improved bank's reputation and image	57.3%	32%	4%	4%	2.7%	4.4	0.94
4 Credit cards has led to increased number of bank transactions	36%	32%	12%	13.3%	6.7%	3.7	1.23
5 Credit cards has led to improved customer service	34.7%	38.7%	13.3%	12.0%	1.3%	3.9	1.04
6 Credit cards has led to the fulfilment of customer needs	53.3%	36.0%	4%	4%	2.7%	4.3	0.93
7 Credit cards has enabled efficient and timely provision of services to customers	36%	30.7%	12%	14.7%	6.7%	3.7	1.27

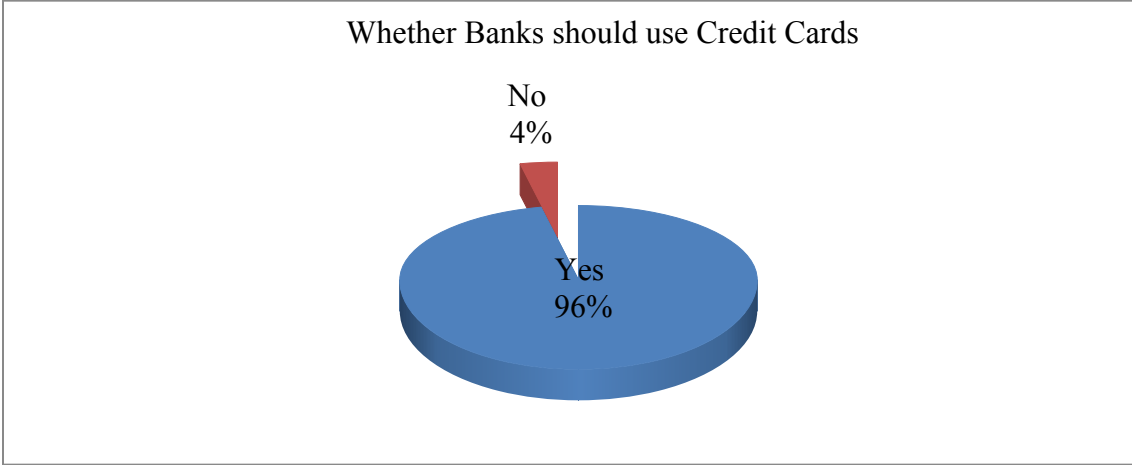
Source: Field data, 2018

From Table 4.2, it is seen that a majority of 77.3 % agree that Credit cards has increased the number of customers registered by the bank and only 14.6% disagree. 76% agree that the Credit cards has led to increased customer loyalty while 13.3% disagree on the same. Majority of 89.3% agree that, Credit cards has led to improved bank's reputation and image and 6.7% disagree. Majority of 68% agree that, Credit cards has led to increased number of bank transactions while 20% of the respondents disagree. 73.4% agree that, Credit cards has led to improved customer services and 11% disagree on the same. Majority of 81% agree that Credit cards has led to the fulfilment of customer needs while 13.3% of the respondents disagree. Generally, this therefore implies that majority respondents agree that credit cards significantly improve the performance of commercial banks. The results are in agreement with Nyambariga (2011), in his research on the effects of credit cards strategy by banks and Performance, who found out that commercial banks are increasingly implementing credit cards so as to improve performance. The findings of this study also confirm

the research results of (Odhiambo, 2012) whose study sought to determine the relationship between adoption of credit cards and credit card holders' satisfaction. The results showed that credit cards have contributed positively to satisfaction of credit card holder's needs.

4.4.5 Banks and Credit Cards Customers

Respondents were asked to indicate whether they would advise banks to adopt credit cards in order to improve reliability of banks. The results are presented in Figure 4.7



Source: Field data, 2018

Figure 4.7: Whether Banks should adopt Use of Credit Cards

It is seen from the Figure 4.7 that, majority of 96% indicated yes, and only 4% indicated no. This implies that, generally most respondents agreed that commercial banks in Kenya should adopt use of credit cards in order to improve reliability of service delivery to customers. The main reason for given for this was credit cards will attract and keep customers loyal to the company. Further credit cards increase interest income hence increasing the banks performance. Credit cards also improve the bank's loan book which is a good measure of the banks performance. Credit cards provide

quick access to credit for the banks customers and monthly repayments can be directly recovered from the account.

4.4.6 Pesalink Financial Innovation and Performance of Banks

Pesalink is a platform that permits one banks to talk to another bank via mobile phone applications or unstructured supplementary service data (USSD) codes, however, each bank is allowed to adapt and fit in Pesalink onto its own mobile banking platforms. The inter-banking money transfer service enables customers to send money from one bank account to another in real time. This study sought to establish the effect of Pesalink on performance of commercial banks in Kenya. Descriptive statistics of percentages, mean and standard deviation were used to analyze the data.

The results were presented in Table 4.3

Table 4 .3: Pesalink Financial Innovation and Performance of Banks

	5	4	3	2	1	Mean	SD
1 Pesalink has increased the number of customers registered by the bank	48%	33.3%	9.3%	8%	1.3%	4.18	0.99
2 Pesalink has led to increased customer loyalty	57.3%	32%	4%	4%	2.7%	4.37	0.94
3 Pesalink has led to improved bank's reputation and image	40%	28%	12%	10.7%	9.3%	3.79	1.33
4 Pesalink has led to increased number of bank transactions	41.3%	34.7%	14.7%	6.7%	2.7%	4.05	1.04
5 Pesalink has led to improved customer service	53.3%	32%	4%	5.3%	5.3%	4.23	1.11
6 Pesalink has led to the fulfilment of customer needs	38.7%	28%	12%	14.7%	6.7%	3.77	1.29
7 Pesalink has enabled efficient and timely provision of services to customers	38.7%	33.3%	12%	13.3%	2.7%	3.92	1.14

Source: Field data, 2018

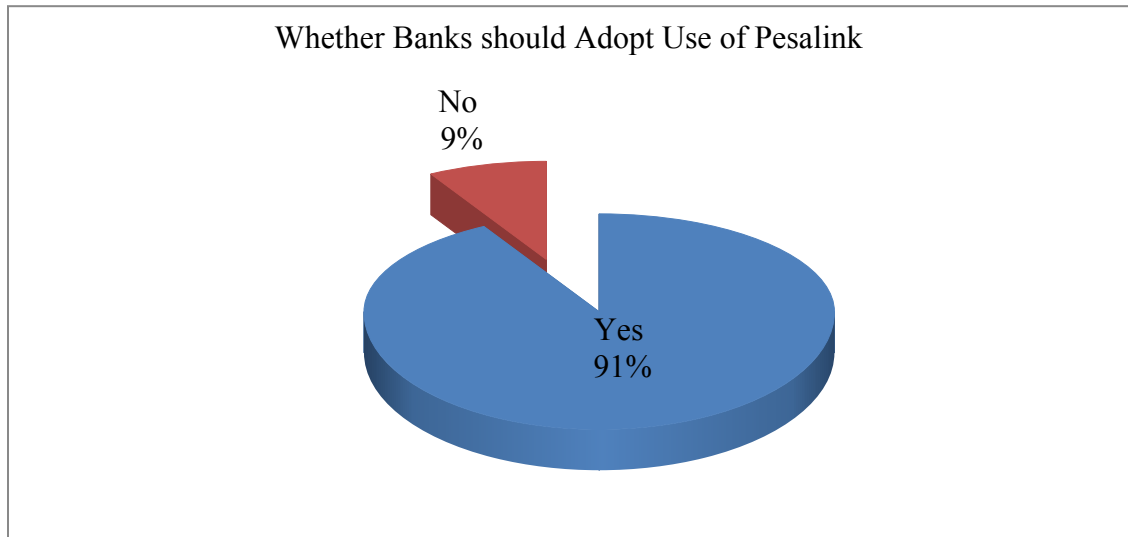
As seen from Table 4.3, a majority of 73% agreed that, Pesalink has increased the number of customers registered by the bank, and only 20% disagreed. It is also seen that, 76% agreed that, Pesalink has led to increased customer loyalty and only 12% disagreed. A majority of 78% agreed that Pesalink has led to improved bank's reputation and image and 7% disagreed on the same. 80% agreed that the Pesalink has led to increased number of bank transactions and 9% disagreed. A majority of 70% agreed that Pesalink has led to improved customer service while only 10% disagreed. A majority of 88% agreed that Pesalink has led to the fulfilment of customer needs and only 4% disagreed. Results further show that a majority of 80% agreed that Pesalink has enabled efficient and timely provision of services to customers and only 11% disagreed. This implies that most respondents agreed that Pesalink could significantly improve performance of commercial banks in Kenya.

The research finding of this study concurs with the study findings of (Kirathe,2017)in his study the role of Pesalink innovation business model realignment of commercial banks in Kenya who found out that Pesalink improves value creation of commercial banks since it has led to improved customer satisfaction, increased customer loyalty, improved market share by increasing the number of customers subscribing to be the bank account holders increasing the total customer base of the banks and also increased customer loyalty. The results of this study also confirm the findings of (Oyeyinka, 2006) that the forces of change that have had an immense impact on the performance of commercial banks include mainly financial innovation advancement. The results were however, contrary to Chang (2012), who in his study on aligning Pesalink strategy with business strategy in commercial banks in Nigeria. He found out that a significant number of commercial banks are

spending a lot of money on Pesalink platforms than they are earning hence this is not a worthwhile investment.

4.4.7 Banks and Adoption of Pesalink

Respondents were asked to indicate whether they would advise banks to adopt Pesalink in order to improve reliability of banks. The results are presented in Figure 4.8.



Source: Field data, 2018

Figure 4.8: Whether Banks Should Adopt Use of Pesalink

It is seen from the Figure 4.8 that, majority of 91% indicated yes, and only 9% indicated no. This implies that, generally most respondents agreed that commercial banks in Kenya should continually adopt use of Pesalink in order to improve reliability of service delivery to customers hence increase performance. The main reason for given for this was Pesalink is a cheaper method of fund bank charges income hence increasing the banks performance. Pesalink also improve the bank's loan book which is a good measure of the banks performance. Pesalink provide quick,

timely and reliable access to cash for the banks customers and monthly repayments can be directly recovered from the account.

4.4.8 mVisa and Commercial Banks Performance

mVisa is a new financial innovation that uses quick response code (QR) code-based payment service. QR code is a two-dimensional code made up of black and white squares which can be read by smartphone cameras, point of sale (POS) terminals or other devices. The QR code was initially developed for the automotive industry in Japan and patented by Toyota subsidiary Denso Wave. QR codes can be used by anyone providing that they adhere to the code standards.

This study sought to determine the effect of mVisa on performance of commercial banks in Kenya. Descriptive statistics of percentages, mean and standard deviation were used to analyze the data. The results were presented in Table 4.4

Table 4.4: mVisa and Commercial Banks Performance

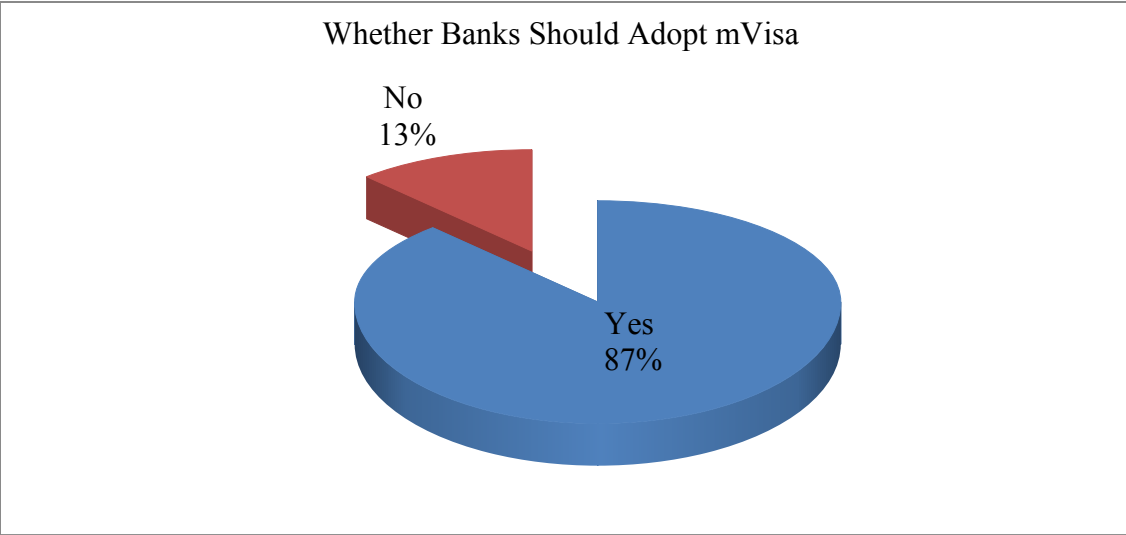
	5	4	3	2	1	Mean	SD
1 mVisa has increased the number of customers registered by the bank	38.7%	44%	10.7%	6.7%	0%	4.15	0.87
2 mVisa has led to increased customer loyalty	58.7%	32%	4%	2.7%	2.7%	4.41	0.90
3 mVisa has led to improved bank's reputation and image	37.3%	34.7%	12%	10.7%	5.3%	3.88	1.19
4 mVisa has led to increased number of bank transactions	34.7%	38.7%	13.3%	12%	1.3%	3.93	1.04
5 mVisa has led to improved customer service	54.7%	36%	4%	4%	1.3%	4.39	0.85
6 mVisa has led to the fulfilment of customer needs	34.7%	37.3%	8%	14.7%	5.3%	3.81	1.22
7 mVisa has enabled efficient and timely provision of services to customers	38.7%	34.7%	8%	13.3%	5.3%	3.88	1.22

Source: Field data, 2018

As seen from Table 4.4, a majority of 82.7% agreed that, mVisa has increased the number of customers registered by the bank and only 6.7% disagreed. 90.7% agreed that, mVisa has led to increased customer loyalty and 5.4% disagreed. A majority of 74% agreed that, mVisa has led to improved bank's reputation and image and only 12% disagreed. 72% agreed that, mVisa has led to increased number of bank transactions and only 16% disagreed. A majority of 73.4% agreed that mVisa has led to improved customer service and only 13.3% disagreed. 76% agreed that, mVisa has led to the fulfilment of customer needs and only 6% disagreed. Results further indicate that 80% of the respondents agreed that mVisa has enabled efficient and timely provision of services to customers, while only 6% disagreed that mVisa has enabled efficient and timely provision of services to customers. The results generally show that most respondents agreed that mVisa platform significantly affects the performance of commercial banks in Kenya. The results were in consistent with Agabi (2017), in his study Strategic Financial Practices Adopted by commercial banks in Kenya. He found out that mVisa, contributed to improving performance of commercial banks, in terms of profitability. His result suggested that the institutions had employed mVisa platform to ensure better performance.

4.4.9 Banks Performance and Adoption of mVisa

Respondents were asked to indicate whether they would advise banks to adopt mVisa platforms in order to improve reliability of banks. The results are presented in Figure 4.9.



Source: Field data, 2018

Figure 4.9: Whether Banks Should Adopt mVisa

It is seen from Figure 4.9 that, majority of 87 % indicated that they would advise banks to continually adopt mVisa platforms, and only 13% indicated they would never advice banks to adopt mVisa platforms. The reason given for advising banks not to adopt mVisa platforms was security and costs involved in these platforms. This implies that, generally most respondents agreed that commercial banks in Kenya should adopt use of mVisa cards increases the deposits of the bank hence increasing performance of banks. mVisa should also be introduced in order to improve reliability of service delivery to customers. The main reason for given for this was mVisa will attract and keep customers loyal to the company. Further mVisa increases interest income hence increasing the banks performance. mVisa provide allows convenience in making banking transactions since at the merchants point of sale the funds are directly credited to the account without the customer visiting the banking premises.

4.4.10 Performance

Performance is a set of financial and non-financial indicators which offer information on the degree of achievement of objectives and results in an organization. Non-financial elements of performance in this study are customer loyalty and market share. Financial elements of performance in this study are profitability and return on investments.

This study sought to establish the influence of financial innovations on performance of commercial banks in Kenya. To determine this, constructs of financial innovations (credit cards, mpesa link, mVisa and internet banking) were scored on a likert scale 1-5 with 5 representing the highest score implying strongly agree that financial innovations are very influential on performance of commercial banks in Kenya, and 1 representing the lowest score, meaning not influential in performance.

Table 4.5: Performance

	5	4	3	2	1	Mean	SD
Efficient low cost distribution channels	45.3%	34.7%	12%	4%	4%	4.13	1.04
Total customer base	56%	32%	4%	5.3%	2.7%	4.33	0.98
Serving specific types of customers	38.7%	25.3%	14.7%	14.7%	6.7%	3.74	1.3
Using customer information to create products that will satisfy customer needs	40%	33.3%	10.7%	13.3%	2.7%	3.95	1.14
Bonuses and discounts	34.7%	44.0%	14.7%	0%	6.7%	4.1	0.88
Change in products/services and customer preferences	48.0%	32.0%	8%	6.7%	5.3%	4.11	1.15

Source: Field data, 2018

Table 4.5 indicates, a majority of 80% agreed that, use of efficient low cost distribution channels is influential on performance and only 8% disagreed. 86% agreed that, strong image identification is influential on performance and only 3% disagreed. A majority of 88% agreed that, serving specific types of customers is influential on performance and 8% disagreed. 64% agreed that, using customer information to create products that will satisfy customer needs is influential on performance and only 21.4% disagreed. 78.7% agreed that bonuses and discounts is influential on performance and 38% disagreed. 6.7% agreed that change in products and services with the changes in customer preferences are influential on performance and 27% disagreed. From the results above, this implies that most commercial banks in Kenya agree that financial innovations are influential on performance of commercial banks in Kenya.

The results are consistent with Yin and Zhengzheng (2010) who found out that financial innovations provide the foundation for better performance in organizations.

4.5 Diagnostic Tests

This section describes the inferential statistics used in this study. This includes, Normality tests, reliability tests, multicollinearity tests and Autocorrelation.

4.5.1 Reliability Test

This test was used to measure the level of consistency of the measurement instruments. This study used Cronbach's alpha to test reliability.

A reliability coefficient of >0.70 was considered acceptable.

Table 4.6: Summary of the Reliability Test Results

Section	No. of items	Cronbach's Alpha	Comments
Internet Banking	7	0.866	Reliable
Credit Cards	7	0.873	Reliable

Pesalink	7	0.866	Reliable
M-Visa	7	0.901	Reliable
Performance	7	0.945	Reliable

Source: Field data, 2018

This study found an alpha coefficient for all the variables >0.70 indicating that the instrument was reliable.

4.5.2 Normality test

Kolmogorov-Smirnov and Shapiro-Wilk test are used to test for normality. For large sample sizes, Kolmogorov-Smirnov is used while for small sample sizes Shapiro-Wilk test is used (Thode, 2002). Shapiro-Wilk test was used in this study. The tests results show that the p-values for the variables were > 0.05 . This implies that the variables were normally distributed as shown in Table 4.7.

Table 4.7: Normality Test using Shapiro-Wilk Tests of Normality

	Tests of Normality					
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Internet Banking	.196	75	.000	.917	75	.000
Credit Cards	.204	75	.000	.884	75	.000
Pesa Link	.153	75	.000	.947	75	.003
M-Visa	.210	75	.000	.894	75	.000
Performance	.165	75	.000	.914	75	.000

a. Lilliefors Significance Correction

Source: Field data, 2018

4.5.3 Multicollinearity Test

To test for correlation between the independent variable Multicollinearity was used. Existence of Multicollinearity is evidenced by the standard errors for the regression coefficient estimators becoming inflated which results in t-statistics becoming too small and less powerful in terms of their ability to reject the null hypothesis. Variance inflation factor and tolerance levels are used to test for Multicollinearity. VIF of less than 10 and tolerance level of more than 0.1 are preferred (Munga, 2014).

Multicollinearity was eliminated through a stepwise regression technique systematically. Aczel and Sounderpadian (2002) states that stepwise regression is a mixture of backward elimination and forward selection methods which involves eliminating a variable and entering a variable permanently to the regression equation respectively .a summary of Tolerance, and VIF proportions is provided in the table below.

Table 4.8: Collinearity diagnostics

Model	Collinearity Statistics	
	Tolerance	VIF
Internet Banking	.307	3.246
Credit Cards	.075	13.362
Pesalink	.423	2.363
Mvisa	.107	9.368

Dependent Variable: Performance

Source: Field data, 2018

In the above Table 4.8 credit cards had the lowest tolerance level at 0.075 and number Pesalink had the highest tolerance level at 0.423. Tolerance level for all the independent variables were greater than 0.1 this suggested that there was no Multicollinearity problem. All the variables apart from

credit cards had a VIF of less than 10 hence there was an indication that there was no Multicollinearity among the independent variables.

4.5.4 Auto correlation Test

Durbin Watson test was used to test for autocorrelation. The Durbin Watson statistic is a number that tests for autocorrelation in the residuals from a statistical regression analysis. The Durbin-Watson statistic is always between 0 and 4. A value of 2 means that there is no autocorrelation in the sample. Values from 0 to less than 2 indicate positive autocorrelation and values from more than 2 to 4 indicate negative autocorrelation.

Table 4.8: Model Summary

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	
1	.807 ^a	.651	.631	.29634	1.446	

a. Predictors: (Constant), internet banking, credit cards, Pesalink, mVisa
 b. Dependent Variable: Performance

Source: Field data, 2018

Table 4.8 above indicates that there is a positive autocorrelation (1.446) in the OLS estimators. This means that the OLS estimators may not achieve the smallest variance. In addition, the estimated standard errors of the coefficients are biased, the OLS estimates, however, remain unbiased.

4.6 Model Fitting

This section shows the output after empirical data analysis.

4.6.1 Coefficient of Determination

The coefficient of determination was adopted to determine the suitability of the data to the statistical regression model which was mainly used in the analysis

The multiple regression (R) indicates the regression between dependent variable and the independent variables jointly predicted by the model. The multiple coefficient of determination (R^2) determines the changes of variation in dependent variable as explained by dependent variables jointly. The table 4.9 shows the values of R and R^2 .

Table 4.9: Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.651 ^a	.631	.651	.29634

a. Predictors: (Constant)internet banking, credit cards, Pesalink, mVisa

Source: Field data, 2018

In Table 4.9 multiple coefficients of variation (R) was 0.631 which implies that the degree of association between performance of commercial banks in Kenya and internet banking, credit cards, Pesalink, and mVisa financial innovations is strong and positive. The (R^2) was 65.1% which implies that 61.5 % variations in performance of commercial banks in Kenya are explained by internet banking, credit cards, Pesalink, and mVisa financial innovations in the model, while 38.5 % of variations in performance of commercial banks is explained by random error or other factors which were not included in the model.

4.6.2 ANOVA

This data analysis procedure was used to determine whether there is significant differences among the variables. The study used the ANOVA F-test

Table 4.10 Analysis of Variance Table

ANOVA						
Model		Sum of Squares	Df	Mean Square	t	Sig.
1	Regression	11.482	4	2.871	32.688	.000 ^b
	Residual	6.147	70	.088		
	Total	17.630	74			

a. Predictors: (Consta
b. nt)internet banking , credit cards, Pesalink,
mVisa

b. Dependent Variable: Performance

Source: Field data, 2018

From the ANOVA statistics in the above Table 4.10, the ANOVA F test has a p-value of 0.000 which shows that the data is statistically significant and ideal for making a conclusion on the population's parameter. The F calculated at 5% Level of significance was 32.688 Since F calculated is greater than the F critical (value = 4.76), this shows that the overall model was significant i.e. there is a significant relationship between performance of commercial banks in Kenya and internet banking, credit cards, Pesalink, and mVisa financial innovations.

4.6.3 Correlation

To determine the degree or strength of linear relationship among the variables, Pearson correlation (r) was used. Linearity increases the predictive power of the model and the validity of the estimated coefficients. The study sought to determine the correlation between the variable in order to determine the strength of the relationship at 1% significance level.

A correlation of $r > \pm 0.7$ implies that the variable is strongly related negatively or positively

Table 4.11 Correlation

Correlations		Performance	Internet Banking	Credit Cards	Pesalink	mVisa
Pearson Correlation	Performance	1.000	.768	.644	.564	.663
	Internet Banking	.768	1.000	.828	.627	.754
	Credit Cards	.644	.828	1.000	.756	.943
	Pesalink	.564	.627	.756	1.000	.737
	mVisa	.663	.754	.943	.737	1.000
Sig. (1-tailed)	Performance	.	.000	.000	.000	.000
	Internet Banking	.000	.	.000	.000	.000
	Credit Cards	.000	.000	.	.000	.000
	Pesalink	.000	.000	.000	.	.000
	mVisa	.000	.000	.000	.000	.

Source: Field data, 2018

The correlation coefficient was 0.768 with p –value (0.000) which was found to be significant at 1% significance level this implies that there exists a strong positive relationship between internet banking financial innovation and performance of commercial banks. An increase in of use internet banking financial innovation will lead to an increase in performance of commercial banks. The results agree with Malhotra and Singh (2010) in his study on the effects of strategies adopted by

commercial banks to attract business through technology, who found out that performance, is improved if internet banking is employed in an organization. His results suggested that organizations had employed internet banking to ensure that performance was achieved.

The correlation coefficient was 0.644 with p-value (0.000) which was found to be significant at 1 % significance level this implies a strong positive relationship between credit cards financial innovation and performance of commercial banks. An increase in use of credit cards financial innovation will lead to an increase in performance of commercial banks.

The results were contrary to Al-qudah (2012) in his study on factors affecting the performance of commercial banks in Kenya. He found out that there was no significant relationship between use of credit cards and performance of commercial banks; this can be explained by the fact that in his study was focused in commercial banks located in one county where adoption of credit cards was still low. ,

The correlation coefficient was 0.564 with p-value (0.000) which was found to be significant at 1 % significance level this implies a strong positive relationship between Pesalink financial innovation and performance of commercial banks in Kenya. An increase in use of Pesalink financial innovation will lead to an increase in performance of commercial banks in Kenya.

The results were in consistent with, Boniface (2011), in his study financial strategies applied by health insurance companies to improve profitability. He found out that financial innovation, contributed to improving performance, in terms of profitability. His result suggested that institutions had employed financial innovation to ensure better performance

The correlation coefficient was 0.663 with p-value (0.000) which was found to be significant at 1 % significance level this implies a strong positive relationship between mVisa financial

innovations and Performance of commercial banks. An increase in use of mVisa financial innovation will lead to an increase in performance of commercial banks.

The results agreed with Thomas (2014), in his study getting the most out of all your customers. He found out that, commercial bank firms perform better with implementation of financial innovations. His results suggested that institutions had employed financial innovation to ensure better performance.

4.6.4 Multiple Regression

In determining the cause effect relationship between the dependent variable and the independent multiple regression was used .The variables regression coefficients were tested at the 5% level of significance using t –test. This is shown in the table below.

Table 4.12: Regression Coefficients

Model		Unstandardized Coefficients		Standardized	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.275	.349		.788	.433
	Internet Banking	.804	.128	-.803	6.307	.000
	Credit cards	-.651	.221	-.760	-2.945	.004
	Pesalink	.139	.107	.141	1.301	.198
	Mvisa	.623	.201	.670	3.102	.003

a. Dependent Variable:
Performance

Source: Field data, 2018

From the regression coefficient Table 4.12 above, it is established that when all factors are held constant at zero that is internet banking, credit cards, pesalink and Mvisa the level of performance will be 27.5% From the findings in table 4.13, a unit increase in internet banking will lead to an 80.4% increase in performance, a unit increase in credit cards will lead to a decrease in performance with 65.1% while a unit increase in pesalink will increase performance with 13.9% lastly a unit increase in mVisa leads to an increase in performance with 62.3%. From the results, internet banking has the highest effect on the performance of commercial banks, followed by credit cards, mVisa then pesalink. From the results of regression analysis, the regression model equation can be written as

$$Y = 0.275 + 0.804x_1 - 0.651x_2 + 0.139x_3 + 0.623x_4 + e$$

Where:

Y = Performance of commercial banks

0.275 = This is the level of performance of commercial banks when all the independent variables are held constant.

0.804 = Coefficient of X1 (Internet banking). Which indicates that a unit increase in internet banking leads to an increase of 80.4% performance.

-0.651 = Coefficient of X2 (credit cards). Which implies that a unit increase in credit cards will reduce performance with 65.1%.

0.139 = Coefficient of X3 (pesalink). Which implies that a unit increase in pesalink will increase performance with 13.9%

0.623 = Coefficient of X4 (mVisa). Which implies that a unit increase in mVisa will increase performance with 62.3%

According to the Table 4.12, the variables (internet banking, credit cards and mVisa) were significant as their significance value was less than 0.05, however pesalink was not significant as its significance value was more than 0.05 therefore the independent variables (internet banking, credit cards and mVisa financial innovations) were positively correlated with commercial banks in Kenya, while pesalink was not positively correlated with performance in Kenya.

4.6.5 Hypothesis Testing

The hypothesis of the study were all concluded to be null and presented as shown below.

- i. *H₀₁: There is no significant effect of internet banking on the performance of commercial banks in Kenya.*
- ii. *H₀₂: There is no significant effect of credit cards on the performance of commercial banks in Kenya.*
- iii. *H₀₃: There is no significant effect Pesalink on the performance of commercial Banks in Kenya in Kenya.*
- iv. *H₀₃: There is no significant effect mVisa on the performance of commercial Banks in Kenya in Kenya.*

From the significance values and their level of regression coefficient, we reject the null hypothesis in all the three cases and therefor conclude that internet banking, credit cards, pesalink and mVisa have significant effect on the performance of commercial banks in Kenya.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the findings, discussions, conclusions and recommendations emanating from the results of this study. The discussions look at the four objectives of the study and discuss the results in line with the objectives. This chapter also compares and contrasts the results with the extant literature and draws the conclusion from the findings. It also gives the recommendations of further studies. The purpose of this study was to identify the effect of innovation on performance of commercial banks

5.2 Summary

From the analysis the four objectives of the study were accomplished and will be discussed in the sections that follow.

5.2.1 Internet banking and Performance of Commercial Banks

The study had sought to find out the link between internet banking and performance of Commercial banks. The study revealed that a unit increase of internet banking leads to an 80.4% increase in performance of the commercial banks. Thus, there exists a positive relationship between internet banking and performance of commercial banks. A significance variable of .000 exists implying that there exists a significant relationship between internet banking and performance.

A correlation coefficient of 0.768 with p –value (0.000) found to be at 1% significance level. On the ground of research results it is evident that internet banking is statistically significant on commercial Banks performance and that there exists a strong positive relationship between internet banking and performance of commercial banks. We therefore reject the null hypothesis that has been formulated and establish that there is significant effect of internet banking on the performance of commercial banks.

5.2.2 Credit cards and Performance of Commercial Banks

The study evaluated the effect of credit cards on the performance of Commercial banks. The study revealed that a unit increase in credit cards leads to a 65.1% increase in performance of commercial banks, implying a strong positive relationship exists between credit cards and performance. A significance variable of .004 also confirms that there exists a significant relationship between credit cards and performance.

The correlation coefficient was 0.644 with p -value (0.000) with a 1 % significance level this implies a strong positive relationship between credit cards financial innovation and performance of commercial banks. An increase in the use of credit cards financial innovation will lead to an increase in the performance of commercial banks. The study further rejects the null hypothesis created and indicates that there exists a significant effect between credit cards and performance.

5.2.3 Pesalink and Performance of Commercial Banks

The study sought to establish the effect of Pesalink on the performance of commercial banks. The

results of the coefficient of correlation indicate that a unit change in Pesalink leads to a 13.9% increase in the bank's performance. Thus, Pesalink affects performance in a significant manner. Also, a significance variable of 0.198 confirms that there exists no significant effect between pesalink and performance.

The correlation coefficient was 0.564 with p-value (0.000) which was found to be significant found to be significant at 1 % significance level this result indicate that Pesalink affects performance of commercial banks in a manner that is statistically significant. Also based on the above research findings we reject the null hypothesis and indicate that there exists a significant effect between Pesalink and performance of commercial banks.

The study also reveals that despite the fact that Pesalink was established in 2017 most commercial banks in Kenya have adopted the mode of payment and fund transfer due to its convenience and speed of interbank fund transfers. This improves the total customer base as the customers are able to transact huge funds through the phone

5.2.4 mVisa and Performance of Commercial Banks

Among the objectives of this study was to establish the effect of mVisa on the performance of commercial banks. The research findings indicate that a unit change in the mVisa leads to a 62.3% change on the performance of commercial banks. In addition to a 0.003 significance variable both confirms that there exists a significant effect of mVisa on performance of commercial banks.

The correlation coefficient was 0.663 with p-value (0.000) was found to be significant at 1 % significance level this implies a strong positive effect of mVisa on Performance of commercial banks. We therefore reject the null hypothesis formulated and conclude that there is a significant

relationship between mVisa and performance of commercial banks. However, the study also reveals that mVisa has been adopted by a few commercial banks in Kenya.

5.3 Conclusion

From the findings, it can be concluded that financial innovation improves performance of commercial banks. The study made the following conclusions on the various variables.

5.3.1 Internet banking and Performance of Commercial Banks

The study has established that internet banking positively affects the performance of commercial banks. This is indicated by the positive coefficient of correlation in the regression model and the significance level. This may have been attributed to the increased customer registration with the bank to access banking services through internet banking which is more convenient and cost effective and secure banking method. This retains the existing customers and attracts more increasing the total customer base, thus improving performance.

5.3.2 Credit Cards and Performance of Commercial Banks

From the findings, it can be concluded that credit cards have a positive effect on the total customer base and hence the performance of commercial banks. This has been revealed by the positive correlation in the regression model and the significance level that could have been brought about by the increased customer registration with the bank in order to access the credit facility which improves the bank image as it is believed to be stable since it has the funds and to lend which generates to customer loyalty as the customers are tied to the bank due to the credit facility they maybe servicing.

5.3.3 Pesalink and the Performance of Commercial Banks

The study concludes that Pesalink has a positive effect on the total customer base and hence the banks performance. This is evidenced by the positive correlation in the regression model and the significance level that may have been as a result of its convenience and speed of interbank fund transfer which improves the total customer base as the customers are able to transact huge funds through the phone. This method is also cheaper than the normal real time gross settlement method.

5.3.4 mVisa and the Performance of Commercial Banks

From the study findings, it can be concluded that mVisa has a positive effect on the performance of commercial banks attributed to the positive correlation in the regression model and the significance level. This could have been caused by the safe payment mode involved where the funds are transferred to the merchants account direct and also the customer to the merchant does not need to carry cash which creates loyalty of the customers bank since it will be hard to change the banking point since the mode is linked to the account which in turn improves the bank customer base.

5.4 Recommendations

The following are the researcher's recommendation based on the results of the study that commercial banks and other stakeholders can use:

The commercial banks and the various regulatory bodies should endeavor to innovate for improved and cheaper ways of serving consumers, with shorter transaction turnaround time, secure, increased volume of transactions in order to suite also the customers with huge transactions.

Through this the commercial banks will be able to increase customer satisfaction, improve the image of the commercial banks, recruit more customers and even maintain the existing customer base.

The various regulatory authorities in the financial industry including the government and Central bank of Kenya should encourage banks to engage in innovation in order to improve performance. However, they should monitor and regulate closely such developments in innovation in the various financial industry to ensure that integrity is upheld in the whole process and usage of the various payment systems.

The top management of the commercial banks should take the responsibility to create awareness on the existence of the various products that are customized to meet the customers' needs and also maximize the revenue generated by the banks from the usage of the products. The banks management may appoint various persons to spearhead the process or invest in advertisement since products like mVisa and Pesalink their uptake is low despite having a positive effect on the performance of commercial banks.

For the various system developers, there is necessity to form better and efficient security systems which may detect, control, prevent and manage fraud on a variety of innovation channels. This is because innovation has challenges particularly those related to security that can lead to reputation risk and loss of poise by the consumers since if the customer withdraws their funds due to loses of confidence in the alternative channels the sustainability of the banks will be at risk.

5.5 Recommendations for Future Research

From the findings the following areas were suggested for further research.

The study sought to determine the role of financial innovation on performance of commercial banks in Kenya. This study only focused on the commercial banks in Kenya alone, thus there is need for more research on the other financial institutions including Sacco's and housing finance and not just commercial banks. This is because these institutions are also key in the financial industry and the changes in the financial products due to innovation also have an impact on their operations.

The study also recommends that further areas of study should focus on a longer time span than what the current time span used. This study has used a shorter period since most of the innovations have just been recently launched in the market therefore a further study on this period for a longer time would help clarify whether the observed effects of innovation on the bank's performance changes over the years to come and when all institutions have fully embraced the products.

The study also recommends that there should be more studies done on the effect of financial innovation on the performance of commercial banks with a major focus on other non-monetary financial measures including improved brand image, customer satisfaction, and bank image. This is because these non-financial measures are key to uptake of the alternative business channel products by the customers.

REFERENCES

- Abbott, M. L., & McKinney, J. (2013). *Understanding and applying research design*. (1st ed.). Somerset, NJ: John Wiley and Sons.
- Aczel, A., & Sounderpadian, J. (2002). *Business statistics (5th ed.)*. New York: Irwin: McGraw hill companies.
- Adams, J., Hafiz, T.A. Khan, R. & David, W. (2007). *Research methods for graduate business and social science students*. California: Sage.
- Agabi C. (2017). *Visa, leading banks launch mVisa in Nigeria*. Retrieved on 20th June, 2018 from <https://www.dailytrust.com.ng/news/business/visa-leading-banks-launch-mvisa-in-Nigeria/206803.html>
- Ahmed, H. K., Raza, A., Amjad, W., & Akram, M. (2011). Financial performance of finance companies in Pakistan. *Interdisciplinary Journal of Contemporary Research in Business*, 2(12), 732.
- Aker, J. C. (2010). Information from markets near and far: mobile phones and agricultural markets in Niger. *American Economic Journal: Applied Economics*, 2(3): 46-59.
- Aker, J. C., & Mbiti, I. M. (2010). Mobile phones and economic development in Africa

- Journal of Economic Perspectives, 24(3), 207–232, Summer 2010.
- Al-qudah, M. A. S. (2012). Electronic credit cards usage and their impact on the banks profitability. *Interdisciplinary Journal of Contemporary Research in Business*. 4 (7).
- Alzoubi, N.Y. (2014). The extent of using financial performance and nonfinancial measures in evaluating branches performance of commercial banks in Jordan. *Research Journal of Finance and Accounting*, 6, 222-1697.
- Anderson, E., Fornell, C., & Lehmann, D, (1994). “Customer satisfaction, market share, and profitability”, *Journal of Marketing (July)*, 53–66
- Andrew, F. (2002). *Practical business statistics*. New York: McGraw Hill/ Irwin.
- Bagorogoza, J., & Waal, A. D. (2010). The role of knowledge management in creating and sustaining high performance organizations the case of financial institutions in Uganda. *World Journal of Entrepreneurship Management and Sustainable Development*, 6 (4), 307-323.
- Bankelele (2017). *MVisa launches in Kenya with free money transfer*. Retrieved on 20th June, 2018 from <http://bankelele.co.ke/2017/07/mvisa.html>
- Banker, R. D., Potter, G., & Srinivasan, D. (2000). “An empirical investigation of an incentive plan includes nonfinancial performance measures.” *The Accounting Review* 75(1), 65–92.
- Boewerman, O. (2003). *Business statistics in practice*. New York: McGraw Hill/Irwin.

Burns, N., and Grove, K. (2003). *Understanding nursing research* (3rd ed.). Philadelphia: W.B. / Saunders Company.

Central Bank of Kenya (2011). Annual reports, central bank of Kenya. Retrieved on 20th June, 2018 from <http://www.centralbank.go.ke> (2017).

Annual report and financial statement, 2016/2018. Retrieved on 20th June, 2018 from <http://www.centralbank.go.ke> (2017). *Bank supervision annual report*. Retrieved on 22th June, 2018 from <http://www.centralbank.go.ke>

Ceylan, O., Emre, O., & Asli, D. (2008). *The impact of internet-banking on bank profitability-The case of Turkey*. Oxford Business & Economics Conference Program ISBN: 978-0-9742114-7-3.

Cytonn Investments (2017). Kenya listed commercial banks analysis Cytonn Q3, 2017 Banking sector report, Retrieved on 2nd July 2018 from <https://www.cytonn.com>

DeKool, D. (2004). Monitoring and Utilization: Surveillance, Struggle, Symbol or Source of Inspiration? EGPA Conference, Ljubljana, September 2004.

Dawson, C., (2009). *Practical Research Methods: A User-Friendly Guide to Research*. United Kingdom: Newtec, Books Ltd, 3.

Demombyenes, G. & Thegaya, A. (2012). *Kenya's Mobile revolution and the promise of money savings*. World Bank policy research working paper, 5988.

Drost, E. A., (2011). Validity and reliability in social science research. *Education Research and Perspectives*, 38(1), 105-123.

Eccles, R, G. (1991) "Performance measurement manifesto." *Hurra Business Review* 69(1).

Family Bank (2017). *Integrated report and financial statements*. Retrieved on 8th July, 2018 from <http://familybank.co.ke/wp-content/uploads/2018/06/Family-Bank-Integrated-Report-and-Financial-Statements-2017-1.pdf>

Francesca, A., & Claeys, P. (2010). *Innovation and performance of European banks adopting internet*. University of Milan and Cass Business School, City University London and University of Barcelona Centre for Banking Research, Cass Business School, City University London Working Paper Series, WP 04/10.

Gorton, G., & Metrick, A. (2010). *Securitized banking and the run on report*. Yale school of management, working paper.

Graham, J.R., Harvey, C.R., Rajpogal, S., (2005). “The economic implications of corporate financial reporting”, *Journal of Accounting and Economics*. 40, 3–73.

Hartung Richards, (2014). *The Asian Banker. QR code payment system, a game changer?*
Retrieved on 16 August 2018 from

<http://www.theasianbanker.com/updates-and-articles/qr-code-payment-system,-a-game-changer>

Hendrickson, J., & Nichols, M. W. (2011). Small bank performance: The case of U.S.A commercial banks. *Journal of Money, Investment and Banking*.

Hofmann, C. (2001). “Balancing Financial and Non-Financial Performance Measures”. University of Hanover, Koenigs worther Platz 1, 30167 Hanover, Germany.

Hughes, K. (2000). “The value relevance of non-financial measures of air pollution in the electric utility industry”, *The Accounting Review* 75(2), 209-228.

- India Infoline News Service (2016). *Bank of India in collaboration with Visa introduces mVisa mobile app*. Retrieved on 1st August, 2018 from <https://www.google.com/search?q=mvisa+india&oq=MVISA+INDIA&aqs=chrome.0.0l6.14787j0j8&sourceid=chrome&ie=UTF-8#>
- Ittner, C.D., Larcker, D.F., Meyer, M.W, (2003). “Subjectivity and the weighting of performance measures: evidence from a balanced scorecard”, *The Accounting Review* 78 (3), 725–758.
- Kane, E. J. (1981). Accelerating Inflation, Technological Innovation, and the Decreasing Effectiveness of Banking Regulation. *Journal of Finance*, 36 (2), 355-367.
- Kaplan, R., and Norton, D. (1996). “The Balanced Scorecard.” Boston, Ma: Harvard Business School Press.
- Kirathe, W. K. (2017). *The role of pesalink innovation in business model re-alignment of commercial Banks in Kenya*. Unpublished MBA Thesis, University of Nairobi.
- Kigen, K.P. (2010). *The impact of mobile banking on transaction costs of microfinance institutions*. Unpublished MBA Thesis, University of Nairobi.
- Kimungi, C. N. (2010). *The effects of technological innovations on the financial Performance of the commercial banks in Kenya*. Unpublished MBA project, University of Nairobi.
- Kingoo, H. (2011). *The relationship between electronic banking and financial performance of commercial banks in Kenya*. Unpublished MBA Thesis, University of Nairobi.

- Kiptum, A.K. (2016). *The effect of financial innovations on the financial performance of commercial banks in Kenya*. Unpublished MSC dissertation, Kenya College of Accountancy University.
- Kline, R. B. (2011). Convergence of structural equation modeling and multilevel modeling. In M. Williams & W. P. Vogt (Eds.), *Handbook of methodological innovation in social research methods* (562-589). London: Sage.
- Korir, M. C. (2014). *The effect of financial innovations on financial performance of Commercial banks in Kenya*. Unpublished MBA project, University of Nairobi.
- Kothari, C. (2004). *Research methodology: methods & techniques*. (2nd ed.). New age International Publishers, New Delhi, India.
- Kumar, K. V. (2011). Innovations in modern banking and innovative financial inclusion—issues and challenges. *CLEAR IJRCM*, 1(2), 147-196.
- Laitinen, E., (2002). A dynamic performance measurement system: evidence from small Finnish technology companies.” *Scandinavian Journal of Management* 18(1), 65-99.
- Luft, J., and Shields, M., (2001). *The effects of financial and non-financial performance measures on judgment and decision performance*. Working paper, Michigan State University.
- Mabrouk, A., & Mamoghli, C. (2010). Dynamic of financial innovation and performance of banking firms: Context of an emerging banking industry. *International Research Journal of Finance and Economics*, 5, 2010.
- Malhotra, P., & Singh, B. (2010). Experience in internet banking and performance of Banks. *International Journal of Electronic Finance*, 4(1), 64-83.

- McDonald, J. H. (2014). *Handbook of biological statistics* (3rd ed.). Baltimore, Maryland: Sparky House Publishing, 137-139.
- Miller Kent D., and Bromiley Philip., (1990)."Strategic risk and performance an analysis of alternative risk measures." *Academy Management Journal* 33(4), 756-779.
- Modell, S. (2004). Measurement myths in the public sector: A research note. *Financial Accountability & Management*, 20(1), 39–55.
- Moodley, C. (2007). *The impact employee satisfaction levels have on the quality of customer service in the service utility*: Telekom SA. Faculty of Management. The University of Johannesburg.
- Mugenda, O.M. & Mugenda, A.G. (2003) *Research methods*, Nairobi: Acts Press.
- Muia, S. (2017). *The effect of financial innovations on the financial performance of commercial banks in Kenya*. Unpublished MSC dissertation, Kenya College of Accountancy University.
- Muiruri, J.K. (2014). The effect of financial innovation on performance of commercial banks in Kenya. In Ngari (Ed); *International Journal of Humanities and Social Sciences* vol 4, No7 ;(pp51). Nairobi: Jomo Kenyatta University.
- Muli F. (2017). *Business today. mVisa to shake up market with free mobile money transfers*. Retrieved 18 July 2018 from <https://businesstoday.co.ke/mvisa-to-shake-up-market-with-free-mobile-money-transfers/>
- Ngago.M.A (2015).*Electronic banking and financial performance of commercial banks in Rwanda: a case study of bank of Kigali*. Unpublished banking report

- Nisar, B., Mohsin, N., Shaukut A.R., & Nadia, J. (2004). *Effect of plastic money on the performance of banking sector of Pakistan*. *J. Res. Econ. Int. Finance* 4(1):22-26.
- Nofie, I. (2011). *The diffusion of electronic banking in Indonesia*, Manchester Business School
- Ngumi, P.M (2011).
- Nyambariga, H.M. (2011). *The effect of financial innovation on the financial performance of commercial banks in Kenya*. Unpublished MBA dissertation, University of Nairobi.
- Odhiambo, A. A. (2015). Credit cards and performance of the commercial banks in Kenya portfolio. *International Journal of Arts and Commerce*, 6, 1-6.
- Pallant, J., (2010). A step by step guide to data analysis using SPSS. *SPSS Survival Manual* (4th ed.). Melbourne: Open University Press.
- Scylla, R. (1982). *Monetary Innovation in American*. *Journal of Economic History*, 42 (1), 2130
- Silber, W. (1983). *The Process of Financial Innovation*. *American Economic Review*, 73 (2), 8995.
- Speckbacher, G., Bischof, J. and Pfeiffe, T. (2003). A descriptive analysis on the implementation of Balanced Scorecards in German-speaking countries. *Management Accounting and Research*, 14, (4), 361-387.
- Tavitiyaman, P., Zhang, H. Q., and Qu, H. (2012). The effect of competitive strategies and organizational structure on hotel performance. *International Journal of Contemporary Hospitality Management*, 24 (1), 140- 159.

- Van der Stede, W.A., (2000). "The relationship between two consequences of budgetary controls: budgetary slack creation and managerial short-term orientation." *Accounting, Organizations and Society*. 25 (6), 609–622.
- Wheelen Tomas L., and Hanger J., David (1995). "*Strategic management and business polices*." (5th ed.), Addison – Wesles Publication Companies.
- William H. G. (2008). *Econometric analysis* (6th ed.). Upper Saddle River, N.J.: Prentice Hall.
- Wood, L. (2017). Lamea prepaid card market (2016-2022) Research and markets. *Dublin business wire and research markets*. Retrieved on 16 June 2018 from Lamea database.
- World Bank. (2009a). World Development Indicators. Washington, DC: World Bank. Retrieved on 16 June 2018 from <http://publications.worldbank.org/WDI/>.
- _____ (2009b). Migration and Remittances Trend 2009. Migration and Development Brief 11.
- Yeniyurt, S. (2003). "A literature review and integrative performance measurement framework for multinational companies." *Marketing Intelligence & Planning*. 21(3), 134-142.
- Zewailef I, Noor A., (2005). "The importance and extent of the use of balanced Scorecard in performance evaluation: An Empirical Study in a sample of Jordanian bank", *Jordan Journal of Business Administration*, The University of Jordan 1(2), 18-39.

Zuriekat, M., Salameh, R, and Alrawashdeh,S . (2011). “Participation in performance measurement systems and level of satisfaction”. *International Journal of Business and Social Science*. 2 (8), 159-169.

APPENDICES

APPENDIX I: LETTER OF INTRODUCTION

Date.....

To.....

.....

Dear Sir/Madam,

RE: REQUEST FOR COLLECTION OF RESEARCH DATA

I am Hendricah Nasimiyu Misiko a Master of Science Accounting and Finance student at KCA University. Presently, I’ am doing a research on the “*Effect of financial innovations on financial performance of commercial banks in Kenya*”. As such, am in the process of gathering relevant data for this study. I am glad to have you as one of my respondents in this study and kindly request for your assistance towards making this study a success by making your response on the questionnaire provided bellow.

I request to guarantee you that your responses will be treated with confidentiality and will be used exclusively for the academic purposes of this study. I appreciate if you may fill the questionnaire within the next 4 days to enable early completion of the study.

Yours Sincerely

Hendricah Nasimiyu Misiko
Student Reg No. 17/02403

APPENDIX II: QUESTIONNAIRE FOR BANKERS

PART A

Name of the Bank (optional)

.....

Demographic data (tick where applicable)

1. Your Gender

Female

Male

2. Age of the respondent

18-30

31-40

41-50

51 and above

3. How long have you worked in the banking sector?

1-5 years

6- 10 years

10-20

20 years and above

4. State your highest level of education attained?

Certificate

Diploma

Undergraduate degree

Master degree

PHD

5. Does your bank have financial innovation recorded in the recent past?

Yes

No

PART B: FINANCIAL INNOVATION AND PERFORMANCE

SECTION I: INTERNET BANKING

This segment has statements concerning the effect of internet banking on total customer base of commercial banks. Please respond with the answer that matches your opinion by ticking where applicable in the boxes using a tick (√).

Statements	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
	1	2	3	4	5
1 Internet banking has increased the number of customers registered by the bank					
2 Internet banking has led to increased customer loyalty					
3 Internet banking has led to improved bank's reputation and image					
4 Internet banking has led to increased number of bank transactions					
5 Internet banking has led to improved customer service					
6 Internet banking has led to the fulfilment of customer needs					

7 Internet banking has enabled efficient & timely provision of services to customers

8. Kindly explain the reliability of internet banking to the customers.

.....
.....
.....
.....

9. In your opinion, should banks adopt internet banking to improve performance?

YES

NO

If yes, please explain.

.....
.....
.....
.....
.....

SECTION II: CREDIT CARDS

This segment has statements concerning the effect of credit cards on total customer base of commercial banks. Please respond with the answer that matches your opinion by ticking where applicable in the boxes using a tick (√).

Statements	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
	1	2	3	4	5
1 Credit cards has increased the number of customers registered by the bank					
2 Credit cards has led to increased customer loyalty					
3 Credit cards has led to improved bank's reputation and image					
4 Credit cards has led to increased number of bank transactions					
5 Credit cards has led to improved customer service					
6 Credit cards has led to the fulfilment of customer needs					
7 Credit cards has enabled efficient and timely provision of services to customers					

8. Kindly explain the reliability of credit cards to the customers.

.....
.....
.....
.....

9. In your opinion, should banks adopt credit cards to improve performance?

YES

NO

If yes, please explain.

.....
.....
.....
.....
.....

SECTION III: PESALINK

This segment has statements concerning the effect of Pesalink on total customer base of commercial banks. Please respond with the answer that matches your opinion by ticking where applicable in the boxes using a tick (√).

Statements	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
	1	2	3	4	5
1 Pesalink has increased the number of customers registered by the bank					
2 Pesalink has led to increased customer loyalty					

- 3 Pesalink has led to improved bank's reputation and image
- 4 Pesalink has led to increased number of bank transactions
- 5 Pesalink has led to improved customer service
- 6 Pesalink has led to the fulfilment of customer needs
- 7 Pesalink has enabled efficient and timely provision of services to customers

8. Kindly explain the reliability of Pesalink to the customer

.....
.....
.....
.....

9. In your opinion, should banks adopt Pesalink to improve performance?

YES

NO

If yes, please explain.

.....
.....
.....
.....
.....

SECTION IV: mVISA

This segment has statements concerning the effect of mVisa on total customer base of commercial banks. Please respond with the answer that matches your opinion by ticking where applicable in the boxes using a tick (√).

Statements	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
	1	2	3	4	5
1 mVisa has increased the number of customers registered by the bank					
2 mVisa has led to increased customer loyalty					
3 mVisa has led to improved bank's reputation and image					
4 mVisa has led to increased number of bank transactions					
5 mVisa has led to improved customer service					
6 mVisa has led to the fulfilment of customer needs					
7 mVisa has enabled efficient and timely provision of services to customers					

8. Kindly explain the reliability of mVisa to the customer.

.....
.....
.....
.....

9. In your opinion, should banks adopt mVisa to improve performance?

YES

NO

If yes, please explain.

.....
.....
.....
.....
.....

APPENDIX III: LIST OF COMMERCIAL BANKS IN KENYA.

- (1) African Banking Corporation ltd
- (2) Bank of Africa Kenya ltd
- (3) Bank of Baroda Kenya ltd**
- (4) Bank of India
- (5) Barclays Bank Kenya ltd
- (6) CFC Stanbic Bank ltd
- (7) Charterhouse Bank ltd (under statutory management)
- (8) S B M Bank.
- (9) Citibank N.A.
- (10) Commercial Bank of Africa ltd
- (11) Consolidated Bank of Kenya ltd
- (12) Co-operative Bank of Kenya ltd
- (13) Credit Bank ltd
- (14) Development Bank of Kenya ltd
- (15) Diamond Trust Bank of Kenya ltd
- (16) DIB Bank (Kenya) ltd
- (17) Eco Bank Kenya ltd

- (18) Spire Bank ltd
- (19) Equity Bank ltd
- (20) Family Bank ltd
- (21) Fidelity Commercial Bank ltd
- (22) Guarantee Trust Bank
- (23) First Community Bank ltd
- (24) Guardian Bank ltd
- (25) Gulf Africa Bank ltd
- (26) Habib Bank A.G. Zurich
- (27) Habib Bank ltd
- (28) Imperial Bank ltd (under receivership)
- (29) I & M Bank ltd
- (30) Jamii Bora Bank ltd
- (31) Kenya Commercial Bank ltd
- (32) Sidian Bank ltd
- (33) Middle East Bank Kenya ltd
- (34) National Bank of Kenya ltd
- (35) NIC Bank ltd

- (36) Oriental Commercial Bank ltd
- (37) Paramount Universal Bank ltd
- (38) Prime Bank ltd
- (39) Standard Chartered Bank of Kenya ltd
- (40) Transnational Bank ltd
- (41) UBA Kenya Bank ltd
- (42) Victoria Commercial Bank ltd

APPENDIX IV: RESEARCH AUTHORISATION LETTER BY NACOSTI

APPENDIX V: RESEARCH PERMIT