THE EFFECT OF FINANCIAL INNOVATIONS ON THE
FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN
KENYA

BY

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DECLARATION

This research project is my original work and has not been submitted for the award of a degree in any other University.

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DEDICATION

To my husband John Kuria and my children Wanjiku and Kuria for their selfless and continuing love and support. To my mother, Beatrice Mugane whose endless sacrifice and prayer has contributed to the woman I am today.
TABLE OF CONTENTS

DECLARATION .................................................................................................................. ii
ACKNOWLEDGEMENTS ................................................................................................. iii
DEDICATION .................................................................................................................... iv
TABLE OF CONTENTS ..................................................................................................... v
LIST OF TABLES .............................................................................................................. viii
LIST OF FIGURES ........................................................................................................... ix
LIST OF ABBREVIATIONS ............................................................................................ x
ABSTRACT ....................................................................................................................... xi
CHAPTER ONE .................................................................................................................. 1
INTRODUCTION ................................................................................................................ 1

1.1 Background of the Study ............................................................................................... 1

1.1.1 Financial Innovations ............................................................................................. 2

1.1.2 Financial performance ........................................................................................... 3

1.1.3 Effect of Financial innovations on Financial Performance ..................................... 4

1.1.4 Commercial Banks in Kenya ................................................................................ 4

1.2 Research Problem ...................................................................................................... 5

1.3 Research Objectives .................................................................................................. 7

1.4 Value of the Study ..................................................................................................... 7

CHAPTER TWO ............................................................................................................... 8
LITERATURE REVIEW ...................................................................................................... 8

2.1 Introduction ................................................................................................................. 8

2.2 Theoretical Review .................................................................................................... 8
2.2.1 Schumpeter Theory of Innovation ................................................................. 8
2.2.2 Innovation Diffusion Theory ................................................................................. 9
2.2.3 Technology Acceptance Model .............................................................................. 10
2.3 Determinants of financial performance of commercial banks ..................... 10
  2.3.1 Internal Factors ................................................................................................. 10
  2.3.2 External Factors ................................................................................................. 11
2.4 Empirical Reviews ................................................................................................. 12
  2.4.1 International Evidence ...................................................................................... 12
  2.4.2 Local Evidence .................................................................................................. 14
2.5 Summary of Literature Review ............................................................................. 16

CHAPTER THREE .......................................................................................................... 18
RESEARCH METHODOLOGY ........................................................................................ 18
  3.1 Introduction ............................................................................................................ 18
  3.2 Research Design .................................................................................................... 18
  3.3 Population ............................................................................................................. 18
  3.4 Data Collection ..................................................................................................... 19
  3.4.1 Data validity and reliability .............................................................................. 19
  3.5 Data Analysis ........................................................................................................ 20
  3.5.3 Test of Significance .......................................................................................... 21

CHAPTER FOUR ............................................................................................................. 22
DATA ANALYSIS, RESULTS AND INTERPRETATION ...................................... 22
  4.1 Introduction ............................................................................................................ 22
  4.2 Descriptive Statistics ............................................................................................. 22
  4.3 Trend Analysis ....................................................................................................... 23
  4.4 Inferential Statistics .............................................................................................. 27
4.4.1 Correlation Analysis ................................................................. 28
4.4.2 Regression Analysis ............................................................... 29
4.4.3 Analysis of Variance ............................................................... 31
4.5 Interpretation of the Findings .................................................... 31

CHAPTER FIVE .................................................................................. 34

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS ................ 34

5.1 Introduction .............................................................................. 34
5.2 Summary .................................................................................. 34
5.3 Conclusions ............................................................................ 35
5.4 Recommendations for Policy and Practice ............................... 36
5.5 Limitations of Study ................................................................. 36
5.6 Areas for Further Studies ......................................................... 36

REFERENCE ..................................................................................... 37

APPENDIX I: QUESTIONNAIRE ....................................................... 43

Appendix II: Data ........................................................................... 45
LIST OF TABLES

Table 4.1 Descriptive Statistics................................................................. 23
Table 4.2: Correlation Results ................................................................. 28
Table 4.3: Coefficient of Determination .................................................... 29
Table 4.4: Regression Coefficients ......................................................... 30
Table 4.5: Analysis of Variance................................................................. 31
LIST OF FIGURES

Figure 4.1: ROA-Year 2010 to year 2014 ................................................................. 24

Figure 4.2: Product Innovation-Year 2010 to year 2014 ........................................... 25

Figure 4.3: Service Innovation-Year 2010 to year 2014 ........................................... 26

Figure 4.4: Organizational Innovation-Year 2010 to year 2014 ................................... 27
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACH</td>
<td>Automated Clearing House</td>
</tr>
<tr>
<td>ATM</td>
<td>Automated Teller Machine</td>
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<tr>
<td>CTS</td>
<td>Cheese Truncation System CBK</td>
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<tr>
<td>EFT</td>
<td>Electronic Funds Transfer</td>
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<td>IDT</td>
<td>Innovation Diffusion Theory</td>
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<tr>
<td>MICR</td>
<td>Magnetic Ink Character Recognition</td>
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<tr>
<td>MVNO</td>
<td>Mobile Virtual Network Operator</td>
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<tr>
<td>ROA</td>
<td>Return on assets</td>
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<td>ROE</td>
<td>Return on Equity</td>
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<td>ROI</td>
<td>Return on investment</td>
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<td>RTGS</td>
<td>Real Time Gross Settlement</td>
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<td>TAM</td>
<td>Technology Acceptance Model</td>
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ABSTRACT

The study sought to investigate the effect of financial innovations on financial performance of commercial banks in Kenya. The main problem was that there is an increase in the number of financial innovations, but whether the innovations in banking industry are the main determinants of financial performance is a hard to tell. Despite the significance of financial innovation, the effect of innovation on financial performance is still misunderstood. Therefore the study sought to investigate the effect of effect of financial innovations on financial performance of commercial banks in Kenya. The study adopted an explanatory research design. The population of the study was all the 43 commercial banks operating in Kenya in the study period. The study conducted a census on all the 43 commercial banks. The study used primary data. An ordinary linear regression model was used. The regressions were conducted using statistical package for social sciences (SPSS) version 20. The study findings indicated that there is a negative and significant relationship between product innovation and ROA. The relationship between service innovation and ROA and also organizational innovation and ROA was found to be positive and significant. Based on the findings, the study concluded that commercial banks in Kenya in the study period had unsteady trends in ROA despite the fact that more financial innovations were taking place in the sector. The study also concluded that the relationship between product innovation and financial performance of commercial banks is negative and significant. Based on the study findings, the study also concluded that the relationship between service innovation and ROA and also organizational innovation and ROA is positive and significant. The study recommended that Commercial banks should effect effective product innovation strategies that won’t increase their operational risks which in turn affects their financial performance. The study also recommended that commercial banks should focus more and invest more in both service and organization innovation as the two will lead to better financial performance.
CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Innovation fosters an organization to grow, prosper and transform in synchronization with the changes in the environment, both internal & external. Banking is no exception to this. The banking sector has witnessed radical transformation of late, based on many innovations in products, processes, services, systems, business models, technology, governance and regulation. The pervasive influence of information technology has revolutionaries in banking (Kumar, 2011). Financial markets have been liberalizing in both financial and non-financial technologies. Hwang, Yen and Cheng (2004) notes that this liberalization and globalization is due to various political and economic events which have increased competition among African banks and forcing the authorities to deregulate and restructure the domestic banking industry.

Commercial banks were previously faced with financial crises ranging from peaks in nonperforming loan ratio, loose credit, inferior capital adequacy ratio, over banking due to excessive competition, less profitability and lack of innovation. The modern commercial banks are trying to improve their financial performance by innovating in products, governance and services among other innovations. Gorton and Metrick (2010) states that the main reasons that have led to an increase in the innovations are reduction in bankruptcy costs, tax advantages, reduction in moral hazard, reduced regulatory costs, transparency and customization. According to them, a highly turbulent environment leads to a successful innovation creating a unique competitive position and competitive advantage which leads to a superior performance.

In the Kenyan financial markets, all profit seeking enterprises are constantly seeking new and improved products, services and organizational structures that can reduce their costs of production, satisfy their customers’ needs better and yield higher profits. Bank customers demand for variety, convenience and new services. They want products that can meet their precise, individual needs. Technology boom in the past decades have
helped banks to respond to this challenge. Competition has also emerged between traditional commercial banks and other financial institutions. The development and globalization of financial markets have intensified the need for modifying the current structure and condition of the financial system. Financial regulations have been modified, usually towards reducing or eliminating constraints on financial activity, such as interest rate liberalization. All this are done by commercial banks in order to be at par and not lag behind in competition (Gitau, 2011).

1.1 Financial Innovations

Innovation in the financial sector is the act of creating and then popularizing new financial instruments as well as new financial technologies, institutions, and markets (Tufano, 2002). It may be viewed as the design, development, and implementation of innovative financial instruments and processes, and the formulation of creative solutions to problems in finance. According to Sandvik (2003), financial innovations is one of the most important competitive weapons and generally seen as a firm’s core value capability. It is considered as an effective way to improve firm’s productivity due to the resource constraint issue facing a firm.

Ignazio (2007) groups financial innovations into; new products for example adjustable rate mortgages and exchange-traded index funds; new services for example on-line securities trading and Internet banking; new "production" processes for example electronic record keeping for securities and credit scoring and new organizational forms for example a new type of electronic exchange for trading securities and Internet-only banks. Most of these financial innovations are used in the financial sector in Kenya by key market players including the commercial banks.

According to Makur (2014), commercial banks in Kenya have continuously been innovating new products, services and governance in order to improve their financial performance. The financial sector has over time developed successfully with innovation products and services available in financial market. Some of these products are debit cards, credit cards, ATM cards, M-pesa and others which facilitate the use of electronic means of payment and sometimes substitute for the use of physical cash. Similarly these
products gain a wider recognition in financial market leading to reduction of holding amount of money.

That latest service innovation will lead to furthering of financial inclusion and innovative service offerings for all Kenyans by presenting their financial services offering on to a single platform which will make banking services more accessible, flexible convenient and more affordable.

1.1.2 Financial performance

Performance may be defined as the reflection of the way in which the resources of a company are used in the form which enables it to achieve its objectives. According to Heremans (2007), financial performance is the employment of financial indicators to measure the extent of objective achievement, contribution to making available financial resources and support of the bank with investment opportunities.

Alam, Raza and Akram (2011) state that firm performance is a multidimensional construct that consists of four elements namely customer-focused performance, including customer satisfaction, and product or service performance; financial and market performance, including revenue, profits, market position, cash-to-cash cycle time, and earnings per share; human resource performance, including employee satisfaction; and organizational effectiveness, including time to market, level of innovation, and production and supply chain flexibility. Most firms, however, prefer to adopt financial indicators to measure their performance. Return on assets (ROA), average annual occupancy rate, net profit after tax, Return on Equity and return on investment (ROI) are the commonly used financial or accounting indicators by firms (Tavitiyaman, Zhang and Qu, 2012). Some other common measures are profitability, productivity, growth, stakeholder satisfaction, market share and competitive position (Bagorogoza and Waal, 2010).

Ahmed, Raza, Amjad and Akram (2011) state that financial performance measures how well a firm is generating value for the owners. The financial performance of banks and
other financial institutions has been measured using a combination of financial ratios analysis, benchmarking, measuring performance against budget

1.1.3 Effect of Financial innovations on Financial Performance

Batiz-Lazo and Woldesenbet (2006) states that financial innovation is used by commercial banks to be able to compete in financial markets and as a result it can improve their performance and maintain their effectiveness in market. Various Studies on the effect of innovations on financial performance have been reporting a positive relationship between innovation and measures of firm performance. In a new generation of models studying the impact of innovative activities on firm performance, the focus has shifted to the complex innovation process and channels through which the innovation inputs are transformed into better performance (Loof, et al., 2006).

The claim that innovations have a positive influence on performance is echoed by Grundiche (2004) who argued that for a firm to compete effectively in the dynamic and competitive business environment and achieve set goals in terms of profitability, high sales volume, and large market share, it must continuously develop products and product lines to satisfy the constantly changing desires and needs of customers.

The Kenyan banking sector has demonstrated a solid growth since 2003 when most of the financial innovations were adopted. The industry offered significant profit opportunities for the major participants; profit after tax for the overall banking sector grew by 38.61 % or 5.08 Billion from 13.15 Billion to 18.22 Billion in December 2005.(The Kenya banking sector report,2007). Innovations generally seems to have a positive effect in raising financial performance of the innovators. But since innovations take place every now and then, it is interesting to understand its effect on financial performance of commercial banks in Kenya at the present time.

1.1.4 Commercial Banks in Kenya

There are currently 44 commercial banks in the country and one bank is under receivership. Banks in Kenya are classified into three strata; large peer (6), Medium peer group (15) and small peer group (23). The main regulators and governors of the banking
industry in Kenya is the companies Act, the Central Bank of Kenya Act Cap 491, the banking Act Cap 488 and the micro finance Act 2006. The Acts are used along with prudential guidelines that are issued by the Central Bank of Kenya. Commercial banks in Kenya accept deposits from individuals and turn them into profit by using the deposits to offer loans to businesses with a high interest rate. In Kenya, it is the responsibility of Central Bank of Kenya (CBK) to formulate and implement monetary and fiscal policies, apart from policy formulation; CBK has become the lender of last resort in Kenya and is the banker to all other banks.

The Kenyan banking sector has seen a range of financial innovations but not limited to: the ATMs and debit cards introduced in the late 1990s; the electronic money introduced in early 2007; Value capping in 2009: the agent banking model introduced in mid-2010; Cheese Truncation System (CTS) in 2012; T+1 (cheese clearing in one day) in 2013 (CBK report, 2013). Other innovations in banking and financial sector are RTGS, EFT, ACH, MICR, Retail Banking, free advisory services, implementation of standing instructions of customers, payments of utility bills, fund transfers, internet banking, telephone banking, mobile banking, selling insurance products, issue of free cheese books, traveler’s cheese and many more value added services (CBK report, 2013). The most recent banking innovation in Kenya is by Equity bank which is the first in Africa to offer a full banking suite through a Mobile Virtual Network Operator (MVNO). The bank will utilize Airtel’s excess capacity to deliver MVNO services to its customers thus having less cost of delivering the service.

1.2 Research Problem

The developments in the financial sector and especially in the Kenyan commercial banks has not only led to the increase in the number of financial institutions, but also the development in level of sophistication with new payment systems and asset alternatives to holding money. It is very true that radical developments have taken place in banking industry. But whether the innovations in banking industry are the main determinants of financial performance is a million dollar question. Despite the significance of financial innovation, the effect of innovation on financial performance is still misunderstood for
two main reasons, first, there is inadequate understanding about the drivers of innovation and secondly innovations impact on banks financial performance remains lowly untested (Mabrouk and Mamoghli, 2010). Despite its significance, financial innovation’s effect on financial performance of commercial banks is viewed as a double edged sword. Otoo (2013) notes that financial innovations have come with disadvantages that may affect financial performance of the commercial banks in Kenya. The nature of the global market and competitions in the banking sector exposes the commercial banks in Kenya to operational challenges like cybercrime and other internet related frauds including identity thefts. The impact of such crimes is detailed as opportunity costs and losses by the commercial banks and individuals. Expenditures to curb these risks increase operational costs which affects financial performance. On the other hand, Mwania and Muganda (2011) reiterates that the benefits of financial innovations far outweighs the disadvantages and hence financial innovation has significant contribution to financial performance. Kenyan commercial banks have seen a triple increase in cyber-crimes and credit related crimes with increase in financial innovations by the year 2010 as stated by Otoo (2013). The effect of financial innovations on financial performance of commercial banks in Kenya is hence a paradox.

Empirical scrutiny of previous studies’ outcome on effect of financial innovation on performance has been empirically inconclusive. Previous studies have produced mixed results regarding the effect of financial innovations on bank’s financial performance. Studies by Pooja and Singh (2009) and Francesca and Claeys (2010) concluded that financial innovations had least impact on financial performance. Studies by Batiz-Lazo and Woldesenbet (2006) and Mwania and Muganda (2011) concluded that financial innovation had significant contribution to financial performance. It is at the center of such mixed conclusions that motivated and necessitated the need to carry out a study from a Kenyan context to establish the effect of financial innovations on financial performance of commercial banks. The study generally sought to answer the question, what is the effect of banking innovation on the performance of commercial banks in Kenya?
1.3 Research Objectives

The main research objective was to investigate the effect of financial innovations on the financial performance of commercial banks in Kenya.

The specific objectives were

i. To establish the effect of product innovations on the financial performance of commercial banks in Kenya.

ii. To determine the effect of service innovations on the financial performance of commercial banks in Kenya.

iii. To investigate the effect of organizational innovations on the financial performance of commercial banks in Kenya.

1.4 Value of the Study

Bank managers would understand the effect of financial innovations on financial performance of commercial banks and strive to encourage or discourage banking innovation based on such findings. The findings of this study are expected to be of importance to the Kenyan consumers who would benefit from increased financial innovations should the study positively apprise the same. Such innovations such M-Shwari would end up contributing positively to the economy and reduce the number of unbanked citizens in the country.

Academics are also expected to benefit from the findings of this study as it would add to the body of existing knowledge in finance. The study findings are expected to be a point of reference for the government policy makers in formulating solid, broad and balanced policies that lay foundation for banking innovation. The policies will enhance global competitiveness of the country, resilient economy and attainment of essential national goals.
2.1 Introduction

The chapter explores the literature that focuses on the area of the effect of financial innovations on the financial performance of commercial banks in Kenya. The chapter commences by reviewing the theories that inform the discussion on innovation. It then dwells on the empirical studies that discuss the link between bank innovations and financial performance of commercial banks.

2.2 Theoretical Review

The study was hinged on various innovation theories; these are the Schumpeter Theory of Innovation, Innovation Diffusion Theory and Technology Acceptance Model.

2.2.1 Schumpeter Theory of Innovation

Schumpeter (1928) argued that entrepreneurs can create the opportunity for new profits with their innovations. In turn, groups of imitators attracted by super-profits would start a wave of investment that would erode the profit margin for the innovation. Schumpeter (1934) emphasized the role of entrepreneurship and the seeking out of opportunities for novel value generating activities which would expand and transform the circular flow of income, but it did so with reference to a distinction between invention or discovery on the one hand and innovation, commercialization and entrepreneurship on the other. This separation of invention and innovation marked out the typical nineteenth century institutional model of innovation, in which independent inventors typically fed discoveries as potential inputs to entrepreneurial firms. The author further saw innovations as perpetual gales of creative destruction that were essential forces driving growth rates in a capitalist system.

The theory distinguished between the entrepreneurs whose innovations create the conditions for profitable new enterprises and the bankers who create credit to finance the construction of the new ventures (Schumpeter, 1939). Schumpeter’s brief discussions of
historical episodes of innovations in the field of banking might appear to suggest a positive role for financial innovations in financing the entrepreneurial ventures that produce the primary wave growth spurts. The spread of joint stock banking was cited as one of the most important innovations that occurred in the early 1800s (Schumpeter, 1939). For all his insight on the role of innovation, Schumpeter still did not really explain the source of innovation. He was able to point to its importance and its role but did not address its source. The importance of innovation was highlighted by researchers like Abramovitz (1956) and Solow (1957) who were able to demonstrate how little neoclassical economics was able to explain. Based on data on the United States economy from 1909-49, Solow showed that only 12.5 percent of the increase of per capita output could be traced to increased use of capital. This left a surprisingly large 87.5 percent residual that Solow attributed to technical change. Schumpeter’s assertions have been supported by Porter (1992) that innovation is vital for a country’s long-run economic growth and competitive advantage. Innovation and upgrading come from sustained investment in physical as well as intangible assets.

2.2.2 Innovation Diffusion Theory

Innovation Diffusion Theory (IDT) by Rogers (2003) has been employed in studying technology adoption. According to the theory, four elements of diffusion including innovation, time, communication channels, and social systems affect adoption of innovation. Rogers, (2003) states that an individual’s technology adoption behavior is determined by his or her perceptions regarding the relative advantage, compatibility, complexity, trialability, and observability of the innovation, as well as social norms. Rogers (1983) identified five general attributes that consistently influenced the adoption of innovations which are; Relative Advantage-The degree to which an innovation is perceived as being better than its precursor(Rogers,2003),Compatibility-The extent to which the innovation is perceived as being in line with values, needs and experiences of perspective adopters (Hernandez and Mazzon, 2006),Complexity-The degree to which an innovation is perceived as difficult to understand and use (Rogers,2003),Observability-The degree to which the results of an innovation are visible to others
Trialability and the extent to which the innovation can be experienced before its actual adoption (Hernandez and Mazzon, 2006)

2.2.3 Technology Acceptance Model

Davis (1989) presented the TAM to explain the determinants of user acceptance of a wide range of end-user computing technologies. In TAM, Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) were identified as the main theoretical constructs that affect the intention to use a system. Some Scholars already confirmed that PU has a positive relationship with both adoption intention (Davis, 1989) and continuance intention (Venkatesh, 2000). In post adoption studies, PU has been found to influence satisfaction (Anol, 2001) and attitude toward the technology (Anol and Hikmet, 2008). According to Davis (1989), Perceived ease of use influences both perceived use and adoption intention. Other studies by Thong, Hong and Tam, (2006) to investigate post-adoption studies, found out that Perceived ease of use influences satisfaction. PEOU was found to influence continuance intention (Venkatesh and Davis, 2000), and actual continuance usage (Agarwal, 2000; Lippert, 2007). According to Dishaw and Strong (1999), the theory has been criticized for its several limitations including the original model’s intended generality and parsimony. Another limitation is failure to consider non-organizational setting and satisfaction. (Venkatesh and Davis, 2000; Thong, Hong and Tam, 2006).

2.3 Determinants of financial performance of commercial banks

The financial performance of commercial banks is affected by not only the three financial innovations (Product, Service and Organizational innovations) investigated in this study but also other factors which can be grouped into internal and external factors. The internal and external factors which also affect financial performance of commercial banks are discussed below.

2.3.1 Internal Factors

There are many factors that play a role in shaping the financial status of a bank. Linyiru (2006) states that the determinants of financial performance of commercial banks are
divided into internal and external factors. Internal determinants are the financial statement variables and nonfinancial statement variables. Financial statement variables relate to the decisions which directly involve items in the balance sheet and income statement and non-financial statement variables involve factors that have no direct relation to the financial statements for example the number of branches, status of the branch (e.g. limited or full-service branch, unit branch or multiple branches), location and size of the bank. The number of branches for instance affects the total amount of deposits a bank is able to concentrate.

2.3.2 External Factors

Financial performance of commercial banks can be affected by external factors which are considered to be beyond the control of the management of a bank. External variables range from competition, regulation, concentration, market share, ownership, scarcity of capital, money supply, inflation and size. (Linyiru, 2006)

External factors like ownership affect financial performance. An example is the case of a government owned bank which suffers frequent changes in board membership and many appointments made based on political affiliation rather than expertise consideration. Such a bank will have instability and also the appointed board members can see themselves as representatives of certain political parties. They hence concentrate on delivering the interests of their appointees and not the bank. Ogumu (2006) notes that in such cases, there is increased bank losses and management in most cases resorts to hiding the losses in order to buy time and remain in control.

The Kenyan commercial banks were affected by the Structural Adjustment Programme (SAP) introduced in 1986. Other external factors like the political crisis as a result of the disputed election in 2008, led to massive withdrawal of funds that affected commercial banks (especially) those around affected regions (CBK, 2008). The CBK brief (2007) noted that the ability of the CBK to perform its regulatory role had in the past been affected by political leadership and corruption in the former regime.
2.4 Empirical Reviews

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

2.4.1 International Evidence

In the global context, Shirley and Sushanta (2006) carried out a study to investigate the impact of information technology on the banking industry in the United States. The study theoretically and empirically analyzed how information technology related financial innovations like internet banking, electronic payments, security investments and information exchanges can affect bank profits via competition in financial services that are offered by the banks. The study used a panel of 68 US banks for a period of over 20 years to estimate the impact of IT related financial innovations on profitability of banks. The study findings found out that though IT might lead to cost saving, higher IT spending can create network effects lowering bank profits. They further contend that the relationship between IT expenditures and bank’s financial performance is conditional to the extent of network effect. They say that if network effect is too low, IT expenditures are likely to; reduce payroll expenses, increase market share, and increase revenue and profit.

Francesca and Claeys (2010) examined the determinants of banking groups' strategic choices with respect to the offer of on-line services. Based on a panel of the 60 largest EU banking groups over the period 1995-2005, the study results suggest that banks with a heavy cost structure, a large market share in client deposits and high non-interest activities are more likely to introduce financial innovations specifically internet banking. Concentration in the banking market favors the adoption of internet banking; yet competitive pressure allows for the creation of small internet banks, at least initially. There is little evidence of economies of scope of information and communication technologies. 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.

Another study was conducted in India by Malhotra and Singh (2010) to examine the impact of financial innovations specifically internet banking on banks' performance. The study also sought to understand whether, among banks offering internet banking, those that have offered it for a relatively long time outperformed those that only recently began to offer it. Using data on financial performance of 82 scheduled commercial banks, during the period of 1998-2007, the univariate analysis results from multiple regression indicated that experienced internet banks are larger banks and have better operating efficiency ratios and rely less on traditional source of financing in comparison to inexperienced internet banks as well as non-internet banks. In almost all other variables, there existed no statistically significant difference in the performance of experienced and inexperienced internet banks. The multiple regression results also reveal that the profitability and experience in offering of internet banking does not have any significant association. Hence, in the Indian banking context, experience in financial innovations by offering internet banking does not have any impact on banks' performance.

Regionally, Nwokah, Ugoji, and Ofoegbu (2009) conducted a study to find out the effect of product development through innovations and organizational performance in the Nigerian brewing industry. Data was gathered from 32 officials drawn from marketing, research and development and production departments in four breweries in the south-south and south east geographical regions of Nigeria through the use of questionnaire. The data were analyzed using appropriate statistical tool (spearman rank order correlation co-efficient). The data revealed among other things that product development facets of product quality and product lines/product mix were positively and significantly correlated with the corporate performance facets of profitability, sales volume and customer loyalty. The study concluded that a positive and significant relationship exists between product quality product lines/product mix and profitability, sales volume and customer loyalty.
Mabrouk and Mamoghli (2010) carried out a study on Dynamics of Financial Innovation and Performance of Banking Firms: Context of an Emerging Banking Industry. The study analyzed the effect of the adoption of two types of financial innovations namely; product innovation (telephone banking and SMS banking etc.) and process innovation (Magnetic strip card (debit, ATM and credit card), Automatic cash dispenser; (Automatic teller machine; Electronic payment terminal etc.) on the performance of banks. The study analysis included two adoption behaviors, first mover in adoption of the financial innovation and imitator of the first movers. The study findings revealed that first mover initiative in product innovation improves profitability while process initiative has a positive effect on profitability and efficiency. Banks that imitate are less profitable and less efficient than first movers.

2.4.2 Local Evidence

In the Kenyan context, Kimingi (2010) conducted a study to investigate the effects of technological innovations on the financial performance of the commercial banks in Kenya. The study used a descriptive survey. The population of the study comprised commercial banks in Kenya. The study used both primary and secondary data. The study used both quantitative and qualitative data hence both descriptive and content analysis techniques were employed. Content analysis was used to analyze the qualitative data collected while descriptive methods were used to analyze quantitative data. The study concluded that the banks had employed various technological innovations like ATM services, mobile phone transactions and internet based banking services. The study also concluded that technological innovations had led to improved financial performance of commercial banks in Kenya through increased bank sales, profits increment and return on equity. The study recommended that for banks to be highly competitive, they need to employ modern technological innovations such as internet based banking services.

Korir (2014) sought to establish the effect of financial innovations on financial performance of commercial banks in Kenya. The study used secondary data. The target population included all the 44 commercial banks in Kenya. Regression and correlation analysis was used to analyze the relationship between the dependent and the independent
variables of the study. The study findings revealed a strong relationship between financial innovations and financial performance. The value of the cheese cleared, the value of EFTs cleared and the value of the RTGS transfer explains 92.8% of the variability in the financial performance of the commercial banks. The study concluded that financial innovations positively affected financial performance.

In another study to establish the relationship between financial innovation and profitability of commercial banks in Kenya, Githikwa (2009) sought to examine the adoption of product, process and institutional innovations in the Kenyan commercial bank in the period 2005 to 2010. The research looked at the 44 registered commercial banks by the central bank of Kenya. Both internal and external environmental factors were put into consideration as determinants of the Kenyan commercial banks profitability by including them in the analysis of the relationship between financial innovation and Kenyan commercial profitability. The findings concluded that banks conceptualize financial innovation as a means to create impact in the profit performance. In addition, the study revealed that implementation of financial innovation requires more banks to have a great deal of resources and reduce costs of operations, reduce cost per transaction and equally enable banks to satisfy the customer needs. Implementing product, process and institutional innovation makes the commercial banks to become more flexible in their operations and it leads to acquisition of qualified personnel in the bank, quality products and allows bank expansion.

Another study was conducted in the Kenyan context by Mwangi (2013) on Innovations and financial performance in the financial industry in Kenya. The findings revealed that bank innovations had statistically significant influence on income, return on assets, profitability and customer deposits of commercial banks in Kenya and tests for significance also showed that the influence was statistically significant. The findings also revealed that mobile phones had a higher moderating effect than internet services on the bank innovations when influencing financial performance of commercial banks in Kenya. Based on the findings of the study, the researcher concluded that bank innovations influence financial performance of commercial banks in Kenya positively.
A study was conducted by Waweru (2012) to establish the effect of financial innovations on risk management of commercial banks in Kenya. The study used secondary data collected from risk manual, financial products reports and audited financial reports of 18 commercial banks that made were selected to represent the 43 commercial banks in Kenya. The study used correlation analysis, regression analysis and autocorrelation techniques to analyze the data. The major findings of the study indicated that total new current accounts, total new savings accounts, credit reference bureaus and automated trading system at the stock exchange had a positive correlation with the overall risk management framework for commercial banks. On the other hand mobile banking had a negative correlation with the risk management framework. The study concluded that financial innovations have exposed commercial banks in Kenya to various risks including credit risk, liquidity risk, strategic risk, interest rate risks, country risk, compliance risk and reputational risk and all these risks should therefore inform overall risk management of the institutions through a realistic risk index factor at any one period. Thus, financial innovations have a negative effect on financial performance of commercial banks in Kenya.

2.5 Summary of Literature Review

The review of literature revealed mixed results on the relationship between financial innovations and financial performance. The study by Shirley and Sushanta (2006), Nwokah, Ugoji, and Ofoegbu (2009), Kimingi (2010) and Korir (2014) revealed a positive relationship between financial innovations and financial performance of commercial banks in Kenya. The study by Mabrouk and Mamoghli (2010) revealed that first mover initiative in product innovation improves profitability while process initiative has a positive effect on profitability and efficiency. Banks that imitate are less profitable and less efficient than first movers. Other studies found out no significant relationship between innovations and financial performance of commercial banks. For example the study by Malhotra and Singh (2010). There was also studies that revealed a negative relationship between innovations and financial performance of commercial banks. For example studies by Waweru (2012) and Francesca and Claeys (2010). It is due to this
empirical inconclusivity that the current study sought to investigate the effect of bank innovations on the financial performance of commercial banks in Kenya.
CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the type of research design, population, target population, sampling frame, sample size, sampling technique, instruments to be used, pilot test and data analysis.

3.2 Research Design

A research design provides glue that holds a project together. A design is used to structure research, to show how all the major parts of the project, which include sample or groups, measures, treatments or programs, and methods of assignment that work together to try to address the central research question. The current study adopted an explanatory research since the objective of the study is to know and understand the trait and mechanisms of the relationship and association between the independents and dependent variables. Cooper and Schindler (2006) argue that this type of research design is appropriate for this kind of study because it seeks to describe the relationship between two variables in which one variable lead to a specified effect on the other variable. Explanatory research seeks to recognize and clarify a causal association which is substantively significant and meaningful. It answers the “how” questions. The relationship that is being investigated in this study is the effects of banking innovation on financial performance of commercial banks in Kenya.

3.3 Population

The population of the study was 43 commercial banks in Kenya as at December 2014. The total population of the respondents was 43 Heads of consumer banking and product development. The target population included the heads of consumer banking and product development because they have knowledge of practices relating to product innovation in their respective banks. The study conducted a census of the 43 commercial banks instead of adopting a sampling methodology. This was justified on the basis that the number of
banks are few. The study respondents were therefore 43 heads of consumer banking or product development in the banks. The heads of consumer banking and product development were used in the study because they have firsthand and sufficient knowledge about banking innovation better than other employees.

3.4 Data Collection

Primary data was collected using a self-administered questionnaire. The questionnaire was factual questions aimed at avoiding perceptions and bias. The questionnaire was divided into 3 sections namely A, B and C. Section A of the questionnaire addressed the first Objective of the study which was the product innovation. Section B of the questionnaire addressed the second objective of the study which was the service innovation. Section C is the last section of the questionnaire and it addressed the third objective of the study which was organization/institution innovation. A questionnaire was preferred because of its convenience and ease of administration.

3.4.1 Data validity and reliability

The questionnaire was subjected to a pilot test. Specifically, 3 heads of consumer banking and product development were requested to fill the questionnaire. Data from the 6 filled questionnaires was entered into SPSS and Cronbach alpha statistics calculated. A Cronbach alpha of 0.7 was the benchmark of deciding whether or not the instrument was reliable. Validity was enhanced by requesting industry experts and the supervisor to express an opinion on the terminologies used in the questionnaire. Care was taken to exclude the 6 piloted respondents from the main study. According to Baker, Veit and Powell (2001), the size of a sample to be used for piloting testing varies depending on time, costs and practicality, but the same would tend to be 5-10 per cent of the main survey hence the current study used a sample of 7% (3 respondents) out of the total sample size of 43.
3.5 Data Analysis

Data analysis was done through descriptive and inferential statistics. The particular descriptive statistics were mean scores, frequencies and standard deviations. The particular inferential statistics were regression analysis.

The tool of analysis will were the statistical Package for Social Science (SPSS V.20). The results were presented using tables and pie charts to give a clear picture of the research findings at a glance.

3.5.1 Analytical Model

This study applied a multiple regression model to establish the relationship between the dependent variable and the independent variables. The multiple regression analysis was used because there was more than one independent variable. The model took the following format:

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon \]

Where \( Y \) – Financial Performance, as measured by Return on Assets

\( X_1 \) – Product innovations

\( X_2 \) – Service innovations

\( X_3 \) – Organizational innovations

\( \beta_0 \) – Constant

\( \beta_1, \beta_2 \text{ and } \beta_3 \) – Parameters to be estimated

3.5.2 Operationalization and measurement of variables

The financial performance was measured by the Return on Net assets (ROA)

Product innovation was measured by the number of product innovations in each year from the year 2010 to 2014.
Service innovation was measured by the approximate expenditure dedicated to service innovations in each year from the year 2010 to 2014.

Organization innovation was measured by the approximate expenditure dedicated to organization innovations in each year from the year 2010 to 2014.

3.5.3 Test of Significance

In this study, the level of significance was 5% which means that all statistical tests were done and compared against the 5% level of significance.
CHAPTER FOUR

DATA ANALYSIS, RESULTS AND INTERPRETATION

4.1 Introduction

In this chapter, the data collected during the research was analyzed and reported. This study was executed to achieve the stated objectives. Both descriptive statistics and inferential statistics were presented.

4.2 Descriptive Statistics

The descriptive statistics in Table 4.1 gives the mean, standard deviation, minimum value and maximum value of the study variables. The mean number of products innovated in the study period among the commercial banks was 13.5. The standard deviation was 2.98 which indicated a small variation in the number of products innovated among the commercial banks. The minimum number of products innovated was 6 while the maximum was 19.

The mean expenditure dedicated to service innovation was 94.79 Million Kenya shillings with a standard deviation of 15.90 which indicated a small variation in the expenditure in service innovation among the commercial banks operating in Kenya in the study period. The minimum expenditure was 71.84 Million and the maximum was 121.2 Million.

The results also indicated that commercial banks in Kenya between the year 2010 and 2014 spend an average of 25.89 Million on organizational innovation. The standard deviation in organizational expenditure was 16.10 which indicated a wide variation in
organizational innovation expenditure among the commercial banks. The highest amount spend was 79.58 Million.

ROA recorded an average of 2.0% in the study period with a standard deviation of 1.9% which indicated a wide variation in ROA among the commercial banks operating in Kenya in the study period. The minimum value of ROA recorded in the study period was -6.5% while the maximum was 5.4%.

Table 4.1 Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Innovation</td>
<td>13.53172</td>
<td>2.98254</td>
<td>6.4</td>
<td>19.2</td>
</tr>
<tr>
<td>Service innovation</td>
<td>94.79307</td>
<td>15.90213</td>
<td>71.848</td>
<td>121.2</td>
</tr>
<tr>
<td>Organizational Innovation</td>
<td>25.89837</td>
<td>16.10874</td>
<td>0</td>
<td>79.58</td>
</tr>
<tr>
<td>ROA</td>
<td>0.02028</td>
<td>0.019757</td>
<td>-0.065</td>
<td>0.054</td>
</tr>
</tbody>
</table>

Source: Research Data

4.3 Trend Analysis

This section analyzed the demographic characteristics/summary statistics for the commercial banks. The results in figure 4.1 indicated the mean ROA of commercial banks in Kenya to be 2.2 % in the year 2010. The mean value of ROA decreased to 1.9%
in the year 2012 before showing a slight increase in the year 2013 and later decreasing to 1.8% in the year 2014.

**Figure 4.1: ROA-Year 2010 to year 2014**

![Graph showing ROA from 2010 to 2014](image)

Source: Research Data

The results in figure 4.2 indicated that the mean number of products introduced by commercial banks in Kenya decreased gradually from 14.01 in 2010 to 12.95 in 2012. The year 2014 saw an increase in the mean number of products to 14.28
The results in figure 4.3 indicated that the mean expenditure on service innovation among the commercial banks operating in Kenya in the study period was 99.01 Million in the year 2010. The amount allocated to service innovation decreased gradually to 90.10 Million in the year 2012 before increasing to 97.21 Million and later decreasing to 92.10 Million.
The results in figure 4.4 indicated that the mean amount of expenditure dedicated to organizational innovation among the commercial banks operating in Kenya in the study period increased gradually from 23.93 Million in the year 2010 to 26.78 Million in the year 2013 before decreasing to 26.46 Million in the year 2014.
4.4 Inferential Statistics

This section presented the correlation and regression analysis results. The correlation analysis which showed the direction of association of the variables and their level of significance was presented first.
4.4.1 Correlation Analysis

Correlation analysis was conducted to reveal the direction of association of the variables.

The correlation analysis results are presented in Table 4.2.

Table 4.2: Correlation Results

<table>
<thead>
<tr>
<th></th>
<th>Product Innovation</th>
<th>Service innovation</th>
<th>Organizational Innovation</th>
<th>ROA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Innovation</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>0.054</td>
<td>0.188</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.733</td>
<td>0.227</td>
<td>0.202</td>
</tr>
<tr>
<td>Service innovation</td>
<td>Pearson Correlation</td>
<td>0.054</td>
<td>1</td>
<td>0.011</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.733</td>
<td>0.946</td>
<td>0.026</td>
</tr>
<tr>
<td>Organizational Innovation</td>
<td>Pearson Correlation</td>
<td>0.188</td>
<td>0.011</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.227</td>
<td>0.946</td>
<td>0.016</td>
</tr>
<tr>
<td>ROA</td>
<td>Pearson Correlation</td>
<td>-0.199</td>
<td>.340*</td>
<td>.367*</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.202</td>
<td>0.026</td>
<td>0.016</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed).

Source: Research Data
Results in Table 4.2 reveal that the correlation between product innovation and ROA is negative but insignificant. This implies that an increase in product innovation is associated with a decrease in ROA.

The findings also reveal that the correlation between service innovation and ROA is positive and significant. This implies that an increase in service innovation is associated with an increase in ROA.

Organizational innovation was also found to be positively and significantly associated with ROA implying that an increase in organizational innovation is associated with an increase in ROA.

4.4.2 Regression Analysis

The relationship between the predictor variables (product innovation, service innovation and organizational innovation) and the dependent variable was investigated using a regression analysis.

The regression analysis results presented in Table 4.3 indicates that the coefficient of determination (R squared) was 0.332 which implies that 33.2% of the changes in ROA is explained by the independent variables (product innovation, service innovation and organizational innovation) while 66.8% of the variations in ROA are explained by other factors not included in the model.

### Table 4.3: Coefficient of Determination

<table>
<thead>
<tr>
<th>Model Summary</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.576a</td>
<td>0.332</td>
<td>0.281</td>
<td>0.016755</td>
</tr>
</tbody>
</table>

Source: Research Data
The regression coefficients and their associated t statistics and p values are presented in table 4.5. The results indicate that there is a negative and significant relationship between product innovation and ROA. This finding was supported by a regression coefficient of -0.002 and a p value of 0.03. The reported p value was less than the critical p value of 0.05. A regression coefficient of -0.002 implies that a one unit increase in product innovation leads to a 0.002 units decrease in ROA.

The results also indicate that there is a positive and significant relationship between service innovation and ROA. This finding was supported by a regression coefficient of -0.001 and a p value of 0.011. The reported p value was less than the critical p value of 0.05. A regression coefficient of 0.001 implies that a one unit increase in service innovation leads to a 0.001 units increase in ROA.

Organizational innovation was also found to be positively and significantly related to ROA as supported by a beta coefficient of 0.001 and a P-value of 0.003 implying that a one unit increase in organizational innovation leads to a 0.001 increase in ROA.

**Table 4.4: Regression Coefficients**

<table>
<thead>
<tr>
<th>Coefficients</th>
<th>B</th>
<th>Std. Error</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>-0.008</td>
<td>0.019</td>
<td>-0.413</td>
<td>0.682</td>
</tr>
<tr>
<td>Product Innovation</td>
<td>-0.002</td>
<td>0.001</td>
<td>-2.22</td>
<td>0.032</td>
</tr>
<tr>
<td>Service Innovation</td>
<td>0.001</td>
<td>0.000</td>
<td>2.685</td>
<td>0.011</td>
</tr>
<tr>
<td>Organizational Innovation</td>
<td>0.001</td>
<td>0.000</td>
<td>3.143</td>
<td>0.003</td>
</tr>
</tbody>
</table>

a Dependent Variable: ROA

Source: Research Data
ROA = -0.008 – 0.002Product Innovation +0.001 Service Innovation + 0.001 Organizational Innovation

4.4.3 Analysis of Variance

Results in Table 4.5 indicate that the overall model was significant. The reported F statistic of 6.466 was larger than the F critical (F tabulated). The reported p value was lower than the critical p value of 0.05. The findings imply that the independent variables are good joint predictors of ROA.

Table 4.5: Analysis of Variance

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>0.005</td>
<td>3</td>
<td>0.002</td>
<td>6.466</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>0.011</td>
<td>39</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>0.016</td>
<td>42</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a Dependent Variable: ROA

Source: Research Data

4.5 Interpretation of the Findings

The trend analysis indicated a decrease in mean ROA of commercial banks in Kenya from 2.2% in the year 2010 to 1.9% in the year 2012 before showing a slight increase in the year 2013 and later decreasing to 1.8% in the year 2014. The mean number of products introduced by commercial banks in Kenya on the other hand decreased gradually from 14.01 in 2010 to 12.95 in 2012 before increasing to 14.28 in the year 2014. The mean expenditure on service innovation among the commercial banks operating in Kenya in the study period was 99.01 Million in the year 2010. The amount
allocated to service innovation decreased gradually to 90.10 Million in the year 2012 before increasing to 97.21 Million and later decreasing to 92.10 Million. The also indicated that the mean amount of expenditure dedicated to organizational innovation among the commercial banks operating in Kenya in the study period increased gradually from 23.93 Million in the year 2010 to 26.78 Million in the year 2013 before decreasing to 26.46 Million in the year 2014.

Further results indicated a negative and insignificant association between product innovation and ROA but a positive correlation between both service innovation and ROA and also organizational innovation and ROA. The regression results on the other hand indicated that there is a negative and significant relationship between product innovation and ROA. The relationship between service innovation and ROA and also organizational innovation and ROA was found to be positive and significant.

The findings of the current study confirms the findings of a study by Waweru (2012) which concluded that financial innovations have exposed commercial banks in Kenya to various risks including credit risk, liquidity risk, strategic risk, interest rate risks, country risk, compliance risk and reputational risk and all these risks should therefore inform overall risk management of the institutions through a realistic risk index factor at any one period. Thus, financial innovations have a negative effect on financial performance of commercial banks in Kenya.

The findings of the current study also confirms the findings of a study by Shirley and Sushanta (2006) which found out that though IT might lead to cost saving, higher IT spending can create network effects lowering bank profits. They further contend that the
relationship between IT expenditures and bank’s financial performance is conditional to the extent of network effect. The study finding of a negative relationship between product innovation and ROA confirms this study. The findings also confirms 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.

However, the findings of the study do not concur with the findings of a study by Nwokah, Ugoji, and Ofoegbu (2009) which found out that a positive and significant relationship exists between product quality product lines/product mix and profitability, sales volume and customer loyalty. The findings of the study also confirm the findings of a study by Korir (2014) which found out that there is a strong relationship between financial innovations and financial performance. The findings also confirms the findings of a study by Githikwa (2009) which concluded that implementing product, process and institutional innovation makes the commercial banks to become more flexible in their operations and it leads to acquisition of qualified personnel in the bank, quality products and allows bank expansion thus having better financial performance.
CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter deals with the summary of the findings, the conclusion and recommendations. This was done and presented in line with the objectives of the study. Areas of further research were suggested and limitations of the study were taken into account. The purpose of the study was to investigate the effect of financial innovations on the financial performance of commercial banks in Kenya.

5.2 Summary

The study sought to investigate the effect of financial innovations on financial performance of commercial banks in Kenya. The main problem was that there is an increase in the number of financial innovations, but whether the innovations in banking industry are the main determinants of financial performance is a hard to tell. Despite the significance of financial innovation, the effect of innovation on financial performance is still misunderstood. Therefore the study sought to investigate the effect of effect of financial innovations on financial performance of commercial banks in Kenya.

The trend analysis indicated a decrease in mean ROA of commercial banks in Kenya from 2.2% in the year 2010 to 1.9% in the year 2012 before showing a slight increase in the year 2013 and later decreasing to 1.8% in the year 2014. The mean number of products introduced by commercial banks in Kenya on the other hand decreased gradually from 14.01 in 2010 to 12.95 in 2012 before increasing to 14.28 in the year
2014. The mean expenditure on service innovation among the commercial banks operating in Kenya in the study period was 99.01 Million in the year 2010. The amount allocated to service innovation decreased gradually to 90.10 Million in the year 2012 before increasing to 97.21 Million and later decreasing to 92.10 Million. The also indicated that the mean amount of expenditure dedicated to organizational innovation among the commercial banks operating in Kenya in the study period increased gradually from 23.93 Million in the year 2010 to 26.78 Million in the year 2013 before decreasing to 26.46 Million in the year 2014.

The correlation findings indicated a negative and insignificant association between product innovation and ROA but a positive correlation between both service innovation and ROA and also organizational innovation and ROA.

The regression results on the other hand indicated that there is a negative and significant relationship between product innovation and ROA. The relationship between service innovation and ROA and also organizational innovation and ROA was found to be positive and significant.

5.3 Conclusions

The study concluded that commercial banks in Kenya in the study period had unsteady trends in ROA despite the fact that more financial innovations were taking place in the sector.

The study also concluded that the relationship between product innovation and financial performance of commercial banks is negative and significant.
Based on the study findings, the study also concluded that the relationship between service innovation and ROA and also organizational innovation and ROA is positive and significant.

5.4 Recommendations for Policy and Practice

The study recommends that Commercial banks should effect effective product innovation strategies that won’t increase their operational risks which in turn affects their financial performance.

The study also recommends that commercial banks should focus more and invest more in both service and organization innovation as the two will lead to better financial performance.

5.5 Limitations of Study

No study, however accurate, is free of limitations. The data used was collected through the use of questionnaires and the researcher relied on the information given by the respondent and there was no proof of whether it was biased information.

The study only focused on 5 years (year 2010 to year 2014). Perhaps using a longer time period would have yielded different trends and results.

5.6 Areas for Further Studies

The study suggests that further areas of study should focus on a longer time span than what the current study used. This would clarify whether the observed relationship changes over the years. Further studies can be conducted to establish the other factors which explain changes in ROA apart from the factors used in this study since the factors in the model used in this study explains only 33.2% of changes in ROA.
REFERENCES


Hwang H, KU, C., Yen, D. C. & Cheng, C. (2004). ‘Critical factors influencing the adoption of data warehouse technology’ a study of banking industry in Taiwan; Decision Support System, 37, 1, 1-21


PART A: Product innovations

1. Is your bank involved in product innovations?

Yes  
No  

2. If your answer to the above question is yes, what is the number of new products introduced by your bank in the following years?

<table>
<thead>
<tr>
<th>Product/Number</th>
<th>2014</th>
<th>2013</th>
<th>2012</th>
<th>2011</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loan products</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobile money transfer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deposit products</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online products</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PART B: Service innovations

1. Is your bank involved in Service innovations?

Yes  
No  

2. If your answer to the above question is yes, what was the approximate expenditure dedicated to service innovation in the year following years?

<table>
<thead>
<tr>
<th>Product/Number</th>
<th>2014</th>
<th>2013</th>
<th>2012</th>
<th>2011</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer service research</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer management system and software</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PART C: Organizational innovations**

1. Is your bank involved in organization /Institutional innovations?

Yes               

No

2. If your answer to the above question is yes, what was the approximate expenditure dedicated to organisation innovation in the year 2014?

<table>
<thead>
<tr>
<th>Product/Year</th>
<th>2014</th>
<th>2013</th>
<th>2012</th>
<th>2011</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diversification expenditure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mergers and acquisition expenditure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restructuring expenditure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Appendix II: Data

<table>
<thead>
<tr>
<th>Bank</th>
<th>Product innovation (Mean number of Products Innovated)</th>
<th>Service Innovations (Mean expenditure on service innovations)</th>
<th>Organization innovations (Mean expenditure on organizational innovations)</th>
<th>ROA</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFC Stanbic Bank</td>
<td>10.27</td>
<td>74.43</td>
<td>31.47</td>
<td>0.021</td>
</tr>
<tr>
<td>Fina Bank Limited</td>
<td>9.20</td>
<td>86.78</td>
<td>32.32</td>
<td>0.015</td>
</tr>
<tr>
<td>African Banking Corporation</td>
<td>13.40</td>
<td>73.31</td>
<td>28.09</td>
<td>0.023</td>
</tr>
<tr>
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Source: Research Data