

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

ABDINOOR HUSSEIN

**A PROJECT IN THE PARTIAL FULFILMENT OF THE REQUIREMENT FOR
THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION SCHOOL OF
BUSINESS, UNIVERSITY OF NAIROBI.**

2016

DECLARATION

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

Signed: **Date:**

Abdinoor Hussein
D61/79421/2015

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

Signed: **Date:**

Dr.CyrusIraya
Lecturer,
Department of Finance and Accounting, School of Business University of Nairobi

DEDICATION

I wish to dedicate this project essentially to almighty Allah (SWA) the beneficent, most merciful, to whom honour and grace belong.

I also devote this project to my family for essential and psychological support accorded to me that greatly facilitated to the successful completion of my project. Nevertheless I am particularly grateful to my brother Hassan whose encouragement enabled me to finalize the MBA degree course without any hiccups and who taught me that the best kind of accomplishment is that which is learned for its own sake.

ACKNOWLEDGEMENT

Many thanks go to Almighty Allah (SWA) for granting me an opportunity to pursue MBA program. His plenty apprehension and blessings have enabled me to finalized postgraduate degree.

My heartfelt gratitude and appreciation go to my supervisor Dr Cyrus Iraya who provided detailed guidance and encouragement throughout the project preparation for and conducting research.

Many appreciations and thanks go to Central Bank of Kenya for providing adequate and enough information which were relevant to my project research objectives.

TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
LIST OF TABLES	vii
LIST OF FIGURES	viii
ABBREVIATIONS	ix
ABSTRACT	x
CHAPTER ONE:INTRODUCTION	Error! Bookmark not defined.
1.1Background of the study	Error! Bookmark not defined.
1.1.1 Innovation	Error! Bookmark not defined.
1.1.2 Financial Performance	Error! Bookmark not defined.
1.1.3 Relationship between Innovation and Financial Performance	Error! Bookmark not defined.
defined.	
1.1.4 Commercial Banks in Kenya	Error! Bookmark not defined.
1.2 Research Problems	Error! Bookmark not defined.
1.3 Research Objective.....	Error! Bookmark not defined.
1.4 Value of the Study.....	Error! Bookmark not defined.
CHAPTER TWO:LITERATURE REVIEW	Error! Bookmark not defined.
2.1 Introduction	Error! Bookmark not defined.
2.2 Theoretical Review	Error! Bookmark not defined.
2.2.1 Diffusion of Innovation Theory.....	Error! Bookmark not defined.
2.2.2 Social Cognitive Theory.....	Error! Bookmark not defined.
2.2.3 Blue Ocean Theory.....	Error! Bookmark not defined.
2.3 Determinant of Bank Performance.....	Error! Bookmark not defined.
2.3.1Capitalization.....	Error! Bookmark not defined.
2.3.2 Liquidity	Error! Bookmark not defined.
2.3.3 Credit Quality	Error! Bookmark not defined.
2.3.4Efficiency.....	Error! Bookmark not defined.
2.3.5 Diversification	Error! Bookmark not defined.
2.4 Empirical Studies	Error! Bookmark not defined.
2.5 Conceptual Framework Model.....	Error! Bookmark not defined.
2.6 Summary of the Literature Review	Error! Bookmark not defined.
CHAPTER THREE:REASERCH METHODOLGY	Error! Bookmark not defined.

3.1 Introduction	Error! Bookmark not defined.
3.2 Research Design.....	Error! Bookmark not defined.
3.3 Population.....	Error! Bookmark not defined.
3.4 Data collection.....	Error! Bookmark not defined.
3.5 Data Analysis	Error! Bookmark not defined.
3.5.1 Analytical Model	Error! Bookmark not defined.
3.5.2 Test of Significance	Error! Bookmark not defined.
CHAPTER FOUR.:DATA ANALYSIS RESULTS AND DISCUSSION	Error!
Bookmark not defined.	
4.1 Introduction	Error! Bookmark not defined.
4.2 Descriptive Statistics	Error! Bookmark not defined.
4.3 Regression Analysis	Error! Bookmark not defined.
4.3.1 Model Summary	Error! Bookmark not defined.
4.3.2 Regression Coefficients	Error! Bookmark not defined.
4.4 Summary and Interpretation of the Findings.....	Error! Bookmark not defined.
CHAPTER FIVE:SUMMARY, CONCLUSION AND RECOMMENDATIONS .	Error!
Bookmark not defined.	
5.1 Introduction	Error! Bookmark not defined.
5.2 Summary of the Findings and Discussions	Error! Bookmark not defined.
5.3 Conclusion.....	Error! Bookmark not defined.
5.4 Limitations of the Study.....	Error! Bookmark not defined.
5.5 Recommendations	Error! Bookmark not defined.
5.6 Suggestion for Further Research	Error! Bookmark not defined.
REFFERENCES	37
APPENDICES	39
Appendix I:Return on Assets (Financial performance)	39
Appendix II: Total transactions from ATM Cards	40
Appendix III: Total transactions from mobile payments.....	41
Appendix IV: Total transaction from RTGS	42
Appendix V: List of commercial banks in Kenya as at 31/12/2015	43

LIST OF TABLES

Table 4.1: Return on Assets (Financial performance)	Error! Bookmark not defined.
Table 4.2: Total transactions from ATM Cards	Error! Bookmark not defined.
Table 4.3: Total transactions from mobile payments.....	Error! Bookmark not defined.
Table 4.4: Total transaction from RTGS	Error! Bookmark not defined.
Table 4.5: Correlation analysis	Error! Bookmark not defined.
Table 4.6: Regression Analysis.....	Error! Bookmark not defined.
Table 4.7: ANOVA (Analysis of Variance)	Error! Bookmark not defined.
Table 4.8: Regression coefficients	Error! Bookmark not defined.

LIST OF FIGURES

Figure 2.1 Conceptual Framework Model	19
---------------------------------------------	----

ABBREVIATIONS

ATM	-	Automated Teller Machine
CBK	-	Central Bank of Kenya
DA	-	Data Analysis
EFT	-	Electronic Fund Trust
EPS	-	Earnings Per Share
ICT	-	Information Communication Technology
KCB	-	Kenya Commercial Bank
ROA	-	Return on Asset
ROE	-	Return on Equity
RTGs	-	Real Time Gross Settlement
SPSS	-	Statistical Package for Social Science

ABSTRACT

Banking sector over the years have undergone drastic changes from being conventional banking to more efficient in diversifications of assets and finance from different sources. This was necessitated by internalization, embracement on the new technological advancement tools, machines and new means on the storage and communication of information. Competitive environments has also played a big role in ensuring better quality of product and services are provided in line to meet the growing complex need of satisfying customer. The research carried out to create association amid financial performance in relation to innovations. The independent variable that was used includes; total transaction through ATMs cards, total transaction from mobile banking and total values from RTGs. The dependent was measured by Return on Asset (ROA).

The study was carried out on 4 years period from 2012 to 2015, by obtaining secondary data from Central Bank of Kenya. Descriptive data design was used in the identifications of the characteristics of the variables available from the sample. Statistical package for social sciences (SPSS) was used data analysis and interpretation, Correlation and Regression analysis were carried further in analysis of variables. R^2 was 0.78 showing that 78% of disparities in dependent variable are clarified by the independent variables. The research also established that the p value of +0.12 showing a significant relationship where the predictor variables have a positive influence on the level of the profit. It was established that there exists positive and strong association amid innovation and financial performance.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Innovation can be defined as the process of transforming ideas into services and goods that in turn bring value creation for which clients or customers can pay (business dictionary.com). It involves the deliberate process of applying information, and imagination as well as the initiative of delivering unique values from existing resources. Innovation usually incorporates processes whereby ideas, after being conceived, are converted to useful products. According to Tufano (2003). Innovation involves the process of coming up with new products and processes by an organization in order to improve its performance. The driving force behind the quick transformation of banking industries is influential changes in the economic environment.

The challenges posed by new market entrants, developments in technology, high standard requirements necessitate banks to correspondingly increase their efficiency levels to match up with the environmental changes. Simultaneously, integrating ventures into the global arena offers more opportunities for banks to engage in the global value chain as well as the supply networks. Innovation has immensely impacted commercial banks in Kenya, most of the banks resorted to the use of innovation to enhance their financial performance. The innovations that are used by the commercial banks are; financial innovations, Technological innovations and economic innovations. Banking originated from England in the year 1694 where the bank of England was established as a business where the bank would lend money to its clients and profit from the interest charged on the sum (Kariuki, 2005). The banks have evolved over the years and have adopted different kind of technologies. The stiff competition

in the financial markets forced the commercial banks to use innovations as a competitive strategy to their presence in the market.

1.1.1 Innovation

Innovation refers to new ideas and practice that a unit can adopt and implement as a way of introducing something that has never been done before (Rogers, 1983). Universally, innovation is a good way of improving a company's profitability and this is mainly because the constraints of resources on any firm (Capon, 1990). Lehtimäki (1991) affirms that to achieve economic progress and attain a competitive advantage. Any firm must adopt innovation. In the modern days, innovativeness is a big factor in the process of strategy planning. In fact, wealth creation is a direct product of innovativeness. And even though efficiency accounts for a large part of a business, it cannot sustain business growth in the long run.

To enable innovation be termed as valuable, fresh products and services need to show their strength via the processes of rigorous commercialization in the market. The influence of invention on the performance of a firm is meant to be the improvement of its market's position, further conveying competitive advantage and exceptional performance (Coad & Rao, 2008). Innovation is not restricted to new goods and services but also considerably related to the organization and marketing within the firm.

In the banking system, innovation has been put to practice by the development of channels like the internet banking systems, new and improved disbursement systems and ATMs. All these new channels provide easy and efficient channels for customers to check their accounts. In addition, there are added substantial costs that profit the banking systems. Product innovations such as ATM and smart cards have increased in the modern banking industry. The managers in the IT department of the bank should consider developing technological

products can be expanded easily and is consumer friendly. Innovation in the product sector requires the banks to assimilate customer needs, changes in the population aspects and provision of novel channels to penetrate the markets. To maximize the effectiveness of the products banks usually have to adjust their portfolios through developing new products or improving existing products.

With the emergence of sophisticated telecommunication institutions innovations such as the banking got opportunity to merger easily with establishments of corporate measurements, which adopt a structure that pivots on balanced scorecards. Balanced scorecards cover innovation and its aspects in various ways like the motivation and contribution of the employees, customer benefits, finance business measures, and the innovation process inefficiency.

1.1.2 Financial Performance

Companies can exploit their assets from the original approach they carry out their business and create profit. This, can however, only be achieved by exercising subjective measures that incline to financial performance. (Fullerton & Wembe, 2009). As asserted by Heremans (2007), financial performance is the approbation of economic signals in determining the extent of progress of a firm's objectives, its contributions to the existing financial resource and in supporting the bank with opportunities of investment.

Financial performance can generally be defined as the measure of an organization's financial position over a certain timeframe. It can be applied when comparing other identical organization's aggression in the industry.

Financial performance can be measured by procedures that determine market value. Basically, financial performance weighs how good a firm is at generating value for its owners. The profit after tax has been used by many banks to measure the financial performance of the bank and some of the managers use such things as; shareholders equity, gearing ratio, acidity test, ratio test and other measures.

In banking, there are many stakeholders, who include bond holders, trade creditors, employees, management, as well as investors. Each of these groups has their own interest as far as banking is concerned and so they track the bank's financial performance frequently.

1.1.3 Relationship between Innovation and Financial Performance

Innovation has played a major role in the evolution of banks from traditional banks to modern banks that are used by a large share of the population, for example the use mobile banking has created faster, efficient, easy and more reliable banking method. Most of the customers don't need to make long queues in the banks to get access to their money. This has increased the number of customers that use the banks to save their money. Innovation has reduced the theft in the banking system which enhanced the increase in the number of customers that have resorted to using the banks since most people feel safe when their money is in the banks thus leading to effective financial performance Noyer (2007).

Financial innovation's importance in financial performance is not obvious since they are reported cases of reverse causality between innovation and performance. However, it's without a doubt that financial innovation played a major role in financial performance; the use e-payment has become a competitive strategy for most of the Banks since most of the customers prefer those banks that have a visa card that can be used both locally and internationally. The use M-pesa system which is a mode of payment used by the banks to

enhance service delivery has also led to efficient financial performance. Product innovation is another type of innovation that enhanced financial performance in the commercial banks. The banks that invent new product regularly have enhanced service delivery towards their customers. The invention of Equitel by equity has enhanced their service delivery and attracted more customers. The sales departments of the banks position their product in to the minds of their customers so that their product looks more different than the ones that are offered by the other commercial banks.

1.1.4 Commercial Banks in Kenya

According to the Banking Act of Kenya, banking is defined as the processes of accepting the public's money in form of deposit repayable on demand, at notice, or at end of a period. By Dec 31 2015, Kenyan banking sector was made up the Central bank as the regulator, 42 commercial banks, 8 representative offices of overseas banks, and one mortgage finance company. of the 43 commercial banks, 40 were held privately while the rest were government-owned.

Out of the 40 banks that are privately owned, 26 were owned by a majority of stakeholders who are of Kenyan origin (local owners) and the other 14 were owned by foreigners, most of whom have minority shareholding. The 26 locally owned included 1 mortgage financier and 25 commercial banks while the other 14 were all commercial banks; four foreign branches and 10 local branches from banks which are foreign. (CBK, 2015) The local public commercial banks remained 3 in 2015 as in 2014. The 3 banks accounted for 4.5 per cent of total net assets in December 2015 as compared to 5.0 per cent in December 2014. The decrease is attributable to slower growth in assets given capital constraints experienced by the public banks.

There were 24 local privately-owned commercial banks in December 2015, a great improvement from 27 local private banks in December 2014; the decline in the number of local private commercial bank is as a result of liquidation of Dubai Bank and placement of Imperial Bank in Receivership. The local private commercial banks made up 64.6% of total net assets compared to a figure of 64.0% in December 2014. The increase is attributable to the rising demand of loans, which are a vital part of a bank's assets. Commercial banks' financial performance can be influenced by both internally and external factors (Al-Tamimi, 2010). These can, further, get categorized into internal and macroeconomic variable. Internal factors are made up of a bank's internal characteristics that can potentially affect its performance. The factors are shaped by the resolutions reached by the leadership in general. On the contrary, external factors can also affect a bank's productivity and are countrywide as well as sector-wide, often beyond the bank's control.

In the Kenyan banking sector there are many types of innovations including the increased preference for paperless money. By using Magnetic Ink Character Recognition (MICR), banks are able to clear their cheques more efficiently and in a speedy manner. Also, by the Kenyan central bank's launch of the Real Time Gross Settlement (RTGS) system, in 2005, Kenya's payment systems was modernized in accordance with the current global trends. What is more, E-credit services like M-pesa and M-shwari banking has brought innovations in the banking sector.

1.2 Research Problems

It is significantly correct to assume that latest studies in operations learning and improvement suggest a co-existence between innovation and improvement of performance in an organization. This can be witnessed in the Kenyan banking systems where over the past ten

years there have been revolutionary improvements on financial innovations. These improvements have spurred both structural changes as well as attracted many foreign investors in the banking sector. The only organizations that have survived are those that adopted new methods of business in the changing environment. The most significant innovations that increased the performance of the banking industry were brought by technological advancements like the internet and mobile phones, Lily and juma (2014).

Since Kenya first started online banking services, customers are now able to transact faster, efficiently, and conveniently. As of now, many institutions are pumping large sums of money in ICT. Nevertheless, while some financial institutions are adopting ICT, these advancements in technology have also dragged with them several problems. For instance, these innovations take a lot of bank's resources and bring about fraud. Therefore, there is an additional management of risks and costs that come along with these investments.

The product innovation has its fair share of problems and for the bank to present their products to the customers they need to have a pool of skills in their marketing sector. Most of the managers in the commercial banks want to maximize the shareholders wealth they therefore have to come up with new innovations to enhance financial performance. If the financial performance improves they will increase in the market share, quality policies regarding financial performance, the more the financial performance the better the chances of innovations of new products. As at 31st December 2015 the financial performance in the commercial banks have improved since they were 7 big banks which have market share of 58.21%, 12 average banks which have market share of 32.42% and 21 small banks which have market share of 9.24% (CBK, 2015). After the regulator has put under receivership those banks that were underperforming most of the customers have realized the banks that are financially secure to deposit and save their cash. The investors have also realized the banks that they can buy shares from.

Most researchers have established that innovation mainly enhances financial performance; however innovation may not be the only cause that improves it could other factors like good management, enhanced financial policies, quality brand, and working environment. Although innovation leads to good financial performance the banks require highly skilled personnel to carry out the innovation process and most of the previous have left to study the capacity requirement for the innovations to be implemented.

The research questions that have emerged from the study are;

How does innovation improve financial performance in commercial banks in Kenya?

What is the relationship between innovation and financial performance?

What are the determinants of bank performance?

1.3 Research Objective

The goal of the study is to find out the consequence of innovation on the financial performance of commercial banks in Kenya

1.4 Value of the Study

The study has value for the stakeholders of commercial banks in Kenya. Banks may use the study to formulate more policies that regulate the commercial banks that wants to develop new innovations. The bank managers may use the study to create more products or improve the existing once; the customers may use the study to understand more on the financial performance of their bank and the services that it offers. Shareholders may invest more on innovation after they realize that the innovations that were made by the bank have enhanced financial performance.

The study may be used to create more on innovation theories as it involves all forms of innovations that were adopted by the commercial banks in Kenya by incorporating all the changes that might be brought by changes in technological advancement. The study has provided recommendations to be considered by commercial banks to improve their products and processes development. The study will justify whether innovation has influence on financial performance and whether banks should take critical consideration.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter explores and reviews the theories that discussed innovations and their relevance to the financial performance. It also involves the empirical studies on the relationship between innovation and financial performance.

2.2 Theoretical Review

This part appraises the various theories and models that have studied the effect of innovations on financial performance. Several theories were explored and they are; diffusion of innovation theories, Social cognitive theory and blue ocean theory.

2.2.1 Diffusion of Innovation Theory

Diffusion refers to the manner in which innovation is communicated among members of a social system, through specific channels over a given amount of time. Communication, on the other hand refers to the manner in which individuals create and pass down information in order to attain mutual understanding (Rogers, 1995). In his study on how innovation takes place, Rogers (1995), explained that it occurs in four phases: invention, diffusion, time and consequences. Information flows through channels in the social system. The kind of channels and influence of opinion leaders, however, determine how innovations will be adopted.

The innovation diffusion theory tries to explain factors that influence the way individuals adopt new information channels like the internet as well as the reasons they choose to adopt. In as much as opinion leaders have an influence on the behavior of an audience, gatekeepers and change agents act as intermediaries in the diffusion process and are important because Kenyan commercial banks adopt innovations in their service delivery to their customers. The

commercial banks in Kenya use the theory as a tool for market research in their innovations. The theoretical basis is employed in the explanation of the behavioral intention in terms of technology. They offer human beings a capability of influencing the environment of consumers via the acknowledgement of the fact that the learning process integrated much information and is not at all times a direct response to external stimuli. Cognitive learning models are reasoned action (TRA) theory, planned behavior (TPB) theory, and technology acceptance model (TAM) as well as the social cognitive theory. Reasoned Action Theory was initiated by Fishbein and Ajzen (1975) and is a broadly approved intention model, which extrapolates and helps in the prediction of behavior. The theory proposes that a person can affect their own attitudes as well as other people's attitudes of their intentions. Nevertheless, its main source of criticism is the fact that it does not explain instances when a person's behavior is not under their control (Chan & Lu, 2000).

Cognitive learning models are employed in this study as theoretical basis in the explanation of behavioral intentions in the field of technology.

2.2.2 Social Cognitive Theory

Also known as the Social Learning Theory, this theory is based on the foundations of human beings and psychological behavior of groups (Pincus, 2004). It is a widely approved model of behavior (Chan & Lu, 2004) because it scrutinizes the reasons behind specific behaviors. (Bandura, 1986). According to this theory, a person's behavior is evaluated according to the expected outcomes of the way they behave, the expected outcomes of their direct experiences, and is mediated via other people's observations (La Rose & Eastin, 2004).

This theory has been employed in several disciplines because of its dynamism (Kock, 2004). It has been adopted in business via the analysis of the management of organizations (Wood & Bandura, 1989), the adoption of technological adoption, and task complexity.

Social cognitive Theory asserts that an individual can transform themselves into innovative persons if they encounter opportunities and the support needed in ability development.

Therefore, the managers can encourage their employees in the bank to be more innovative and create a new product that enhances the banks competitiveness in the sector.

The organizational structure of companies that are innovative is simple. The working environment always encourages transparency and approachable feedback techniques is exercised by stakeholders. This is because they adopt team work approaches that are multi-functional at all levels of employment when handling projects and solving problems. Leadership positions are held by people who demonstrate enthusiasm, vision, a commitment to innovation process and courage in aspects of risk taking and change.

2.2.3 Blue Ocean Theory

The supporting idea of this theory is 'Value Innovation', a concept that was conceived by Kim and Mauborgne (1997). Value innovation refers to differentiation of low cost, as well as value creation for not only the buyer but the company itself and the employees. This enables the opening of unique and uncontested marketplace. Value innovation aims at changing the playing field to make competition irrelevant. The strategic change must be focused at raising and creating value in the market, while at the same time trying to reduce and eliminate features or less valued services. Michael Porter's (1985) supposition suggests that businesses that are successful are either niche-player or low-cost providers. However, the Blue Ocean strategy advises companies to find value that crosses the segmentation of conventional markets and that which offers value at lower costs. The importance of Blue ocean theory is attained when one dismisses traditional rules and replaces them with opposition as a standard overview. Blue ocean theory places the company in a favorable position to develop a unique market place, devalue competition, break tradeoffs for value-cost while at the same time directing firm activities in a manner that follows differentiation and low cost. Companies that

use Blue ocean theory choose between value and cost, therefore dismiss the use of conventional strategy.

2.3 Determinant of Bank Performance

Determinants of the performance of a banks can be categorized into internal and external factors Aburime(2005). These factors represent stochastic variables that determine the banks output. Precisely, internal factors are made up the bank's characteristics that affect the performance of the bank. They are affected by the management's decisions. On the other hand, external factors are pivoted on the whole banking sector and the country in general and can affect the profitability of banks. Nevertheless, this does not necessary imply that all banks are productive or profitable since some banks declare losses Oloo (2010 the). Past research has illustrated that some specific macroeconomic factors influence commercial banks' performance. (2009). In this line of reasoning Olweny and Shipho (2011) in Kenya aimed at factors that were sector-specific affecting commercial banks' productivity.

2.3.1 Capitalization

Capitalization is viably determined by comparing the ratio of equity to the ratio of assets (CAR capital to asset ratio). In simple terms, a high CAR ratio degrades the ROE. This is because a much higher ratio shows a lower risk therefore inducing low profitability as explained by the theory of markets to balance. On the other hand, a build-up in this ratio can suggest that some part of the debt reduces therefore inducing lower earnings from the tax exempted from the debt.

2.3.2 Liquidity

Is established measuring the ratio of loans to assets. The greater the ratio, the lower the bank has liquidity. Essentially, the loan contracts have varying period of maturing, and hence, in

the event of immediate demand of capital, the banks cannot count on these credits, because they will be indemnified afterwards.

2.3.3 Credit Quality

Credit quality is closely similar to credit risk. Quality, however, is measured by two quotients. They include ratio of establishing debt credit losses to total loans. A research done by Liu and Wilson (2010) found that a decline in credit quality leads to a corresponding reduction in ROA and ROE.

2.3.4 Efficiency

Constantly determined by the quotient of costs to total assets. The level of effectiveness has a significant impact on the performance of banks. Altunbas, Gardener, Molyneux, and Moore (2001), the standard of performance is different in various banks in Europe. The gap in variation is considerably between several banks and banking sectors.

2.3.5 Diversification

The measurement of diversification is done by accounting for the ratio of non-interest income associated with loans on the operating income. A research by Dietrich and Wanzenried (2011) found that diversification and performance were positively correlated. The other studies performed on the same subject showed otherwise suggesting that the movement towards non-interest results does not necessarily leads to san improved risk-return torque.

2.4 Empirical Studies

The relationship between innovation and financial performance has been an area of interest for the researchers this is because various investigations have been undertaken to determine their relationship.

Lilly&Juma (2014) evaluated the outcomes of strategic innovation on the performance of Kenyan financial institutions. The study was unclear on the strategy measures to be implemented. The study also concluded that the bank performance is mainly influenced by the new product and service innovation however performance could be influenced by other factors like good management and proper policies.

Gitau (2011) carried study to investigate the effect of financial innovation on economic progress of financial institutions in Kenya. The research adopted explanatory research design. The population of the study is made up of 43 banking institutions in Kenya. The research used primary data of an ordinary linear regression model. The research results revealed the presence of a negative relation between ROA and product innovation, service innovation and ROA. However organization innovation and ROA was found to be positive. The study did not use appropriate measure to arrive at the conclusion that product innovation and ROA have a negative relationship. This is because that most of the banks that have come up with a new product like M-Cop for co-operative bank, Pesa Pap for Family Bank have enhanced the ROA of the respective banks.

Evangeline (2010) studied the relation of technological developments on financial development of financial institutions in Kenya. The study employed a descriptive cross-sectional design by targeting all the commercial banks in Kenya. Secondary data inform of annual financial reports was obtained from central bank of Kenya. The result reveals that there is a direct and substantial relation between the bank performance in terms of profitability and technological innovations. The research gave prominence on technology as the primary element responsible to economic development in financial institutions in Kenya. The institution does not only use the technology but also has several departments i-e the HR

department enhances good working environment, staff training and motivation which enhances bank performances. The study didn't highlight that if the technology becomes outdated the measures that bank should take to improve their technology to be up-to-date.

Antonnet (2014) studied product innovation and its effect on economic development of financial institutions in Kenya. The goal of the research was determining the link existing amidst product development and economic development. The study used explanatory research design in which the population sampled of 106 senior managers and branch managers from nine commercial banks was taken using the census method. Data was collected using research questionnaires, face to face interviews and secondary data was obtained from 2013 audited financial statement. The result revealed negative relationship between financial performance and product innovation. The study didn't show the 9 commercial banks that were used for the survey. The researcher may have carried research on the underperforming banks. The study didn't disclose the products used to establish the relationship, the bank offers many products that may not influence the financial performance. The researcher didn't include the customers in the questionnaires who are mainly affected by the products being innovated.

Nwokah, Elizabeth and Ofoegbu (2009) in their study investigated on corporate performance and product development in the brewing industry of Norway. They gathered data from 32 R and D, marketing, and production department officials. The study concentrated on four breweries in the south east and the south of Nigeria by questionnaire method. Using statistical tools (the spearman rank order correlation co-efficient), the researchers analyzed the data, revealing that product mix and product quality was in a huge way correlated with corporate performance aspects of profitability, customer loyalty, as well as sale volume. Their research

also disclosed the correlation between product quality, design, sales volume, the loyalty of clients, and profitability was insignificant.

The researchers didn't study the product life cycle in which the product may not pass the early stages of the cycle due to competition that may hinder the product from market entry. The study ruled out the relationship between product design and corporate performance however, the products that are designed well could be appealing to the customers more.

The researchers didn't study the product life cycle in which the product may not pass the early stages of the cycle due to competition that may hinder the product from market entry. The study ruled out the relationship between product design and corporate performance however, the products that are designed well could be appealing to the customers more.

Yasuharu (2003) conducted a research to evaluate the perceptions of customers in the banking industry in regard to the influence of technological innovations in the banking sector of Ghana. His study aimed at customers from banks that have incorporated technological innovations. By conducting interviews and interrogating through questionnaires, the researcher fetched the client's perceptions on the influence of electronic delivery of services and Information Technology channels. The size of the sampled population rested on the adoption of at least one type of innovation in banks. 14 of the 18 banks were selected.

The study discovered that implementation of innovations like IT and communication networking has resulted in great changes in the way of banks and financial institutions operate. It is proposed that stirring framework alterations are a preserve of money services sector due to huge changes in IT; others view it as extension of progressions already in place. The research emphasizes that technology is the major factor enhances performances in banks in Ghana despite the fact it may be risk due to the revolution in the sector.

Despite the weak link they found, Lin and Chen (2007) made an effort to investigate the mode and sort of daily innovation practices of small and medium- sized enterprises (SMEs) located in Taiwan. The research establishes the relation existing between innovation and organizational development. Data was collected using a telephone survey. The population consisted of all companies which had a total of less than 200 employees and production and service firms in the northern parts of Taiwan. 877 companies out of 200 were contacted and the response was 87% satisfied. From the study, it was deduced that innovation is not strongly linked with the sales of a company. Since the survey was done on telephone, the data may be incorrect and the findings may also be wrong.

Moreover, Oke(2007)various types of innovations that are common in firms in the services sector of the United Kingdom. He, as well, examined the practices, the degree of innovation and the relationship of these facets on the company's performance. By using a two-stage process in the empirical per of the study initiated by interviews and mail surveys, he was able to collect the data. Six senior executives of major companies were interviewed along with surveys of 214 senior managers. The overall response rate was recorded at 47 percent. Then appropriate statistical methods were employed in the analysis of the data. The innovation in products was emphasized more in the financial and telecommunication sectors compared to retail and transport sectors. On the other hand, innovations in services were highlighted more in transportation and retail sectors. The research found that incremental and radical innovations were correlated with innovation performance. Radical innovations were also related to management practices.

The study doesn't explain the products innovations that are in the financial sector and the telecommunication. The study may not be accurate as the data was collected by use of mail.

Most of the researchers have put emphasis on technological innovation as the main contributor to financial performance however they neglect organization or marketing changes which are essential to the growth and efficient operation of the firm.

2.5 Conceptual Framework Model

A theoretical framework is a combination of vast ideas and principles that are drawn from different instances to form a structured representation (Kombo& Tromp, 2009). It is a research tool that intends to help a researcher come up with an understanding of the situation under examination as well as be able to communicate it. It therefore enables a researcher to develop meaning to his or her findings.

Independent Variables

Dependent Variables

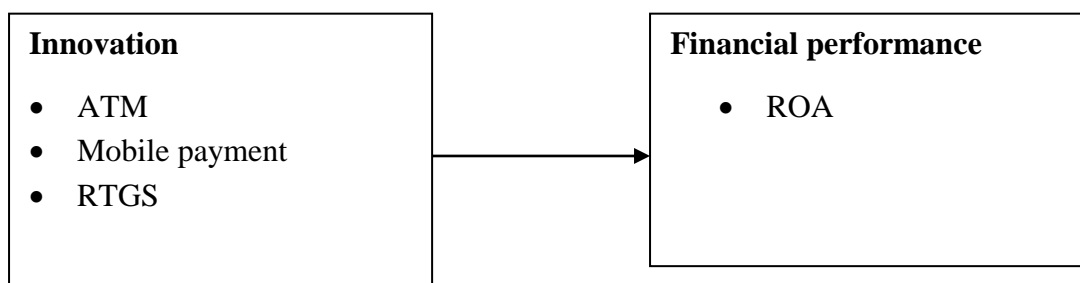


Figure 2.1 Conceptual Framework Model

2.6 Summary of the Literature Review

Aduda and Kingoo (2012) investigated the Relationship between innovation and financial progress among financial institutions in Kenya and settled that there exists direct interrelation betwixt e-banking and progress of the bank. However the study has a gap as did not explain the exact relationship between them as they are other factors involve in the e-banking system.

The study also did not entail the negative impact of e-banking on those customers that do not access the internet. Nyamwembe (2011) conducted a study on factors that obstruct the approbation of technological inventions by Kenyan financial institutions and concentrated on Kenya commercial bank (KCB). The author concluded that obstruction to development, organizational politics and the concern of disassembling current products were the major elements that resulted in non-adoption. However, the researcher did not examine the result of innovation on economic development of commercial banks.

CHAPTER THREE

REASERCH METHODOLOGY

3.1 Introduction

This chapter describes the research methodology of the research. It describes the research design, the population used in carrying out the research, the data collection methods and the research analysis.

3.2 Research Design

Burns and Grove (2003) describe a research design as a model for carrying out research whereby there is total containment of any issues that may influence the over factors that may interfere with the validness of the results. Parahoo (1997) interprets a research design as a scheme that outlines the manner, the timing and the location where data will be gathered and analyzed.

The requirement for research design arises from the hesitant position on research and the perception view that experimental knowledge is definitely conditional. The aim of Research design is to get rid of the complications that are associated with a broad research. Considering the aim of this study the data to be collected descriptive design will be used. The main goal of the study is to reveal the connection between innovation and the financial progress of the financial institutions in Kenya. The primary data will be collected from the 43 commercial banks while the secondary data will be obtained from the annual financial reports published by CBK as at 31 December 2015.

3.3 Population

Parahoo (1997) delineates population as the sum quantity of entities where data can be gathered from, such as persons, abstract things, occurrences or companies. Burns and Grove (2003) depict it as the totality of factors that satisfy the threshold for incorporation in a research. Burns and Grove (2003) delineate admissibility benchmark as a listing of factors needed for inclusion in the population of interest. The population targeted in this research will be forty three Kenyan banking institutions as at 31 December 2015 and the respondent will be the managers, the employees and the customers.

3.4 Data collection

A research instrument is a tool utilized in the collection of data .It is a method of measuring information, attitudes and expertness” Parahoo (1997). Secondary sources of data will be used to collect data; the secondary sources will be obtained from the most recent banks financial statements of various banks, by establishing the total amount of transactions through ATMs, Mobile payment and RTGS comparing it with total amount of profit generated.

3.5 Data Analysis

Data analysis (DA) is the science of examining raw data with the purpose of drawing about that information. (Business dictionary.com).The data will be analyzed using descriptive statistics such as; frequency, mean scores. Statistical package for social science (SPSS) will be used to aid in carrying out the qualitative analysis.

3.5.1 Analytical Model

Regression analysis will be used to establish the effect of the independent variables on the dependent variables. Innovation is directly linked to economic progress and has the highest

statistically significant coefficient as shown by a P value of 0.00 which is statistically significant at 5%. Therefore innovation impacts financial growth. There is a positive relation between financial growth and the innovation. Process innovation equally has a statistically significant coefficient as shown by a P value of 0.01 which is statistically significant at 5%.

$$Y = a + B_1 X_1 + B_2 X_2 + B_3 X_3 + e$$

Y = Financial Performance measure by ROA

B₁ = the coefficient used to measure the sensitivity of the dependent variable

a = the constant

X₁ = is total transaction through ATM

X₂ = is total transaction through mobile banking

X₃ = is total transaction through RTGS

e = error term

3.5.2 Test of Significance

The power of the predictor variables will be correlated at a p = 0.05. This indicates that predictor variables with a p < 0.05 will be declared to have a statistical significance on fiscal performance. T- test and F- test will be used.

CHAPTER FOUR.

DATA ANALYSIS RESULTS AND DISCUSSION

4.1 Introduction

The chapter presents the analysis part of the study. The analysis is based on the research The objective is tackled according to the analysis techniques designed in the Methodology. Data collected was analyzed and the findings are as presented in this chapter inform of discussion of the results.

4.2 Descriptive Statistics

Tables below show the definitive analysis results of the variables of the study. The data Collected on the effects of the innovation (measured by total transactions through ATMS cards, mobile payments and RTGS) and the financial Performance (measured in ROA) was analyzed to give the mean values for the entire period understudy as well as their standard deviations.

Table 4.1: Return on Assets (Financial performance)

	Minimum	Maximum	Mean	Std. Deviation
2012	1.30	11.00	4.7083	2.74076
2013	3.10	6.50	4.6083	1.21839
2014	3.40	7.00	4.9917	1.29857
2015	3.60	7.60	5.4083	1.42539

The results as set out in Table 4.1 reveal the path of return on assets values for the 4 years span between 2012 and 2015. The least figure for ROA was an average of 4.61% in year 2013 while the greatest figure was an average of 5.41% in year 2015. This characterized an

affirmative drift in the ROA average figures of 0.80% for the 4 year span. The stable growth in ROA values for the 4 year span shows that the fiscal performance of the listed financial institutions has progressively risen for the past 4 years. On the contrary, the standard deviation means small changes in the implementation of the budget between various listed financial institutions in Kenya.

Table 4.2: Total transactions from ATM Cards

	Minimum	Maximum	Mean	Std. Deviation
2012	12085.00	15022.00	13074.3333	810.09902
2013	12762.00	16513.00	14327.5000	1190.07865
2014	801.00	3888.00	3174.5000	1071.97842
2015	739.00	976.00	856.5833	65.92897

The results as set out in Table 4.2 reveal the drift of total values transacted via ATMs cards over the 4 year period between 2011 and 2015. There have been drastic rise in value generated rise from 13074 to 14327 from 2012 to 2013 and slight decline on 2014 and 2015. The positive standard deviation indicates future potential for future avenues for revenue generation.

Table 4.3: Total transactions from mobile payments

	Minimum	Maximum	Mean	Std. Deviation
2012	114.06	150.16	128.7846	10.32045
2013	134.446	182.495	158.4633	15.719
2014	172.797	225.549	197.6495	14.54962
2015	208.132	267.068	234.6749	18.2454

The observations as set out in Table 4.2.3 reveal the drift of revenue on mobile payments for the 4 year span between 2012 and 2015. The least rate was an average of 128.8 in year 2012 while the greatest rate was an average of 234.7 in year 2015. This characterized an affirmative advancement on mobile payments mean values of 82.2% for the 4 year span this indicates potential generation of more revenues in the future.

Table 4.4: Total transaction from RTGS

	Minimum	Maximum	Mean	Std. Deviation
2012	1528600	1899675	1656630.583	113271.6754
2013	1548394	2300706	1889081.5	222185.6298
2014	1853305	2548957	2130101.25	206722.849
2015	1870334	3070403	2465057.417	373903.4976

The data as presented in Table 4.2.3 revealed the drift of RTGs rates for the 4 year period between 2012 and 2015. The least rate for RTGs was an average of 1656630.6 in year 2012 while the greatest rate was an average of 2465057.4 in year 2015. This characterized an affirmative advancement in the RTGS mean values of 48% over the 4 year period. The stable growth in RTGS values for the 4 year period shows that the fiscal growth has been on the rise

during the previous four years. Contrary, the standard deviation reveals slight changes in the monetary results between different listed financial institutions in Kenya.

Table 4.5: Correlation analysis

	ROA	Total transactions from ATM Cards	Total transactions from mobile payments	RTGS
ROA(r) (p) Sig. (2 tailed)	1.000			
Total transactions from ATM Cards (r) (p) (2 tailed)	0.708 0.039	1.000		
Total transactions from mobile payments (r) (p) Sig. (2 tailed)	0.752 0.028	0.281 0.021	1.000	
RTGS (r) (p) Sig. (2 tailed)	0.661 0.044	0.360 0.344	0.081 0.038	1.000

As per this correlation, the scope of output lies between the values -1 to 1. A unequivocal figure means that variables are unequivocally correlated while a negative correlation is indicated by a nehgaitve value. This indicates that the possibility of getting such a correlation coefficient by chance is less than 2.5 times, from the findings shown ATMS and bank financial performance are positively related (0.708), mobile banking is positively related with the bank performance (0.752) and RTGS and bank performance is (0.661)

4.3 Regression Analysis

To study the outcomes of the innovations on the financial performance of the financial banks, the research run a linear multiple regression test to analyze the impact of each of the innovations. The results are outlined in the subsequent sections.

4.3.1 Model Summary

The summary shows R as a degree of the correlation amid dependent variable and independent variables. The coefficient of determination which measure the level at which dependent variables are affected by independent variable is presented by R square. The adjusted R square, on the other hand measure how reliable the regression results are.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.882 ^a	.7779	.756	0.0221

a. Predictors: (Constant), Total transactions from ATM Cards, Total transactions from mobile payments, and RTGS

b. Dependent Variable: ROA

The findings outlined in Table 4.4.1 show the scope of variations on the gains that are expounded by independent variables. The value of R square is 0.8 when round off to the nearest ten this implies that 80% of deviations in outcome variables are described by the predictor variables.

Table 4.7: ANOVA (Analysis of Variance)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.576	3	3.192	7.32	.012 ^a
	Residual	17.004	39	.436		
	Total	26.58	42			

a. Predictors: (Constant), Total transactions from ATM Cards, Total transactions from mobile payments, and RTGS

b. Dependent Variable: ROA

The results in Table 4.4.2 indicate the significance of the independence variables in the prediction of the profits. The research has developed a meaningful value of P+).012, demonstrating the statistical significance of the relationship and illustrating that the probability of the observation of values equal or greater than 7.3.2 falls below 0.001 as shown by the value 0.012, which falls below the critical value. Thus, this indicates that the developed regression model is statistically significant. It also shows that the change in results is not significant, further revealing that a variation in the population of the study cannot produce a significant change. The model is therefore reliable.

4.3.2 Regression Coefficients

The study computed the coefficients of the regression analysis and obtainable the effects of each variable to the profitability along with the effects that would occur to the performance.

Table 4.8: Regression coefficients

	Unstandardized		Standardized		
	Coefficients		Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	6.182	.826		0.635	.0000
Total transactions from ATM Cards	0.764	1.25	0.61	0.648	.0068
Total transactions from mobile payments	0.810	.938	0.86	0.613	.0014
RTGS	0.661	1.56	0.42	0.615	.0261

The regression results above show that all the coefficients are positive. It also shows that the coefficients are significant considering their P-values, which fall below the value 0.025 tested at a 5 %. Therefore, with all values falling below a critical value of 4 when tested at 5 percent level, then all the coefficients are statistically substantial and tell more about the significant. As such, the coefficients can be used in answering the following regression model that relates the predictor variable and dependent variable.

$$Y = a + B_1 X_1 + B_2 X_2 + B_3 X_3 + e$$

Y = ROA as measure of financial performance

B₁ = the coefficient used to measure the sensitivity of the dependent variable

a = the constant

X₁ = is total transaction through ATM

X₂ = is total transaction through mobile banking

X_3 = is total transaction through RTGS

e = error term

The regression model therefore becomes

$$Y = 6.182 + 0.764 X_1 + 0.810 X_2 + 0.661 X_3 + e$$

The findings show that when we hold all factors constant, the profits will increase by 6.82 units. Again, holding all factors constant, the use of one unit of ATM will increase profitability by .076 units. As well, an increase of mobile banking usage by one unit will increase profits by 0.810 units. Finally, an increase in RTGS usage will lead to an increase in profitability by 0.661 units.

This analysis shows that innovativeness has had a huge impact in the productivity of banks and thus a significant correlation between innovation and financial performance.

4.4 Summary and Interpretation of the Findings

A probability value of 0.025 is indicated in the tests conducted at 95%, with 2 tailed tests. This reveals that available variables indicate a positive connection between innovation and fiscal growth of Kenyan financial institutions. It is correct to conclude that even the slightest change in variables of innovation will incline towards a positive corresponding effect on the variables of financial performance.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This section submits the compendium of the research outcomes, conclusions and the propositions arrived at based on the outcomes. It also presents the limitation encountered in the study as well as the areas for further research as pointed out in the research.

5.2 Summary of the Findings and Discussions

The research was conducted in order to find the implications of innovation on the financial growth of Kenyan financial institutions. The dependent variable was financial performance and it was measured by ROA for the banking industry from 2012 through 2015. The independent variable, on the other hand, was innovation and was measured by value of RTGS transfers, ATM cards and mobile payment.

The main analysis in the process of answering the object was regression analysis. The study adopted correlation analysis in the evaluation of the linkage between the variables. The study also established multiple regression analysis level in an attempt to find out the linear correlation between the variables. The main test statistics was the Chi-square test and was used in measuring the significance of these relationships. In testing how innovations were associated with financial attainment, the research found out that the linkage was significant.

The study revealed that there is a strong affirmative coexisting affinity between the value of mobile payments and the financial progress of the banks, as indicated by Pearson correlation coefficient of 0.752. It was also discovered that the association was statistically relevant at 5%. These findings therefore suggest a strong positive relationship between the value of

RTGS transfers and financial performance in the Kenyan commercial banks. Compared to outcome of Shirley and Sushanta's study (2006) which focused on the impact of IT on the banking sector, then the findings of this research is the exact opposite. Their study indicated that though Information technology might be cost saving, higher spending in the same might create network effects that lower the bank profits. The findings of the research demonstrate that while maintaining other factors, the value of ATM cards, mobile payments and RTG determines 88.2 percent of the profitability of commercial banks.

Only 8 percent of the profitability has not been accounted for by the study. As well, counting out the value of ATM cards, mobile payments, and RTGS transfers, the profitability of commercial banks would have been 6.18. Therefore, the value of mobile payments and performance are positively correlated.

5.3 Conclusion

The study looks into innovation by identifying the possible relationships between innovation and the fiscal performance of financial institutions in Kenya. From the findings indicated above, the study outlines conclusions regarding how innovation affects the fiscal performance of financial banks. These conclusions are; the innovations applied in the banking sectors of Kenya greatly affect the fiscal performance of financial institutions. The innovativeness of commercial banks in Kenya has an impact on their financial achievement.

For the findings of this study, it is clear that innovation in regard to banking can significantly influence the financial progress of Kenyan financial institutions. As well, the outcome of the research confirms; an increase in the level of innovation can result to increased fiscal attainment. Precisely, the findings of the study have shown the relevance of innovation in meeting customer's needs and in attaining a competitive edge.

5.4 Limitations of the Study

The research was limited only on financial innovativeness of the commercial banks as the Determinant of fiscal performance of financial institutions in Kenya. Correlation and regression analysis possess assumptions which do not hold as they are computed using ratios in analysis of the economic performance, less information is provided in financial statements. This also limits the results as they can only be used to project the fiscal achievement of the institutions and the general economic aspect.

The use of secondary data also limited the study findings. This is because the use of Secondary data that had been collected for other purposes would not fit the purpose of the research. Secondary data also is prone to the owner biasness and inaccuracy. Hence the computed data may not bring about the specific required findings for the research taken. The data collection procedures were as well source of data might be outdated for effective and efficient conclusion of the research findings. Related literature on the subject was also inadequate. This therefore limited the ability of the study to evaluate existing knowledge in the field in finding more information on the research objectives. Moreover, variations in the macroeconomic environment might have influenced the profitability of financial institutions.

5.5 Recommendations

The application of parameters that enhance the concept of “rapid-learning financial system.” The circulation of quality data measurements should be considered as one arm in a multi-

armed design to enhance quality and financial development. Associated strategies should incorporate providing specialised help to boost providers' scope to information.

Assign a particular entity with defining standards for evaluating and reporting quality and cost data, serves for the reporting of organizational financial data, to enhance the validity, and comparability, quality information. This can have a direct impact on enhancing financial performance.

The research also proposes that organizations should facilitate suitable circumstances that enhance novelty of workers in their daily tasks allowing the organizations to compete effectively and enhance economic performance.

Basing on the findings of the research organization can improve the level of performance by embracing new technological equipment's and performing more research on the new products hence high level of competitiveness both in the national and international market. Thus, attaining competitive advantage on the existing environment.

5.6 Suggestion for Further Research

The research suggested further for organizations to look at Total Quality Management TQM, also known as "total productive maintenance", explains a managerial technique to sustained development through customer fulfillment. Under this scenario, employees of an organization take part in enhancing procedures, goods, services and the mindset of their workplace.

The study also suggest on researching ways of increasing employees motivations on the improving the fiscal performance of the monetary institutions this can be through fairness to job promotions , employees inclusiveness on the policy making decisions.

More studies should be done on the organization management on their leadership skills to establish whether it has a positive outcome on the level of the fiscal performance of the financial institutions this more research should be carried out to investigate the effects of ICT on the fiscal attainments of financial institutions this can explained by internet banking which has improve performance of many banking industry globally.

REFERENCES

- Aduda, J., & Kingoo, N. (2012). *The Relationship between Electronic Banking and Financial Performance among Commercial Banks in Kenya*. *Journal of Finance and Investment Analysis*, 1(3), 99-118.
- Antonnet, A.J. (2014). *The effect of product innovation on financial performance of commercial bank in Kenya*.
- Athanasoglou P., Delis M & Stalkouras C. (2006) *Determinant of banking profitability in the south eastern European region bank of Greece journal* 6(47):21-24.
- Barney, J. (1991). *Firm resources and sustained competitive advantage*.
- Burns & Grove. (2012) *the practice of Nursing research* 7th edition.
- Cooper, D.R, & Shindler, P. S. (2006). *Business Research Methods* (9 Ed.) New Delhi: MC Graw – Hill.
- ECB (1999) “Payment System in the European Union” Addendum incorporating 1997 figures (blue book) January.
- European Central Bank. (2010). *Beyond ROE. How to measure bank performance*.
- Evangelina, W.W. (2010). *The effect of technological innovation on the performance of commercial bank in Kenya*.
- Geroski, P. (1995). *Innovation and competitive advantage*. 159, OECD, Paris.
- Kariuki, N. (2005), *six puzzles in Electronic Money Banking* IMF working paper IMF institute. Vol. 19. February

Kombo, D.K., & Tromp, D.L.A. (2009). *Proposal and Thesis Writing: An Introduction*. Paulines Publications Africa, Don Bosco Printing Press, Nairobi Kenya .Noyer, (2007). France banking industry

Lilly, L. & Juma, D. (2014). *Influence of strategic innovation on performance of commercial Bank in Kenya*.

Oloo, O. (2009), *the banking survey 2009*. Think business Nairobi

Parahoo, Kader (1997) *Nursing Research: principles, process and issues ...* Palgrave. 416pp ISBN 03336999189.

Rogers, E.M. (1995). *Diffusion of innovation* (4e.d) New York: The free press.

Rothwell, (1994:40-50), *Science Policy Research Unit* (SPRU), the University of Sussex

Steven A., (2002), *Information system, the information of e-business*, New- jersey: Natalia Anderson, PP, 11-36.

APPENDICES

Appendix I: Return on Assets (Financial performance)

	Minimum	Maximum	Mean	Std. Deviation
2012	1.30	11.00	4.7083	2.74076
2013	3.10	6.50	4.6083	1.21839
2014	3.40	7.00	4.9917	1.29857
2015	3.60	7.60	5.4083	1.42539

Appendix II: Total transactions from ATM Cards

	Minimum	Maximum	Mean	Std. Deviation
2012	12085.00	15022.00	13074.3333	810.09902
2013	12762.00	16513.00	14327.5000	1190.07865
2014	801.00	3888.00	3174.5000	1071.97842
2015	739.00	976.00	856.5833	65.92897

Appendix III: Total transactions from mobile payments

	Minimum	Maximum	Mean	Std. Deviation
2012	114.06	150.16	128.7846	10.32045
2013	134.446	182.495	158.4633	15.719
2014	172.797	225.549	197.6495	14.54962
2015	208.132	267.068	234.6749	18.2454

Appendix IV: Total transaction from RTGS

	Minimum	Maximum	Mean	Std. Deviation
2012	1528600	1899675	1656630.583	113271.6754
2013	1548394	2300706	1889081.5	222185.6298
2014	1853305	2548957	2130101.25	206722.849
2015	1870334	3070403	2465057.417	373903.4976

Appendix V: List of commercial banks in Kenya as at 31/12/2015

1. ABC Bank (Kenya)
2. Bank of Africa
3. Bank of Baroda
4. Bank of India
5. Barclays Bank of Kenya
6. CFC Stanbic Holdings
7. Chase Bank Kenya(in receivership)
8. Citibank
9. Commercial Bank of Kenya
10. Consolidated Bank of Kenya
11. Cooperative Bank of Kenya
12. Credit Bank
13. Development Bank of Kenya
14. Diamond Trust
15. Dubai Bank (in receivership)
16. Ecobank Kenya
17. Equity Bank
18. Family Bank
19. Fidelity Commercial Bank Ltd
20. First Community Bank
21. Giro Commercial Bank
22. Guaranty Trust Bank Kenya
23. Guardian Bank
24. Gulf African Bank
25. Habib Bank

26. Habib Bank AG Zurich
27. Housing Finance Company of Kenya
28. I&M Bank
29. Imperial Bank Kenya(in receivership)
30. Jamii Bora
31. Kenya Commercial Bank
32. Middle East Bank Kenya
33. National Bank of Kenya
34. NIC Bank
35. Oriental Commercial Bank
36. Paramount Universal Bank
37. Prime Bank Kenya
38. Sidian Bank
39. Spire Bank
40. Standard chartered Kenya
41. Transnational Bank Kenya
42. United Bank for Africa
43. Victoria Commercial Bank