

**IMPACT OF FINANCIAL INNOVATIONS ON THE FINANCIAL PERFORMANCE OF
COMMERCIAL BANKS IN KENYA**





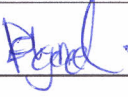
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**A MANAGEMENT RESEARCH PAPER SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENT FOR THE DEGREE OF BACHELOR OF COMMERCE
(FINANCE) AT THE UNIVERSITY OF NAIROBI**

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DECLARATION

We declare that this is our original work and has not been presented for a degree in any other University.

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DEDICATION

This work is dedicated to our parents for the efforts and sacrifices they have made to make us independent individuals. It is also dedicated to Department of Finance and Accounting at University of Nairobi for their help and mentorship in this journey of knowledge.

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Our sincere gratitude goes out to the Almighty Father who guided and protected us throughout this project. His faithfulness and blessings was beyond any measure unimaginable. We will forever be grateful.

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ABSTRACT

Over the last years there have been many changes in the Kenyan banking sector and these changes have been attributed to the various innovations adopted by banks. These innovations were categorized into product, process and institutional. Thus, this study sought to determine the impact of financial innovation on the financial performance of commercial banks in Kenya.

The population of this study consisted of 44 commercial banks in Kenya. Out of these, a sample of 20 commercial banks was randomly sampled. 20 questionnaires were sent out to the top and middle level management of these organizations because they are most likely to be the ones who make the final decisions. 18 commercial banks of the 20 sampled responded and were used in this study. Data collected was edited for accuracy, consistency, uniformity and completeness to enable coding and tabulation before analysis. Data was analyzed and presented using descriptive statistics, tables, graphs and pie-charts, by the use of Statistical Package for Social Sciences (SPSS) version 17.

The study concluded that adoption of financial innovations in the operations of commercial banks has a positive effect on their financial performance. This can be supported by the fact that financial innovations also increases banks' profitability, gives banks competitive advantage and increases service quality and efficiency. It was further noted that that there had been a notable increase in the number of bank accounts opened over a five year period. This could be attributable to the fact that technological innovations led to increased efficiency in account processing whereas market innovations led to increased market share.

LIST OF ABBREVIATIONS

ANOVA	Analysis Of Variance
ATM	Automated Teller Machine
CAMELS	Capital adequacy, Asset quality, Management quality, Earnings, Liquidity and Sensitivity to market risks.
CBK	Central Bank of Kenya
EN	Enterprise Network
EFTPoS	Electronic Funds Transfer at Point of Sale
RI	Residual Income
ROA	Return On Assets
ROC	Return On Capital
ROE	Return On Equity
ROI	Return On Investments
ROI	Return On Investments
SPSS	Statistical Package for Social Sciences
SWOT	Strengths, Weaknesses, Opportunities and Threats
WAN	Wide Area Network
YEA	Youth Enterprise Account

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Innovation, according to Merton 1995, is the introduction of a new product in the market or the production of an existing one in a new manner. It occurs because market participants are constantly searching for new ways to make greater profits. Innovation involves deliberate application of information, imagination and initiative in deriving greater or different values from resources, and includes all processes by which new ideas are generated and converted into useful products. In business, innovation often results when ideas are applied by the company in order to further satisfy the needs and expectations of the customers. In a social context, innovation helps create new methods for alliance creation, joint venturing, flexible work hours, and creation of buyers' purchasing power. Basically, it is grouped by functional basis; that is either aggressive or defensive. Aggressive innovation is the introduction of a new product or process in response to perceived demand, while Defensive innovation is the introduction of new product or process in response to changed environment or transaction cost. Thus, Innovation generally refers to the introduction or use of new ideas or ways of doing things. Financial innovation consists of commercial banks developing new products or service or new production processes. Innovation has been rapidly facilitated in the financial sector, due to the development of capital markets. Banking systems both in the developing and developed countries are subjected to the ongoing environmental change due to: technological innovations, competition, and globalization, trends in financial demand, supply diversification, economic volatility, deregulation and subsequent regulation.

Tufano (2002) broadly categorizes financial innovations into two types: process and product innovation, where process innovation is demonstrated by new means of distributing securities, processing transactions or payment system technologies, while product innovation can be illustrated by corporate securities or derivative contracts.

Financial innovation arises in anticipation of material gains following a cost-benefit analysis. The innovation makes possible either an increase in revenues or a reduction in costs or at times

both. On the cost-reducing side, in particular, exogenous technological change provides room for cost reduction that induces innovation. For example, advances in information technology have significantly lowered the cost of accounting-intensive products such as mutual funds. Other product innovations relying on speedy calculation action, such as portfolio insurance and index arbitrage transaction, have similarly been made feasible by upgrade in computer speed. The Automated Teller Machines which reduce banks' operating costs by efficiently executing much of a teller's duty over the retail counter, is one of the renowned innovations that benefit from technological advances.

According to Ross Levine (1997) the centrality of finance in an economy and its importance for economic growth naturally raises the importance of financial innovation. Profit-seeking firms and individuals are constantly seeking new and improved products, processes, and organizational structures that will yield greater profits, reduce their cost of production and to a greater extent better satisfy customer demands. This search occurs through formal research and development products and at times through the trial and error efforts. Since finance is a facilitator of virtually all production activity and much consumption activity, improvements in the financial sector will have direct positive developments throughout an economy.

In a much broad sense, financial innovation can be defined as the emergence of a new financial product or service, new organizational form, or new processes for a more developed and complete financial markets that reduce costs and risks, or provide an improved service that meets particular needs of financial system participants. Generally, financial innovation has generated a wide interest as a research subject in social sciences with a particular focus on its impacts on financial performance of commercial banks. In a highly turbulent environment, a successful innovation creating a unique competitive position can give the company a competitive advantage and lead to a superior performance (Roberts and Amit, 2003). Generally speaking, all profits seeking enterprises including banks are constantly seeking new and improved products, processes and organizational structures that can reduce their costs of production, better satisfy their customers' needs, 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 decade 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. This type of financial deregulation, as it may be called, triggers off the incentive for innovation.

The significance of financial innovation is an important phenomenon in any sector of a modern economy. Since finance is an input for virtually all production activity and much consumption activity, improvements in the financial sector will have positive direct consequences throughout the economy. Many leading scholars, including Miller (1986) and Merton (1982) have highlighted the importance of new products and services in the financial arena. These innovations are not just critical for commercial banks in the financial service industry, but also impact other companies; for instance, enabling them to raise capital in large amounts and at a lower cost than they could otherwise. Further, since better finance can encourage more saving and investment and can also encourage better, more productive investment decisions, these indirect positive effects from financial innovation are yet greater still.

1.1.1 Financial Innovation

A lot of reforms have been undertaken in the financial sector that have led to proliferation of financial products, activities and organizational forms that have improved and increased the efficiency of the financial system and also has contribute heavily in building capital base, customer base as well as enhancing their profitability. All these developments coupled with changes in the international financial environment and the increasing integration of domestic and international financial markets have led to rapid financial innovations. The following paragraphs will discuss the most common technological innovations.

An automated teller machine (ATM) which is a computerized telecommunications device that provides the customers of a financial institution with access to financial transactions in a public space without the need for a human clerk or bank teller(John McGill,2004) .ATMs are the most frequently used electronic distribution channel that allows bank clients to perform their main banking transactions, such as access their bank accounts in order to make cash deposits and withdrawals, as well as purchasing mobile cell phone prepaid credit 24hours a day. Most ATMs are connected to interbank networks, enabling people to withdraw and deposit money from

machines not belonging to the bank where they have their account or in the country where their accounts are held thus enabling cash withdrawals in local currency (Maxwell, 1990). ATMs were introduced first to function as cash dispensing machines. However, due to advancements in technology, ATMs are able to provide a wide range of services, such as making deposits, funds transfer between two or accounts and bill payments. Banks tend to utilize this electronic banking device, as all others for competitive advantage. ATMs also save customers time in service delivery as alternative to queuing in bank halls, customers can invest such time saved into other productive activities.

Telephone banking, according to Cronin, (1997), is a service provided by a financial institution which allows its customers to perform by telephone. Mostly telephone banking uses an automated phone answering system with phone keypad response or voice recognition.

Telephone banking representatives are usually trained to do what was traditionally available only at the branch such as loan applications, investment purchases and redemptions, chequebook orders, debit card replacements and change of address. Telephone banking provides services such as account and list of latest transaction, transfer of funds between a customer's account, electronic and instructions to issue bank cheques (Davies, Moutinho and Curry, 1996).

The idea of Internet banking was to give customers access to their bank accounts via a web site and to enable them to enact certain transactions on their account, given compliance with stringent security checks. Internet banking by its nature offers more convenience and flexibility to customers coupled with a virtually absolute control over their banking. Service delivery is informational; informing customers on bank's products and transactional (conducting retail banking services). In addition to that it is the most cost-efficient technological means of yielding higher productivity. Furthermore, it eliminates the barriers of distance / time and provides continual productivity for the bank to unimaginable distant customers.

Another form of innovation is electronic Funds Transfer at the Point of Sale which is an online system that allows customers to transfer funds instantaneously from their bank accounts to merchant accounts when making purchases (at purchase points). A POS uses a debit card to activate an Electronic Fund transfer Process (Chorafas, 1988). Increased banking productivity results from the use of EFTPoS to service customers shopping payment requirements instead of clerical duties in handling cheques and cash withdrawals for shopping.

Branch networking is the computerization and inter-connecting of geographically scattered stand-alone bank branches, into one unified system in the form of a Wide Area Network (WAN) or Enterprises Network (EN) for the creating and sharing of consolidated customer information records (Abor,2005). It offers quicker rate of inter-branch transactions as the consequence of distance and time are eliminated. Hence, there is more productivity per time period. Also, with the several networked branches serving the customer populace as one system, there is simulated division of labour among bank branches with its associated positive impact on productivity among the branches. Furthermore, as it curtails customer travel distance to bank branches it offers more time for customers' productive activities.

1.1.2 Financial Performance Measures

According to San and Hens (2011) corporate performance can be measured by variables which involve productivity, profitability, growth or even customer satisfaction. These measures are related among each other. Financial measurement is one of the tools which indicate the financial strengths, weakness, opportunities and threats (SWOT). These measures are Residual Income (RI), Return on Investment (ROI), Price earnings ratio, dividend yield, growth in sales and market capitalization (Barbosa and Louri, 2005). One of the most fundamental factors about business is that the operating performance of the firm shapes its financial structure. It is also true that the financial situation of the firm can also determine its financial performance. The financial statements are therefore important diagnostic tools for the informed manager. Management researchers prefer accounting measures of performance, such as Return on equity (ROE), Return on investment (ROI), and Return on assets (ROA), along with variability in these return measures. Researchers from finance and economics seem to prefer market returns or cash flow measures along with their variability as performance measures. Some performance in previous studies typically measure accounting rate of return (Rao et al, 2007). According to their study the idea behind this measure is perhaps to evaluate perform on capital(ROC), return of assets(ROA), and return on sales(ROS) are essentially efficient measures, that is how well management is using the assets or sales. Return on assets and return on equity are the most frequently used performance measures in prior studies, Carter (1977) and Obert and Olawale (2010). Regarding the earnings and profitability factors, Sahajwala and Bergh (2000) included aspects like return on assets compared to peer group averages and the banks own trends, material

components, income and expenses--compared to peers and the banks own trends, adequacy of provision for loan losses, quality of earnings and dividend payout ratio in relation to the adequacy of bank capital.

Financial performance of banks is usually measured using a combination of financial ratios, measuring performance against budgets or a mix of these methodologies and benchmarking (Barley, 2000). The Kenyan Banking sector has demonstrated a solid growth since 2003 when most of the financial innovations were adopted. The industry continues to offer substantial profit opportunities for the major participants; profit after tax for the overall banking sector grew by 38.61% from 13.15 billion to 18.22 billion in December 2005.

Another measure for financial performance is CAMELS, acronym for six components of a banks condition that are assessed. These are Capital adequacy, Asset quality, Management quality, Earnings, Liquidity and Sensitivity to market risks: Capital adequacy is a measure of banks ability to meet its obligation relative to its exposure. The parameters indicate the bank's capacity to maintain capital commensurate with the nature and extent of all types of risks. Capital adequacy ratio enables to ensure that a bank is able to handle losses and fulfill its obligation to account holders without ceasing operations.

Asset quality, this parameter is very helpful in measuring the magnitude of credit risk prevailing in the bank due to its composition and quality of loans, advances, investment and off balance sheet activities. Management quality, this parameters signals the ability of the board of directors, senior mangers including top management to identify, measure monitor and control risks associated with banking, this qualitative measure uses risk management policies and processes as indicators of sound management.

Earnings, this parameter indicates not only the amount of and trend in earnings, but it also analyzes the robustness of expected earnings growth in future. Liquidity, this parameter takes into account the adequacy of the bank's current and potential sources of liquidity, including strength of its fund management practices. Sensitivity to market risk, this is a recent addition to the rating parameters and it reflect the degree to which changes in interest rates ,exchange rates, commodity prices, and equity prices can affect earnings and hence the bank's capital.

Banks supervisory authorities assign each bank a score on a scale of 1 (best) to 5 (worst) for each of the factors. If a bank has an average score less than 2 it is considered to be a high quality institution, while banks with a score greater than 3 it is considered to be less than satisfactory. Earnings, liquidity and capital adequacy are the key elements of measuring performance in commercial banks. Ratings are assigned for each component in addition to the overall rating of a bank's financial performance (Jose, 1999).

1.1.3 Commercial Banks in Kenya

Banking act (2009) defines a bank as a company which carries on banking businesses in Kenya. Banking business means the accepting from members of the public on money payable on deposit repayable on demand or at the expiry of a fixed period or after notice; the accepting from members of the public of money on current account and payments on and acceptance of cheques; and the employing of money held on deposits or on current account, or any part of the money, by lending investment or in any other manner for the account and at the risk of the person so employing the money. (The Banking Act chapter 488).

The banking sector in Kenya is composed of the Central Bank of Kenya (CBK) as the regulatory authority and the regulated are commercial banks, non-bank financial institutions and forex bureaus. As at 31st December 2011 the banking sector comprises 44 institutions 43 of which are commercial banks and one mortgage finance company that is, the Housing Finance Company Limited, which are licensed and regulated under the banking act Cap 488. The locally owned financial institutions comprised of three banks with significant government shareholding. The financial performances of banks have been in a general increasing trend and these have mainly been attributed to proper management, formulation and implementation strategy.

Financial performance of the banking sector was rated strong as institutions achieved satisfactory financial performance and also improved financial results despite the high market competition as each bank scramble for a significant market share. Financial innovations have created competitive advantage to the banking industry hence have been introduced into the market as a result of raising competition. The banks remained well capitalized, shareholders funds deposits and assets increased 35.2% and 31.9% respectively (CBK, 2010).

1.2 Statement of the Problem

The concept of innovation often appears in the context of technological adoption and has also been used in the context of e-commerce adoption research Birch (1989). Conversely, skill shortages and lack of knowledge are found to be inhibiting innovation factors along with other less obvious barriers, advantages and opportunities. Commercial banks have made strides due to improved use of financial innovations. The issue now is to whether the heavy investment in new innovation will lead to improved financial performance. The other issue arising is whether all innovations are viable or are certain innovations not necessary in consideration of clients.

Some economists argue that financial innovation has little to no productivity benefit: Paul Volcker states that "there is little correlation between sophistication of a banking system and productivity growth" that there is no "neutral evidence that financial innovation has led to economic growth" and that financial innovation was a cause of the financial crisis of 2007–2010 while Paul Krugman states that "the rapid growth in finance since 1980 has largely been a matter of rent-seeking, rather than true productivity.

Locally, Mwangi (2007) carried out a study on factors influencing financial innovation of 48 companies listed at Nairobi Securities Exchange. Mwangi's argument was based on the fact that global financial competition and integration had an influence on financial innovation with increased financial competition amongst financial institution influencing financial innovation the most. Kihumba (2008) conducted a study on the determinants of financial innovations and its effects on financial performance in Kenya. His study focused on financial innovation as a strategy and hence it did show that there was an impact of financial innovation on Commercial banks financial performance. Kamotho (2009) carried out a study on mobile phone banking usage experiences in Kenya and observed that competition triggers innovation and creativity. To date there are only limited number of studies that have examined the financial innovation and financial performance correlation. Our study therefore seeks to find out more on the financial innovations and how they affect the financial performance exclusively on banking industry (commercial banks in Kenya) using non-financial and financial measures.

1.3 Objectives of the Study

The objectives of this study were:

1. To establish the types of innovation.
2. To determine impact of financial innovations on the financial performance of commercial banks in Kenya.
3. To establish the application of various innovations by commercial banks.

1.4 Significance of the Study

Findings would indicate how financial innovations contribute to banks financial performance:

Banks: This would help bank managers to determine and adopt the best suitable financial innovations for their banks. Innovations such as M-shwari will reduce paperwork and also save time. Therefore bank managers would clearly understand the same and would strive to encourage or discourage financial innovations based on such findings and hence reduce on some of the various expenses such as labour cost.

Academicians: The findings would benefit the academicians as it would add existing knowledge, and would form a literature base upon which further studies and references would be drawn and would enable the scholars and researchers broaden their knowledge on how financial innovation contributes to banks financial performance.

Government: The government will obtain information on the importance of innovations and its implementation on various legal frameworks in relation to financial performance. This would help the government in stabilizing the economy for the welfare of the citizens and in achieving vision 2030.

Shareholders: The study outlines the advantages of embracing financial innovations, which if adopted might improve the banks performance financially and increase market share thus higher dividends to the shareholders. It will also help them make appropriate policies regarding establishment of more financial innovations and how the existing ones can be encouraged to expand, promote and improve performance.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter summarizes the information from other researchers who have carried out their research in the same field of study. The specific areas covered here are; 2.2 review of theories 2.3 review of empirical studies 2.4 financial innovations in the banking sector 2.5 financial performance measures 2.6 conclusions from literature review.

2.2 Review of theories

In this literature review, three theories in relation to financial innovation have been reviewed. These theories are; Christensen and Raynors's theory of the Innovators Solution, Theory of constraints and Financial intermediaries theory.

2.2.1 Christensen and Raynors's theory of the Innovators Solution

This is a brilliant analysis of why companies fail to innovate. It explains convincingly why corporate managements don't learn about good ideas and why managers succumb to inherent pressures to run away from the challenge of disruptive competition rather than stand and fight. The decisions made as a result of these pressures make sense in the short run to the individuals involved, but in due course they send the organization into an inexorable death spiral (Anthony and Christensen 2008).

But while their analysis of the causes of failure to undertake disruptive innovation is effective, their proposal for solving the dilemma of disruptive innovation is less helpful. The central premise of their thesis-the innovators solution-is to accept the grim reality that big companies are inherently and constitutionally disinclined to tackle disruptive innovation. A modern organization will crush disruptive ideas, because they represent a threat to management, to careers, to power structures, to customary ways of things, to client bases, to brands, and to corporate culture. The author's solution is to protect genuine innovators and their disruptive change ideas from these hostile forces. According to Christensen and Raynor, corporate leaders

should put up a wall between the innovation and the existing hierarchy. Leadership should create an independent business unit, which will provide a safe and protected environment for innovation. Therefore, the innovation can flourish without having to fight off the interferences and intrusions and anti-innovation attitudes of the hierarchy.

Christensen and Raynors's innovators solution theory rests on the hope that if one can build enough commercial success in the marketplace, he/she has a better chance of eventually winning that battle of persuasion. Surely, their argument goes, the hard numbers will win the war. Unfortunately the track record shows that even with strong commercial success, numbers and reason are not enough to dislodge the forces of stasis and inertia.

Christensen's framework has certainly heightened practitioner awareness of the basic phenomenon of creative destruction described by Schumpeter, i.e. that market churn is a fundamental feature of competition and the evolution of "perennial" issue in research on the economics of innovation, technology evolution, firm strategy, marketing and entrepreneurship. This means that potentially relevant literature is enormous. So in our review of the literature below, we restrict ourselves to summarizing three central issues that are historical staples in the literature, plus an overview of current conversation.

First, the economic incentives for incumbent firms to engage in uncertain innovative activities have been examined in detail in the literature on the economics of technological innovation and firm strategy (Reinganum, 1983). The central proposition of this research is that incumbent firms will experience disincentives to create new technologies that disrupt existing technologies because the new technology cannibalizes the rent stream from the old. Non-incumbent challengers do not face this disincentive. So they rationally invest more and as a result will contribute a disproportionately large share of major innovations (Reinganum, 1983). Thus, incumbents face the unsavory prospect of having to decide when to start cannibalizing themselves in the full knowledge that much uncertainty pervades this choice. If they listen to their existing customers too much and stay with them too long they face being disrupted by an entrepreneurial attacker; if they listen inadequately to their existing customers and migrate to a new technology too early then they lose the rent stream from the old product. The uncertainty surrounding this choice is indeed deep, as Rosenberg (1996) has cautioned.

The simultaneous advance in new technology, along with the substantial upgrading of old technology, underlines the pervasive uncertainty confronting industrial decision makers in a world of rapid technological changes (Rosenberg, 1996).

Second, the marketing literature has focused on a central and unsettling suggestion that the innovators dilemma consists in the fact that by doing the right thing (i.e. listening to current customers) leading firms often end up losing their markets to upstart newcomers. This is unsettling because compelling evidence exists in the marketing literature that market orientation leads to positive business performance (Matsuno et al., 2002). The essence of this debate suggests a trade-off between two fundamental functions of good management: the creation of satisfied customers and the creation of innovations. The trade-off is echoed in Workman (2004), who recently conclude in line with Christensen and Bower (1996).

Third, organizational researchers have been concerned with the questions that the innovators dilemma poses for organizational change, in particular the problem that disruptive technologies pose for organizational capabilities (Henderson, 1993). The essence of this problem is very well understood in the literature on organizational learning: it is an example of organizations having to cope with the difficulties inherent in trading-off the exploitation of existing technologies, capabilities and markets with the exploration for new technologies, capabilities and markets. March captured this trade-off as the relationship between exploration of new possibilities and exploitation of old certainties (March, 1991). Firms balance exploration with exploitation trading off the costs of exploration (investments in survival) with the benefits of exploitation (maximizing returns to investors). Organizations sit atop the horns of a dilemma between investing in tomorrow's support long-run sustainability and harvesting short-run benefits from today's capabilities.

2.2.2 Theory of constraints

This is the most influential theory of financial innovation. It was presented by Silber (1975, 1983). This theory considers product innovation as response of organization to the constraints placed up on it. Innovations have many causes. Firms may need to stop the loss of deposits, enter new geographic or product markets and deliver services with cheaper and better technology. In

addition, they may want to increase their capital base, alter their tax position, reduce their risk profile or cut operating costs (McConnell and Shwarch 1992).

2.2.3 Financial intermediary's theory

This theory of financial intermediary suggests that, financial innovation occurs because the agents in the market are searching for new ways to make higher profits. A change in economic environment will stimulate a search for innovation that are likely to be profitable. Asymmetries can be of an ex ante nature; generating adverse selection, they can be interim, generating moral hazard and they can be of ex post nature; resulting in auditing or costly state verification and enforcement. The Information asymmetries generate market imperfection i.e. deviation from neoclassical framework. Many of these imperfections lead to specific form of transaction cost. Financial intermediaries appear to overcome these costs, at least partially. For example Diamond consider banks as coalition of depositors that provide house hold with insurance against distinctive shocks that adversely affect their liquidity position. Another approach is based on Leland and Pyle (1977). They interpreted financial intermediaries as information sharing coalition, diamond (1984) is also of the views that financial intermediaries act as delegated monitors on behalf of ultimate savers.

Friction that relates more to investors' information sets; numerous authors have stressed the role of asymmetric information as an alternative rationalization for the importance of intermediaries. Diamond (1984) has argued that intermediaries overcome asymmetric information problems acting as "delegated monitors" Many others followed, expanding on these two contributions and advancing the literature in substantive way.

2.3 Review of Empirical Studies

Tufano (1989) did a research on financial innovation and fast mover advantages. The study was conducted over the period of 197-1986. The objective of the study was to determine whether financial products innovators enjoy fast mover advantages. The data was collected from 1,944 publicly traded securities where he specifically used a sample of 58 innovations to test whether investment banks that create new securities benefit by charging high prices than imitators or by capturing large quantities.

Tufano concluded that investment banks that created new financial products did not charge higher prices in the period before imitative products appear and in the long run charges lower than rivals. However these innovators did underwrote more public offering than they innovated than did the innovating rivals. Overall, Tufano's results was not consistent with monopoly pricing of new securities issues by innovators, but rather with the present of cost advantages that allow those institutions to capture market shares.

Sullivan(2000) compared banks in the 10 federal reserve districts (banks in Colorado, Kansas, Nebraska, New Mexico, Oklahoma, and Wyoming) that used internet websites for transactional services to banks that did not offer the service in the first quarter of 2000; using survey data of first quarter of 2000. The study established that internet based transactional services were larger in areas with an educated populace with a higher proportion of the population being in the 18-64 age bracket. The banks that were offering transactional internet websites also had higher non interest income and noninterest expenses.

Furst, Lang and Nolle(2002) analyzed survey data on internet banking in the third quarter of 1999 to find out characteristics of banks that offer internet banking using the logit models and found out that adoption of internet baking is dictated by urban area locations, affiliation to a holding company, higher fixed expenses and higher noninterest income. The study concluded that for the bank that offered internet banking, a great number of their service offerings were positively related to the size of the bank and the length of period of offering internet banking related services.

Locally, Mwangi (2007) carried out a study on factors influencing financial innovation of 48 companies listed at Nairobi Securities Exchange. The objective of the study was to explain Macro-environmental and micro-environmental factors influencing financial innovation in Kenya's securities markets.

The population used in this study was 48 companies listed on the Nairobi Stock Exchange in 2005, currently the Nairobi Securities Exchange. An exploratory survey was conducted between September 2005 and March 2006, of which 31 respondents was obtained. The data was analyzed using descriptive statistics. Semi-structured questionnaire, drop and pick method was employed. Data in this study was summarized and presented in form of tables, percentages, frequencies, mean scores and standard deviations. The findings concluded that Kenyan laws protecting

investors was the major factor influencing financial innovation. Further, the research finding showed that unstable forex rates were the most influencing factor influencing financial innovation among market volatility factors. Mwangi observed that absence of automated trading systems as a technological factor was found to influence financial innovation regularly.

Kamotho 2009 carried out a study on mobile phone banking usage experiences in Kenya. The study is informed by quantitative survey on M-banking services and demand. Data usage and exploitation patterns were gathered through reliable cluster techniques using comprehensive questionnaire. The study covered the two main dominant mobile banking service providers; Safaricom and Zain between the periods 2006-2008, from inception with total outlets of 8000 agents. The number tripled compared to 876 branches and 1424 ATM for commercial banks (CBK, 2008). Kamotho; observed that competition triggers innovation and creativity. Continuous innovation not only yield new products but rather promotes efficiently the performance of activities hence, lowering the transaction costs. This finding is also confirmed by Tufano (1989). Contrary to popular wisdom that mobile phone money services are meant for funds transfer and remittances his findings concluded that 96% of the respondents use banking service as form of bank storage.

2.4 Financial innovation in the banking sector

According to the literature, financial innovation are specifically driven by technological change, consumer demand, the need to hedge stiff competition and to reduce the cost of operations by banks in general. The major discussions are focusing on the lines of new organizational forms, new products and services and new production process.

2.4.1 Organizational Innovation

Organization innovations are those that affect financial sector as a whole. They relate to business structures, establishment of new financial intermediaries and changes in the legal and supervisory framework. There are several examples of these innovations and they include; credit reference bureaus which collect manage and disseminate customer information to lenders within a provided regulatory framework. Commercial banks are moving to acquire stock brokerage and investment banks to get involved in the stock activity. Examples include; NIC Bank, Equity

bank, Cooperative bank. Banks offering insurance services on behalf of insurance companies, Islamic banking-banking that is guided by Islamic Sharia law. The Islamic banks include Gulf African bank, Barclays bank of Kenya and First community Bank.

2.4.2 Product innovation

Mortgage loans are one suite of products that have experienced a great deal of change. In 1980, long-term fully amortizing fixed rate mortgages were the norm and were primarily offered by thrift institutions. These loans required substantial down payment and a good credit history and the accumulated equity was relatively illiquid. These characteristics have evolved. One mortgage innovation more directly tied to technological change is subprime lending, which was originally predicated on the use of statistics for better risk measurements and risk based pricing to compensate for these higher risks. However, the subprime mortgage crisis has uncovered significant shortcomings in the underlying statistical models. Examples of product innovation are Airtel and Safaricom mobile phone transfer services M-pesa and Zap to tap the potential for small scale transactions at a reasonable cost. Equity bank partnering with Safaricom to introduce the M-kesho, Commercial Bank of Africa partnering with Safaricom to introduce M-shwari, Diamond Trust Bank introducing NationHela. Banks account are tailored for specific age groups such as YEA Cooperative account for the youth and Barclays banks junior eagle account and cooperative bank jumbo junior account for the children.

2.4.3 Service innovation

Service innovation primarily relate to enhanced account access and new methods of payments each of which better meets consumer demands for convenience and ease. Automated Teller Machines (ATM) significantly enhance retail bank account access and value by providing customers with around the clock access to funds. ATM cards were largely replaced through the 1980s and 1990s by debit cards, which bundle ATM access to make payment from a bank account at the point of sale. Over the past decade, remote access has migrated from the telephone to the personal computers. Below is a description of the service innovations.

Online banking, which allows customer to monitor accounts and originate payments using electronic bill payment, is now widely used. During the late 1990s, commercial banks established

an online presence. The first bank websites were launched in 1995, and by 2002 nearly one and a half of all U.S. banks and thrifts operated transactional websites. As of 2007, bank call report data suggests that 77% of commercial banks offer transactional websites. The primary line of research relating to online banking has been aimed at understanding of bank adoption and how the technology has affected the bank performance. De Young, Lang and Nolle (2007) report that internet adoption improved U.S bank profitability primarily through deposit charges. In a related study, Hernando and Nieto 2007, find that; over time online banking was associated with lower cost and higher profitability for a sample of Spanish banks.

Prepaid cards are instruments whereby card holders “pay early” and set aside funds in advance for future purchases of goods and services. The monetary value of the prepaid card resides either of the card or at a remote database. Prepaid cards can be generally delineated as either closed system or open system for example Master card or Visa. Closed system prepaid cards have been effective as a cash substitute for university campuses as well as for mass transit system and retailers.

Debit cards are essentially “pay-now” instruments linked to a checking account whereby transactions can happen either instantaneously using online (pin based) methods or in the near future with offline(signature based). Consumers typically have the choice of using online or offline methods and their selection often hinges on the respective benefits. Online debit allow the cardholder also to withdraw cash at the point of sale and offline provide floats.

2.4.4 Process innovation

The use of electronic transmission of bank to bank retail payment has exploded to the retail acceptance, online banking and check conversion in terms of intermediation. Statistical modeling has become central in the overall risk management processes at banks using portfolio stress testing and value at risk models of which is geared primarily to evaluating portfolio value in the face of significant changes in financial asset returns. Real time gross settlement system is a funds transfer mechanism where transfer of money takes place from one bank to another on a real time and gross basis. Real time means the transaction are processed as they are received. Settlement means the transactions are settled on one to one basis without batching with any other

transaction. RTGS system is primarily for large value transactions; as soon as transactions are remitted by the paying bank they are created.

2.4.5 Impact of financial Innovation on Financial Performance

The study according to Berger and Dick 2006 focuses on the fast mover advantage as it may be more probable in the banking industries than in other industries due to the importance of bank client relationship. Theories concerning fast mover advantages have typically evolved out of the Schumpeterian argument that new products and processes developed by a firm are protected from imitation for a certain period. A successful innovation therefore generates appropriate competitive position thus bestows on the firm a competitive advantage and superior performance. The imitation that occurs during the Schumpeterian process of creative destruction then generates the need for enterprises to produce still more innovation in order to maintain competitive advantage.

Consistent with the result of other studies that support the hypothesis that the fast mover advantage offers the enterprise better performance, the examination by Peffers and Santos 1995 of the introduction of ATMs by American banks demonstrated that the competitive advantage and performance that is associated with it were not realized by those who subsequently adopted the technology, Berger and Mester (2003). Price theory regards price as a mechanism that delivers fast mover advantages. On the other hand, establishing higher prices prior to the entry of imitators allows innovators to receive the cost of investing in innovations. On the other hand, this monopoly rents are temporary and are eroded once imitation appears. This is the classic monopoly argument upon which Van Horne (1985) relies to explain the performance of financial innovators. Berger 2003 argues that the relevant aspects of technological change include innovations that reduce cost related to the collection, storage, processing and transmission of information as well as innovation that transform the means by which customer's access bank services. Humphrey et al (2006) cite ATMs, telephone banking internet banking and e-money as being among the significant innovations affecting the banking distribution since then that influence banking performance significantly. In addition, client relation management systems, bank management technologies and various other technologies are among the major changes in internal banking systems that also have exercised a positive influence on banking performance and profitability. If the process of innovation continues and new technologies are introduced

overtime innovative banks can continue to earn high profits on various new and improved products.

Batiz-Lazo and Woldesenbet (2006) stipulated that the distinction between product innovation and process innovation is necessary as much as the adoption of each type of innovation has its own characteristics and has a different impact on banking performance. In their examination of the dynamic of financial innovation in the banking industry, they argue that product innovation have a market focus and an effectiveness driven while process innovation have an internal focus and are efficiency driven. Basically, product innovation are introduced to satisfy an external user or market need while process innovations are defined as new elements introduced into the firms production or into the services it provides.

2.5 Conclusions from literature review

This literature review highlights the impact of financial innovation strategies on financial performance in these challenging times of changing external environments. The impact of financial innovations can have both positive and negative effects on the financial performance. Commercial banks in Kenya should therefore adopt the relevant strategies for competitive advantage that help to increase profitability. Also, effectiveness of monetary transmission mechanism hinges on changing forms and character of financial diversity and depth of financial markets. Thus in this context the author contends that with an increasing role of the capital markets, investors have greater opinions to diversify their financing away from banks through the issue of bonds and equities. Therefore, such changes in the financial system impact on the monetary policies effectiveness by increasing or decreasing lags from changes in Central Bank policy rate to the cost of funds to businesses and household as well as relative returns of different asset classes for savers and investors. For example, greater reliance on alternative sources of financing by businesses and corporation may delay speed and magnitude of transmission of policy rates to the actual cost of financing. This is important especially if alternative sources of financing have significantly different funding structures not directly influenced by Central Bank's policy rate. This literature has made a great deal of progress. The subject of financial innovation and its impacts on financial performance remains one in which our intellectual maps show vast uncharted and potentially interesting lands to be explored.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methods and procedures that will be followed in conducting the research with the aim of evaluating the impact of financial innovation on financial performance of commercial banks in Kenya. The chapter is thus outlined into research design section 3.2, population section 3.3 sample sections 3.4, data collection section 3.5, data analysis section 3.6, data validity and reliability section 3.7.

3.2 Research design

This is a descriptive survey aimed at establishing the impacts of financial innovation on financial performance of commercial banks according to Mugenda and Mugenda ,(2004), a descriptive study is concerned with finding out ,what, where and how of a phenomenon.

3.3 Population

In line with subject matter of the study the target population of the study was all commercial banks in Kenya. These commercial banks were 44 in number by the end of (CBK, 2011). The accessible population was all commercial banks as at December 2010 and had operated uninterrupted for a period not less than 5 years that is January 1st 2006 to 31st December 2010.

3.4 Sample

The study sampled the population into 20 commercial banks because of limited time of research and convenience. Majority of the Kenyan commercial banks almost provide same product and service and also in a bid to save on cost. This was aided by convenience sampling as most major banks are closely located in same area with their branches spread across the country and beyond borders, thus it was convenient and economical to sample.

3.5 Data Collection

This study used both primary and secondary sources of data. Secondary data on financial innovations was found from the banks previous financial results and publications while primary data is gathered through the use of questionnaires. The use of questionnaires was chosen over others because of advantages such as; it's cheap, requires less effort since doesn't require effort from questioner as verbal or telephone surveys, and often have standardized answers that make it simple to compile data.

3.6 Data Analysis

The data collected was edited for accuracy, uniformity, consistency, and completeness: arranged to enable coding and tabulation before final analysis. Since questionnaire was a close ended with both qualitative and quantitative analysis techniques will be used. Qualitative data will be analyzed by categorizing and grouping thematic through content analysis to address the research question. Quantitative data will be analyzed through descriptive statistics such as measure of central tendency, generate relevant percentages, frequency counts, mode, median, and mean where applicable.

The Data was analyzed using the windows based Statistical Package for Social Sciences (SPSS) version 17. Descriptive statistics such as measure of central tendency generate relevant frequency distribution, percentages, mode, and median and mean where applicable to analyze the data. The study will also use multiple linear regressions to analyze data. The magnitude of sample coefficient of correlation indicates a weak or strong linear relationship. Data presentation was done using tables, pie charts, bar charts percentages and frequency tables and the results presented in percentages tables and figures.

Multiple linear regression is a flexible method of data analysis that may be appropriate whenever quantitative variable (the dependent) is to be examined in relationship to any other factors (expressed as independent or predictor variable). Relationship may be non linear. Independent variables may be quantitative or qualitative and one can examine the effects of a single variable or multiple variables with or without the effects of other variables taken into account (Cohen, Cohen, wet and Aiken, 2003).

Financial performance or increase in revenue cost (dependent variable) of commercial bank depends on technology, product, market and process (independent variables)

The multiple regression model equation is

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \alpha$$

Where,

Y =financial performance

β_0 =the regression coefficients

X_1 =technological

X_2 =product

X_3 =market

X_4 =process

α =Error term

3.7 Data validity and reliability

The data was gathered from respondents whose information would be treated with utmost confidentiality. The Relevance of the questionnaire will have to be subjected to an expert review in the related field of financial innovation in order to be valid in the data collection. Sampling validity also stem from the selected commercial banks which make a good presentation of the population which is the commercial banks in Kenya while the reliability test used Cranach's reliability test; to test reliability of factors extracted from dichotomous (that is, question with two possible answers) and multiple questionnaires (with a rating scale of: 1-poor, 5-excellent) the higher the score, the more reliable generated scale is, (Whalen, 2004).

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1 Introduction

This chapter presents the analysis and presentation of data collected from the administered questionnaires. 20 questionnaires in total were administered but 18 of them were completed representing a 90% response rate. The questionnaires contained questions that addressed the objectives of the study. The research sought to establish the impact of financial innovations on the financial performance of commercial banks in Kenya.

4.2 Data Presentation

The collected questionnaires were edited and cleaned for completeness in preparation for coding. Once the questionnaires were coded, they were entered into the Statistical Package for Social Sciences (SPSS) version 17 computer package for analysis.

The research was more quantitative and therefore majority of the questions were close-ended in nature. Both descriptive statistics and inferential statistics were run to determine the impact of financial innovations on the financial performance of commercial banks in Kenya.

4.2.1 Bank Branches

Respondents were required to indicate the number of branches their banks had opened. Majority (44.4%) of the respondents indicated that their banks had opened over 30 branches countrywide hence a wide network. The findings are as presented in Table 4.1 and Figure 4.1.

Table 4.1 Number of Bank Branches

Branches	Frequency	Percentage
0-10	4	22.2
11-20	5	27.8
21-30	1	5.6
31 and above	8	44.4
Total	18	100.0

Source: Research Data 2013

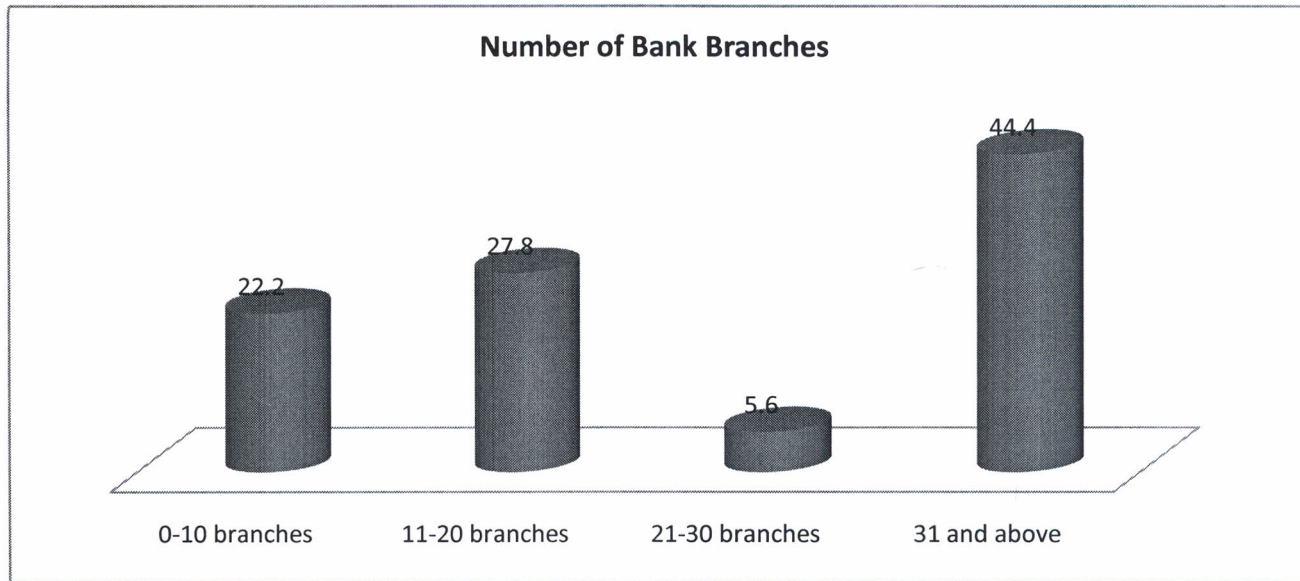


Figure 4.1

4.2.2 Number of ATMs

44.4% of the respondents indicated that their banks had put in place more than 30 ATMs countrywide hence a wide network in the country. The findings are as shown in Table 4.2 and pie chart in Figure 4.2.

Table 4.2 Number of ATMs

ATMs	Frequency	Percentage
0-10	7	38.9
11-20	2	11.1
21-30	1	5.6
31 and above	8	44.4
Total	18	100.0

Source: Research Data 2013

NUMBER OF ATMs

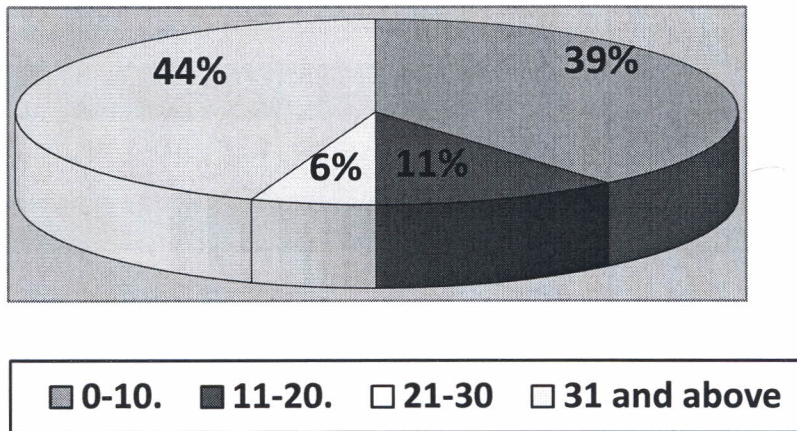


Figure 4.2

4.2.3 Banks Offering Credit Cards

Majority (66.7%) of the respondents were categorical that their banks offered credit cards while the remaining 33.3% of them were of the contrary opinion as shown in Table 4.3 and Figure 4.3.

Table 4.3 Banks Offering Credit Cards

Credit Cards	Frequency	Percentage
Yes	12	66.7
No	6	33.3
Total	18	100.0

Source: Research Data 2013

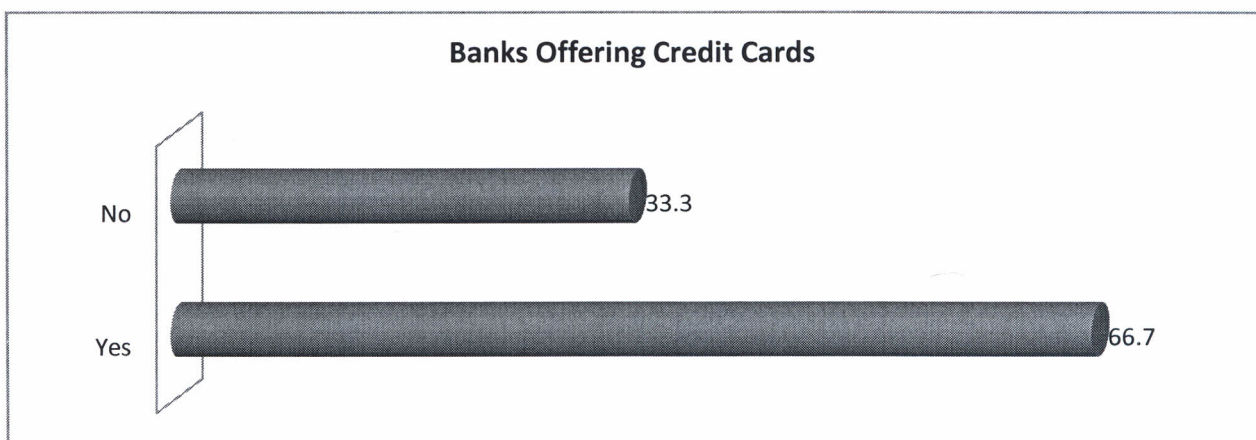


Figure 4.3

4.2.4 Financial Innovation Strategies

Respondents were further required to indicate the financial innovations their banks had adopted. The financial innovations were categorized into three groups namely: Product innovations, process innovations and institutional innovations. Product innovations ranged from credit cards, business club, unsecured loans, ATM cards and prepaid cards. Process innovations ranged from RTGS, mobile banking, internet banking and electronic funds transfer. Institutional innovations ranged from insurance services, credit rating bureaus, Islamic banking and telephone banking. The research findings revealed the major product innovation in a majority of commercial banks in Kenya was unsecured loans at 88.9% adoption followed by ATM cards and business clubs at 61.1% each. The major process innovations were RTGS and electronic funds transfer at 100% and 94.4% adoption respectively. Further, the major institutional innovation was creation of credit rating bureaus at 66.7% respectively. These findings are as presented in Table 4.4, 4.5 and 4.6.

Table 4.4 Product Innovations

Product Innovation	Frequency	Percentage
Credit Cards	10	55.6
Business Club	11	61.1
Unsecured Loans	16	88.9
ATM Cards	11	61.1
Prepaid Cards	8	44.5

Source: Research Data 2013

Table 4.5 Process Innovations

Process Innovation	Frequency	Percentage
RTGS	18	100.0
Mobile Banking	11	77.8
Internet Banking	13	72.2
Electronic Funds Transfer	19	94.4

Source: Research Data 2013

Table 4.6 Institutional Innovations

Institutional Innovation	Frequency	Percentage
Insurance services	11	61.1
Credit Rating Bureau	12	66.7
Islamic Banking	8	44.4
Telephone Banking	10	55.6

Source: Research Data 2013

4.2.5 Use of Financial Innovations in Bank Operations

Respondents were further required to rate the extent to which their banks used various financial innovations in their operations on a scale of 1-5 where 1- no extent and 5 – To a very great extent. The means ranged between 2.1667 to 4.7778 and standards deviations ranged between 0.42779 to 0.88648 as shown in Table 4.7. The means of between 2-3 indicated that most commercial banks in Kenya used the various financial innovations in their operations to a little extent and to a moderate extent. Means of 4 and above indicated that the specific financial innovations were used to a great extent by commercial banks in their operations. It was clear from the research findings that most commercial banks used RTGS and Electronic Funds Transfer to a great extent in their operations. However, Islamic banking and ATM deposits were used to a little extent in a majority of the banks. The high standard deviations registered i.e. approaching 1 indicated that there was greater disparity in the responses hence independence of responses.

Table 4.7 Means and Standard Deviations on Use of Financial Innovation

Financial Innovation	Mean	Std. Deviation
Mobile banking	3.7778	0.59247
RTGS	4.7778	0.54832
Internet banking	3.5556	0.61690
ATM deposits	2.6667	0.87867
Business Club	2.7778	0.69967
Credit cards	3.1667	0.88648
Unsecured loans	3.4118	0.87279
Insurance services	3.2667	0.62422
Islamic banking	2.1667	0.75734
Credit rating bureau	3.7059	0.61108
Electronic Funds Transfer	4.7778	0.42779

Source: Research Data 2013

4.2.6 Adoption of Financial Innovation in Improvement of Financial Performance of Commercial Banks

Respondents were further required to indicate their level of agreement as pertains to adoption of financial innovation as a very important aspect in the improvement of financial performance of commercial banks. 77.8% of the respondents strongly agreed that the adoption of financial innovation in commercial could help improve their financial performance as shown in Table 4.8 and Figure 4.4.

Table 4.8 Adoption of Financial Innovation

Adoption of Financial Innovation	Frequency	Percentage
Strongly disagree	2	11.1
Agree	2	11.1
Strongly agree	14	77.8
Total	18	100.0

Source: Research Data 2013

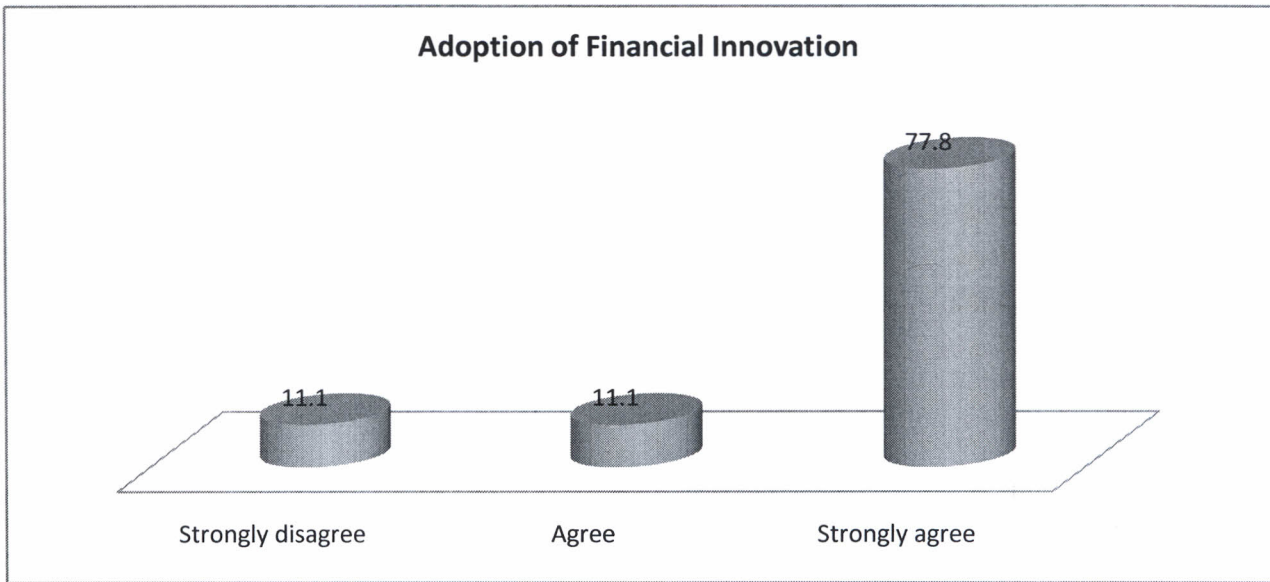


Figure 4.4

4.2.7 Financial Innovation and Improvement of Bank Products

55.6% of the respondents were of the opinion that financial innovation in commercial banks very highly improved the products offered by the banks as shown in Table 4.9 and Figure 4.5.

Table 4.9 Financial Innovation and Improvement of Bank Products

Financial Innovation and Improvement of Bank Products	Frequency	Percentage
Moderate	2	11.1
High	6	33.3
Very high	10	55.6
Total	18	100.0

Source: Research Data 2013

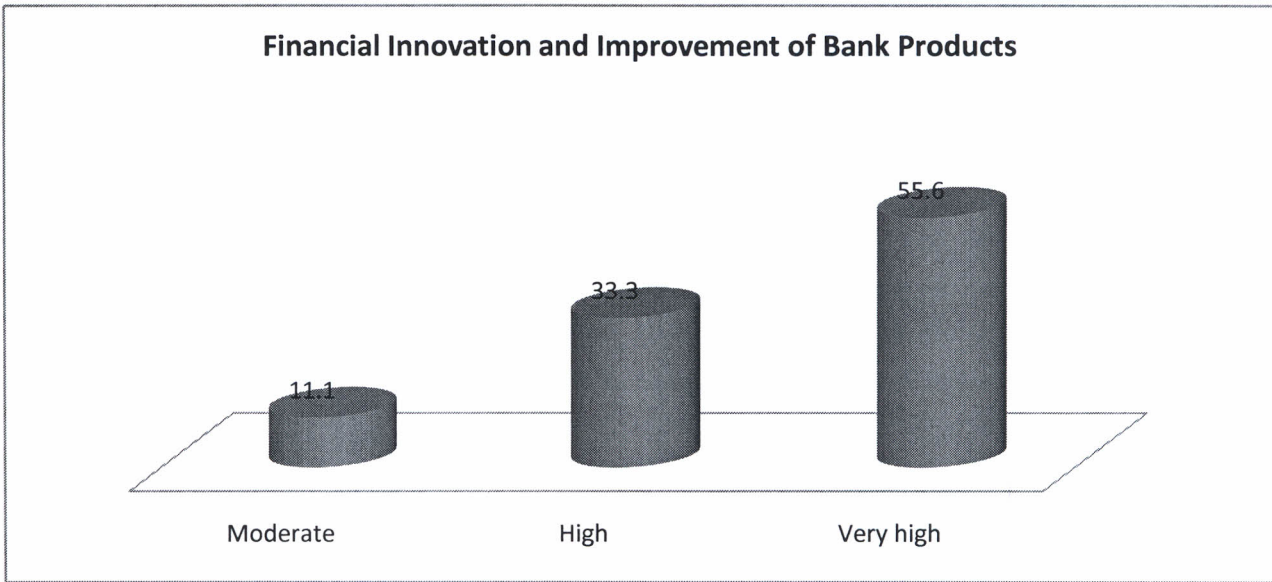


Figure 4.5

4.2.8 Financial Innovation and Financial Performance of Banks

Respondents were further required to indicate their level of agreement as pertains to financial innovation in relations to financial performance of commercial banks. 72.2% of the respondents strongly agreed to this aspect while the remaining 27.8% of them agreed as shown in Table 4.9 and Figure 4.6.

Table 4.10 Financial Innovation and Financial Performance of Banks

Financial Innovation and Financial Performance of Banks	Frequency	Percentage
Strongly agree	13	72.2
Agree	5	27.8
Total	18	100.0

Source: Research Data 2013

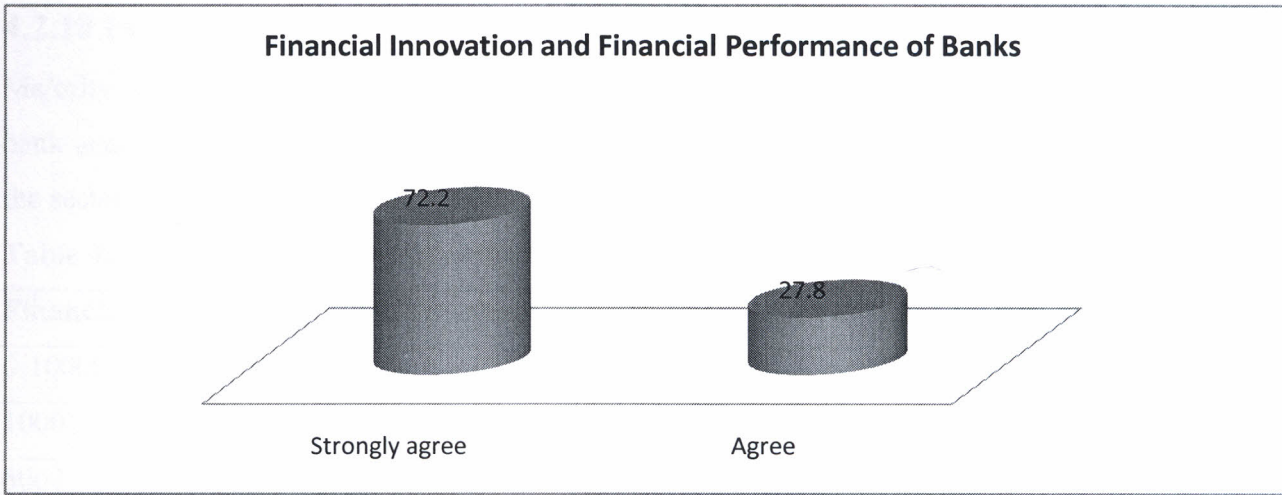


Figure 4.6

4.2.9 Effect of Financial Innovation on Financial Performance of Banks

Respondents were further required to rate the extent to which financial innovations in their banks affected their financial performance on a scale of 1-5 where 1- no extent and 5 – To a very great extent. The means ranged between 4.5556 – 4.7778 and standards deviations ranged between 0.73208 - 0.85559 as shown in Table 4.10. The Means of 4 and above indicated that the specific aspects of financial performance were affected by the adoption of financial innovations in commercial banks operations to a great extent. It was clear from the research findings that profitability, competitive advantage, service quality and efficiency were improved in that order as a result of adopting financial innovations in commercial banks operations. The high standard deviations registered i.e. approaching 1 indicated that there was greater disparity in the responses hence independence of responses.

Table 4.11 Means and Standard Deviations on Effect of Financial Innovations on Performance

Aspects	Mean	Std. Deviation
Profitability	4.7778	0.73208
Competitive advantage	4.7778	0.73208
Service quality	4.6111	0.77754
Efficiency	4.5556	0.85559

Source: Research Data 2013

4.2.10 Increase in Bank Accounts Opened

Majority (61.1%) of the respondents indicated that had been a notable increase in the number of bank accounts opened ranging between 10001-50,000 over the last five years hence growth in the sector. The findings are as represented in Table 4.11.

Table 4.12 Increase in Bank Accounts Opened

Financial Innovation and Improvement of Bank Products	Frequency	Percentage
0-10000	2	11.1
10001-50000	11	61.1
50001 and above	5	27.8
Total	18	100.0

Source: Research Data 2013

4.2.11 Measures of Financial Performance

Respondents Were further required to indicate the measures they used to determine financial performance ranging from return on equity, return on assets, return on investment, return on capital, return on sales, residual income, dividend yield, price earnings ratio, asset turnover and CAMELS. The research findings revealed that majority of the commercial banks in Kenya used ROE, ROA and ROI at 61.1% as measures of financial performance. The findings are as shown in Table 4.12. All the respondents further indicated that their banks periodically evaluated their financial performance.

Table 4.13 Measures of Financial Performance

Measure of Financial Performance	Frequency	Percentage
Return on Equity (ROE)	11	61.1
Return on Assets (ROA)	11	61.1
Return on Investment (ROI)	11	61.1
Return on Capital (ROC)	8	44.4
Return on Sales (ROS)	4	22.2
Residual Income (RI)	4	22.2
Dividend Yield	5	27.8
Price Earnings Ratio	3	16.7

Asset Turnover	6	33.3
CAMELS	4	22.25
All	5	27.8

Source: Research Data 2013

4.2.12 Satisfaction with Bank Financial Performance

50.0% of the respondents were of the opinion that the financial performance of their banks was very good. 44.4% was good and the remaining 5.6% of them indicated that it was average as shown in Table 4.13 and Figure 4.7.

Table 4.14 Satisfaction with Bank Financial Performance

Satisfaction	Frequency	Percentage
Average	1	5.6
Good	8	44.4
Very good	9	50.0
Total	18	100.0

Source: Research Data 2013

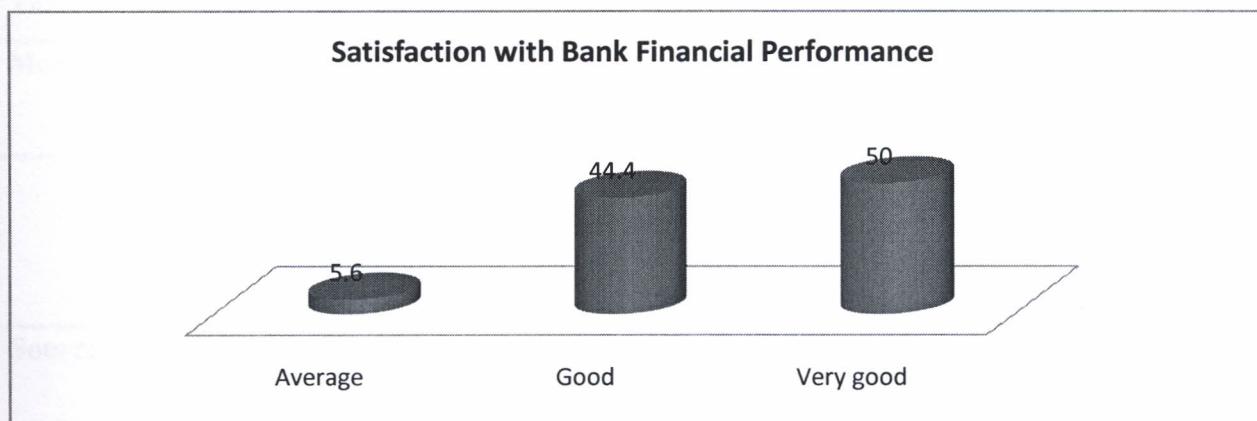


Figure 4.7

4.2.13 Regression Analysis between Financial Innovations and Financial Performance

The research study wanted to establish the relationship between financial innovations and the financial performance of commercial banks in Kenya. The research findings indicated that there was a very strong positive relationship ($R=0.717$) between the variables. The study also revealed that 51.4% of financial performance in commercial banks can be explained by investing in financial innovations. From this study it is evident that at 95% confidence level, the variables produce statistically significant values and can be relied on to explain financial performance in commercial banks. The findings are as shown in the tables 4.14, 4.15 and 4.2.16 below.

Table 4.15 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.717	.514	.417	1.96356

Source: Research Data 2013

Table 4.16 ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.518	11	.138	.746	.003
Residual	.185	1	.185		
Total	1.702	12			

Source: Research Data 2013

Table 4.17 Coefficients

Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std. Error	Beta		

(Constant)	1.068	.823		1.298	.203
Technological Innovations	.131	.138	.156	.947	.350
Product Innovations	.080	.198	.069	.403	.690
Market Innovations	.299	.232	.258	1.289	.206
Process Innovations	.148	.131	.192	1.123	.269

Source: Research Data 2011

From this study it was evident that at 95% confidence level, the variables together produce statistically significant values for this study (high t-values, $p < 0.05$). Positive effect was reported for all the independent variables ($\beta = .156$, $\beta = 0.069$, $\beta = 0.258$ and $\beta = 0.192$) for technological innovations, product innovations, market innovations and process innovations respectively.

The results of the regression equation below shows that for a 1- point increase in the financial innovations, financial performance of commercial banks is predicted to increase by 1.068, given that all the other factors are held constant. The equation for the regression model is expressed as:

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3$$

$$Y = 1.068 + 0.131X_1 + 0.080X_2 + 0.299X_3 + 0.148X_4$$

Where

Y = Financial Performance of Commercial Banks

X_1 = Technological innovations

X_2 = Product innovations

X_3 = Market innovations

X_4 = Process innovations

4.3 Summary and Interpretation of Findings

The research sought to establish the impact of financial innovation on the financial performance of commercial banks. The research revealed that financial innovations can also be categorized into technological, product, market and process innovations. The research findings further revealed that the major product innovation in a majority of commercial banks in Kenya was unsecured loans at 88.9% adoption followed by ATM cards and business clubs at 61.1% each while credit cards were averagely adopted by 55.6% and prepaid being the least at 44.5%. The major process innovations were RTGS and electronic funds transfer at 100% and 94.4% adoption respectively. In addition, mobile banking and internet banking, which are currently the most adopted strategy stood at 77.8% and 77.2% respectively as per the findings. Further, the major institutional innovation was creation of credit rating bureaus at 66.7% followed by insurance services at 61.1%, telephone banking 55.6% and Islamic banking being the least at 44.4%. Majority (66.7%) of the respondents were categorical that their banks offered credit cards while the remaining 33.3% of them were of the contrary opinion.

72.2% of the respondents strongly contended that the adoption of financial innovations in the operations of commercial banks helped improve their financial performance to a great extent. It was clear from the research findings that profitability, competitive advantage, service quality and efficiency were improved in that order as a result of adopting financial innovations in commercial banks operations. The regression analysis output revealed that there was a very strong positive relationship ($R= 0.717$) between the variables. The study also revealed that 51.4% of financial performance in commercial banks can be explained by investing in financial innovations. From this study it is evident that at 95% confidence level, the variables produce statistically significant values and can be relied on to explain financial performance in commercial banks in Kenya. Due to this relationship majority of the banks had adopted financial innovations in their operations.

The research findings further revealed that majority of the commercial banks in Kenya used ROE, ROA and ROI at 61.1% as a measures of financial performance. Further, return on capital (ROC) as a measure of financial performance was at 44.4% while ROS and RI were at 22.2%. Dividend yield was used at 27.8%, with Price earnings ratio, asset turnover and CAMELS at

16.7%, 33.3% and 22.25% respectively. From the findings, 27.8% of the banks used all measures in the determination of financial performance.

The study sought to find out the number of bank branches each bank had. 44.4% stated that they had 31 and above bank branches followed by 27.8% with a range between 11-20 branches while 22.2% had between 0-10 branches countywide. From the findings, it further revealed that 44.4% of the banks had 31 and above ATMs while 38.9% had below 10 ATMs.

The respondents were also asked whether they agreed that commercial banks were adopting financial innovations to improve their financial performance. 72.2 % strongly agreed to this aspect while the remaining 37.8% of agreed. None of them was of the contrary opinion. When asked to what extent the financial innovation improved the product of the banks; 55.6% were of the respondents were of the opinion that financial innovations very highly improved the products offered by the banks while none of the respondents indicated that they negligibly improved.

The researchers sought to find out from the respondents whether there had been an increase in number of bank accounts opened from the year 2005 to 2011. There was a positive response with 61.1% ranging between 10001 and 50000 accounts opened. 27.8% of them claimed to have an increase between 50001 and above while a low of 11.1% had below 10000 accounts opened.

It was clear from the research findings that most commercial banks used process innovations of RTGS and Electronic Funds Transfer to a very great extent in their operations with both having a mean of 4.7778. Mobile banking, internet banking, credit cards, unsecured loans, insurance services and credit rating bureau all ranged between 3.1667 to 3.7059. However, Islamic banking (market innovation), ATM deposits (technological innovation) and business clubs were used to a little extent in a majority of the banks with a mean of 2.1667, 2.6667 and 2.7778 respectively.

This study differs from other studies in that it focused on establishing the impact of financial innovations on the financial performance of commercial banks in Kenya. The focus on previous studies was mainly on a single category of innovation and their effects. Our study generalizes on the impact of all innovations and the adoption by the commercial banks. Consistent with the result of other studies that support the hypothesis that the fast mover advantage offers the enterprise better performance, the examination by Peffers and Santos 1995 of the introduction of

ATMs by American banks demonstrated that the competitive advantage and performance that is associated with it were not realized by those who subsequently adopted the technology, Berger and Mester (2003).

Berger 2003 argues that the relevant aspects of technological change include innovations that reduce cost related to the collection, storage, processing and transmission of information as well as innovation that transform the means by which customer's access bank services. Humphrey et al (2006) cite ATMs, telephone banking internet banking and e-money as being among the significant innovations affecting the banking distribution since then that influence banking performance significantly.

Berger and Dick (2006) also contend that a successful innovation generates appropriate competitive position thus bestows on the firm a competitive advantage and superior performance. The imitation that occurs during the Schumpeterian process of creative destruction then generates the need for enterprises to produce still more innovation in order to maintain competitive advantage.

Batiz-Lazo and Woldesenbet (2006) stipulated that the distinction between product innovation and process innovation is necessary as much as the adoption of each type of innovation has its own characteristics and has a different impact on banking performance. In their examination of the dynamic of financial innovation in the banking industry, they argue that product innovation have a market focus and an effectiveness driven while process innovation have an internal focus and are efficiency driven. Basically, product innovation are introduced to satisfy an external user or market need while process innovations are defined as new elements introduced into the firms production or into the services it provides.

Goddard et al (2007) added that client relation management systems, bank management technologies and various other technologies are among the major changes in internal banking systems that also have exercised a positive influence on banking performance and profitability. If the process of innovation continues and new technologies are introduced overtime innovative banks can continue to earn high profits on various new and improved products.

CHAPTER FIVE

SUMMARY, CONCLUSIONS & POLICY RECOMMENDATIONS

5.1 Summary

This study was conducted with the objective of establishing the impact of financial innovations on the financial performance of commercial banks in Kenya. 20 questionnaires in total were administered but 18 of them were completed representing a 90% response rate. The questionnaires contained questions that addressed the objectives of the study.

The research findings revealed that financial innovations could be categorized into technological, product, market and process innovations. The research findings further revealed that the major product innovation in a majority of commercial banks in Kenya was unsecured loans at 88.9% adoption followed by ATM cards and business clubs at 61.1% each. The major process innovations were RTGS and electronic funds transfer at 100% and 94.4% adoption respectively. Further, the major institutional innovation was creation of credit rating bureaus at 66.7% respectively.

72.2% of the respondents strongly contended that the adoption of financial innovations in the operations of commercial banks helped improve their financial performance to a great extent. It was clear from the research findings that profitability, competitive advantage, service quality and efficiency were improved in that order as a result of adopting financial innovations in commercial banks operations. The regression analysis output revealed that there was a very strong positive relationship ($R= 0.717$) between the variables. The study also revealed that 51.4% of financial performance in commercial banks can be explained by investing in financial innovations. From this study it is evident that at 95% confidence level, the variables produce statistically significant values and can be relied on to explain financial performance in commercial banks in Kenya. Due to this relationship majority of the banks had adopted financial innovations in their operations. The research findings further revealed that majority of the commercial banks in Kenya used ROE, ROA and ROI at 61.1% as a measures of financial performance.

It was clear from the research findings that most commercial banks used RTGS and Electronic Funds Transfer (process innovations) to a great extent in their operations. However, Islamic banking (market innovation) and ATM deposits (technological innovation) were used to a little extent in a majority of the banks.

5.2 Conclusions

The research findings revealed that financial innovations could be categorized into technological, product, market and process innovations. The research findings further revealed that the major product innovation in a majority of commercial banks in Kenya was unsecured loans, followed by ATM cards and business clubs. The major process innovations were RTGS and electronic funds transfer adoption. Further, the major institutional innovation was creation of credit rating bureaus.

From the study findings it can be concluded that adoption of financial innovations in the operations of commercial banks has a positive effect on their financial performance. This could be attributed to the fact that financial innovations help in improving the products and services offered by banks. This can be supported by the fact that financial innovations also increases banks' profitability, gives banks competitive advantage and increases service quality and efficiency. It was further noted that that there had been a notable increase in the number of bank accounts opened over a five year period. This could be attributable to the fact that technological innovations led to increased efficiency in account processing whereas market innovations led to increased market share.

Commercial banks in Kenya should therefore adopt the relevant strategies for competitive advantage that help to increase profitability. Also, effectiveness of monetary transmission mechanism hinges on changing forms and character of financial diversity and depth of financial markets. Therefore, such changes in the financial system impact on the monetary policies effectiveness by increasing or decreasing lags from changes in Central Bank policy rate to the cost of funds to businesses and household as well as relative returns of different asset classes for savers and investors. For example, greater reliance on alternative sources of financing by businesses and corporation may delay speed and magnitude of transmission of policy rates to the actual cost of financing. This is important especially if alternative sources of financing have

significantly different funding structures not directly influenced by Central Bank's policy rate. These conclusions are supported by the study findings as presented.

5.3 Policy Recommendations

With due regard to the ever increasing desire to have better financial performance by commercial banks, there is need to invest in financial innovations strategies so as to meet these expectations. This should be done in a manner in which all the stakeholders are happy with since not all of them prefer high investment in innovations. This therefore calls for embracing proper strategies which are acceptable, accessible, ethically sound, have a positive perceived impact, relevant, appropriate, innovative, efficient, sustainable and replicable.

This study also recommends that banks embrace change and embrace it fast. This is due to the fact that the importance of digital innovations in the banking sector cannot be overemphasized in that banks cannot do without them. For example, just between the time M-shwari was launched to date, they have lend to Kenyans and kept money for them to the tune of 6billion shillings(according to the Nation Newspaper in the first week of January 2013). These customers of course came from banks thus if banks don't do anything and do it fast, they might end up being the big losers.

The study further recommends that commercial banks should also strive to ensure improved innovation processes, new product introduction and conformance to regulations are used to influence profitability of the banks .This will help to tap into customers needs so well that new products generate their own source of marketing momentum. Banks should also ensure that the product development strategies can be effectively adopted if there are quality systems in place, there is good information flow, there is specialization and also if the management fully supports competitive strategies. Commercial banks should offer conducive environments which attract innovators to explore new innovations for them. This would include establishment of training centers for young innovators and offering scholarships to bright students to advance their studies in relevant fields.

Institutions like the Central Bank and Capital Markets Authority should identify niches in the sector and give their proper input and guidance. They should facilitate commercial banks to

obtain funding in the long term capital markets by disseminating relevant information to the sector on how this can be achieved to make possible good practices and benefits of financial innovations on financial performance of commercial banks.

5.4 Limitations of the study

The study was limited by scope to the thematic areas of financial innovations as they influence the financial performance of commercial banks in Kenya. Therefore the study did not investigate other thematic areas affecting financial performance of banks such as good corporate governance, training and benchmarking best practices from other commercial banks that have achieved excellence in financial performance.

Lack of cooperation this is undoubtedly the greatest challenge that was witnessed by the researchers. Respondents were naturally suspicious and uneasy when directed to cooperate in a study that they were not aware of its consequence. To further calm and set at ease the respondents, the researchers explained the nature of the study and its intended purpose and that it was purely an academic undertaking and that information divulged would be held in confidentiality by the researchers.

The data collection was by use of questionnaires for a duration of two weeks which were on a drop and pick basis. There was poor time management from the respondents in handing back the full filled questionnaires. Majority of them claimed to be busy on other important bank schedules thus limiting adequate and proper time for data analysis. Inaccessibility of the Operations manager and head of department of finance manager was a problem while others delegated the questionnaire to their juniors and assistants hence interfering with the quality of their response.

5.5 Suggestions for Future Research

Arising from this study, the following directions for future research in finance are as follows: First, this study focused on the Commercial Banks in Kenya and therefore, generalizations cannot adequately extend to other Non-Commercial Financial Institutions in Kenya. Future research should therefore focus on the entire financial and non-financial institutions both in Kenya and the East African Community.

This study majorly concentrated on financial performance of banks between the period of 2005 and 2011. This period could have experienced differing economic conditions like high economic growth which influenced investor confidence thus having an impact on financial performance. Different periods with varying economic conditions should be studied. Hence the research suggest further research should be done from 1970 to date on the effects of financial innovations on the financial performance of commercial banks.

This study focused on the commercial banks. The findings could be different if firms from other sectors are considered for study. This may be attributed to the fact that the different sectors of the economy are affected differently by various economic factors which include inflation, interest rates, employment level which are not determined in our study. This is an area that should be looked at in subsequent studies. It would be interesting to execute a qualitative research in order to establish the impact of financial innovations and financial performance of both public and private institutions so as to determine whether they are dependent or independent.

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APPENDICES

LETTER TO THE RESPONDENTS

UNIVERSITY OF NAIROBI

SCHOOL OF BUSINESS

PO.BOX 30197-00100

NAIROBI

DATED.....

Dear Sir/Madam

**RE: THE IMPACT OF FINANCIAL INNOVATION ON THE FINANCIAL
PERFORMANCE OF COMMERCIAL BANKS IN KENYA**

Currently we are undergraduate students undertaking Bachelor of Commerce at the University of Nairobi, School of Business. We are carrying out a research on “The impact of financial innovation on financial performance of Commercial banks in Kenya.”

We therefore kindly request you to provide information by responding to the question in the questionnaire attached. The information required is strictly for academic purposes and will be treated in the strictest confidentiality.

The result of the report will be availed to you upon request. We will appreciate your co-operation in this academic exercise. Thank you in advance.

Yours faithfully,

Questionnaire

A. Background Information

1) Name of the Bank.....Your position.....

B. Bank Information

2) How many bank branches does the bank have?

0-10 11-20 21-30 31 and more

3) How many ATMs does the bank have?

0-10 11-20 21-30 31 and more

4) Does your bank offer credit cards?

YES NO

5) What financial innovation strategies have been adopted by your institution

	Product innovation innovation	process innovation	Institutional
I. Credit cards	<input type="checkbox"/>	RTGS <input type="checkbox"/>	Insurance services <input type="checkbox"/>
II. Business club	<input type="checkbox"/>	Mobile Banking <input type="checkbox"/>	Credit Rating Bureau <input type="checkbox"/>
III. Unsecured loans	<input type="checkbox"/>	Internet banking <input type="checkbox"/>	Islamic Banking <input type="checkbox"/>
IV. ATM Cards	<input type="checkbox"/>	Electronic Funds Transfer <input type="checkbox"/>	Telephone Banking <input type="checkbox"/>
V. Prepaid Cards	<input type="checkbox"/>		

6) To what extent does this bank make use of the following financial innovation in its operations? Use scale 1 to 5 where 1 is to no extent. 5 to a very great extent

Financial Innovation	1	2	3	4	5
Mobile Banking					

RTGS					
Internet Banking					
ATM deposits					
Business Club					
Credit cards					
Unsecured loans					
Insurance Services					
Islamic Banking					
Credit rating Bureau					
Electronic Funds Transfer(EFT)					

- 7) Would you agree that adoption of financial innovation is very important in the improvement of financial performance of commercial banks?
 Strongly disagree Disagree Agree Strongly agree
- 8) To What extent has financial innovation improved the products of the bank?
 Negligible Low Moderate High Very high
- 9) Do you agree that commercial banks are adopting financial innovation to improve their financial performance?
 Strongly agree Agree Disagree strongly disagree
- 10) To what extent do the financial innovations affect financial performance of the bank in the following aspects? Use scale 1 to 5 where 1 is to no extent. 5 to a very great extent

Aspects	1	2	3	4	5
Profitability					
Competitive advantage					
Service quality					
Efficiency					

11) Has there been an increase in the number on banks accounts opened from 2005 to 2011?

0-10000

10001-50000

50001 and above

12) Which of the following measures does your institution use to determine financial performance?

Return on Equity (ROE)

Return on Assets (ROA)

Return on Investments (ROI)

Return on capital (ROC)

Return on Sales (ROS)

Residual Income (RI)

Dividend Yield

Price earnings ratio

Asset turnover

CAMELS

All

13. Does Your bank evaluates performance periodically?

YES

NO

14. What is the level of client satisfaction with your performance?

Average

Good

Very good

C. General Information

1-Not at all 2-Less extend 3-Moderate extend 4-Large extend 5-Very large extend

	1	2	3	4	5
Have ATMs improved commercial banks revenue In Kenya?					
Have commercial banks in Kenya profit from financial innovations?					
To what extend has credit /debit card being used in Kenya?					
Has the risk of innovation in commercial banks in Kenya contributed to loss reporting?					
Can Kenya commercial bank survive without financial innovation?					
Does the cost of financial innovation justify the benefit in term of bank revenue?					

**LIST OF
COMMERCIAL BANKS
IN KENYA**

1. Africa Banking Corporation Ltd.
2. Bank of Africa Kenya Ltd.
3. Bank of Baroda (K) Ltd.
4. Bank of India
5. Barclays Bank of Kenya Ltd.
6. CFC Stanbic Bank Ltd.
7. Charterhouse Bank Ltd.
8. Chase Bank (K) Ltd.
9. Citibank N.A Kenya
10. Commercial Bank of Africa Ltd.
11. Consolidated Bank of Kenya Ltd.
12. Cooperative Bank of Kenya Ltd.
13. Credit Bank Ltd.
14. Development Bank of Kenya Ltd.
15. Diamond Trust Bank Ltd.
16. Dubai Bank Kenya Ltd.
17. Ecobank Ltd.
18. Equatorial Commercial Bank Ltd.
19. Equity Bank Ltd.
20. Family Bank Limited
21. Fidelity Commercial Bank Ltd.
22. Fina Bank Ltd.
23. First Community Bank Ltd.
24. Giro Commercial Bank Ltd.
25. Guardian Bank Ltd.
26. Gulf African Bank Limited
27. Habib Bank Ltd.
28. Habib Bank AG Zurich
29. I&M Bank Ltd.
30. Imperial Bank Kenya Ltd.
31. Jamii Bora Bank Limited
32. Kenya Commercial Bank Ltd.
33. K-Rep bank Ltd.
34. Middle East bank (K) Ltd.
35. National Bank of Kenya Ltd.
36. NIC Bank Ltd.
37. Oriental Commercial bank Ltd.
38. Paramount Universal Bank Ltd.
39. Prime bank (K) Ltd.
40. Standard chartered Bank Kenya Ltd.
41. Trans National Bank Kenya Ltd.
42. UBA Kenya bank Ltd.
43. Victoria Commercial bank Ltd.