EFFECTS OF INNOVATION ON FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA

BY

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DECLARATION

DECLARATION BY STUDENT

I **James Kyalo Munywoki** the undersigned declare that this proposal is my original work and it has never been submitted to any other college or institution of higher learning for award of any academic grade.

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DECLARATION BY SUPERVISOR

This research work has been submitted for examination with my approval as the supervisor.

Name: Mr. Ng'ang'a

Sign: ----------Date: ----------

For and on behalf of University of Nairobi

DEDICATION

This thesis is dedicated to my spouse Catherine for her love, backing and inspiration throughout the entire period of the course. Additional dedication goes to my parents for their sacrifice in educating me and for coaching me the discipline and importance of hard work from a tender age. I also dedicate to my children. This thesis will be an incentive for hard work when they become of age.

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TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ABBREVIATIONS AND ACRONYMS

ATMs	Automated Teller Machines
CBK	Central Bank of Kenya
CRB	Credit Reference Bureaus
EFT	Electronic Funds Transfer
EU	European Union
GDP	Gross Domestic Product
ICT	Information communication Technology
MFBs	Microfinance Banks
MFC	Mortgage Finance Company
MRP	Money Remittance Provide (MRP)
NPLs	Non-performing Loans
OECD	Organisation of Economic Commission for Development
POS	Point of Sale
R & D	Research and Development
ROA	Return on Assets
ROE	Return on Equity
USA	United States of America

ABSTRACT

This research studied innovations in the commercial banks in Kenya. The study focused on innovations and their impact on commercial banks' key financial performance indicators namely: return on assets, profitability, and total income. The overall objective of this research project was to determine the effect of innovations on financial performance of Kenyan commercial banks. The research adopted a descriptive survey design with questionnaire being the basic tool for collection of primary data. Twenty conveniently selected Kenyan commercial banks formed the target study units for this research paper. The sample of the study with reference to respondents comprised of management only and out of the two hundred and fifty four questionnaires administered, 82% was attained as the response rate.

Statistical Package of Social Sciences (SPSS) software was used for statistical data analysis. The results indicated that the effect of bank innovations on profitability, return on assets, and total income in Kenyan commercial banks is statistically significant. This research did not exhaust bank innovations hence gave a recommendation for further study to cover innovations like securitization, credit guarantees and agency banking and their impact on financial performance in banking institutions.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

One way of promoting growth and competitive advantage is to adopt practices that encourage innovation in the different sections of the organization. Innovation is among the important tools of a firm development tactics to penetrate fresh markets, expand the current market share as well as offer the business a competitive advantage. In this case, innovations form part of the organization's strategic direction to increase market share and promote brand loyalty in a competitive business environment (Hill et al, 2001; Kuratko et al., 2005).

According to Therrien et al. (2011) innovation refers to a multi-staged process that involves developing new goods, sourcing fresh markets, designing novel production technology as well as firm structural guidelines. Innovation at organizational level involves its willingness and drive to implement new ideas and technologies in the new product development process from ideation to launch (Rubera and Kirca, 2012).

According to the modern information economy, investing in intellectual assets is regarded as an advanced and important tactical component towards sustaining industry progress, productivity as well as effectiveness (Berry, 2000). In reference to firms under banking and telecommunication sector, these operate in markets full of competition where innovation is a basic tool needed to survive. The success or otherwise of any discerning organization in this world of deregulated economies and competitive market depends largely on its ability to strategically outwit her competitors. Outwitting competitors is informed by ability to deliver offering better than competitors in the market and this also

depend on the ability to continually improve on the quality of goods and services being offered.

1.1.1 Innovation Types

There are different types of innovation that have been adopted by different organisations with the objective of enhancing efficiency and improving their performance. These innovation types include but not limited to product, process, organizational and market innovations.

A product innovation is the bringing in of a fresh or considerably upgraded product in relation to its features or proposed usage. This comprises substantial enhancements in technological provisions, product constituents, integrated software and consumer friendly as well as incorporating additional useful features.

Process innovations involve adoption of enhanced or novel manufacturing technologies that help the firm to meet customer demands while remaining competitive in the business environment. Process innovations can help the organisation in the achievement of its key performance indicators that include but not limited to reduced operational costs, improved product quality while meeting the customer demands (OECD Oslo Manual, 2005).

Marketing innovations involve adoption of fresh marketing techniques and methods that are geared towards maintaining customer relationship through clear pricing strategies and product promotions (OECD Oslo Manual, 2005).

Organizational innovation entails how organisations handle work procedures for example client relationships both internally as well as externally in ways that promote competitive advantage. Organizational innovations help firms to deepen their employee engagement

levels leading improved productivity and reduced administrative costs (OECD Oslo Manual, 2005).

1.1.2 Financial Performance

Financial performance measures the overall financial health of an organization and its ability to create value to its shareholders. Some of the financial performance indicators include but not limited to return on equity, revenue from operations, after tax profits, operating income, return on assets and cash flows. Financial services industry performance revolves around a combination of margin growth rates against set budgets, financial ratios analysis, and comparison with similar firms in the same industry (Ahmad et al, 2011). Basically, the modern literature on commercial banks performance defines the goal of lending institutions to be that of a firm getting satisfactory returns with minimal risks taken to receive such returns (Alam et al, 2011). The common conventional link between risk and return outlines that; high risk investments should attract high rates of return. In this regard, it has been a tradition to evaluate bank performance using risk and return.

1.1.3 The Kenyan Banking Sector

The Kenyan financial system is well established with an efficient banking system and an established stock exchange. By the 31st of December 2013, the financial services industry consisted of Central Bank of Kenya (the regulator), forty three commercial banking institutions as well as a single mortgage lender (CBK, 2013).

Kenya's banking sector moved towards greater inclusiveness, efficiency and stability in 2013 as envisaged in Kenya's Vision 2030. Key developments in the sector during the year included the following: - Increased convergence of banking and mobile phone platforms as banks explored more convenient and cost effective channels of banking, the proportion of

Kenyans with access to formal financial services increased to 67% in 2013 from 41% in 2009 impressive increase in the volumes of banking business transacted through agents by both commercial banks and microfinance banks, and hiked interest in the Kenyan banking industry by international banking brands as demonstrated by the approval of several foreign lending institutions to operate representative offices in Kenya, and continued expression of interest by other international players. The use of technology continues to enhance commercial banks efficiency in offering financial services. This is evidenced by the increase in the number of clients being attended to by a bank staff (CBK, 2013).

1.2 Statement of the problem

The worldwide rivalry which got tougher after 1980's pushed businesses to pay attention to their strategies mostly innovations (Kuratko and Hodgetts, 1998). Currently, guided by the hard-hitting international competitive business environment, corporate entities get to review as well as employ their innovative tactics with the key objective of attaining a competitive edge (Hult et al., 2003).

According to Mabrouk et.al, 2010, despite the evident impacts of the different innovation types on the business performance of financial institutions, these impacts are insufficiently tested. Additionally, there is imperfect information about the motivation for innovation. Empirical findings from other researches relating innovation and business performance have been found inconclusive (Bonn, 2000). Other studies relating innovations and bank's performance have yielded varied results (Pooja and Singh, 2009: Franscesa and Claeys, 2010; Batiz-Lazo and Woldesenbet, 2006; Mwania and Muganda, 2011).

Although studies have been carried out on the contribution of financial innovation to the effectiveness of the monetary policy; few studies have sought to relate financial innovation to financial performance in the banking sector. Several prevailing researches likewise assume a basic methodology to the innovation-performance association failing to put into consideration the antecedents to innovation internal as well as external to the banking institution, the sum of which might impact this association. Innovation studies have been based on the financial markets with little emphasis on the banking sector. This research paper intended to fill the research gap by answering the question: What are the effects of innovations on financial performance of commercial banks in Kenya?

1.3 Objectives of the Study

1.3.1 General Objective

The overall aim of this research was to determine the effects of innovations on financial performance of commercial banks in Kenya.

1.3.2 Specific Objectives

This research was guided by the below objectives:-

(i) To find out the relationship between product innovations and financial performance of Kenyan commercial banks.

(ii) To find out the relationship between process innovations on financial performance of Kenyan commercial banks.

(iii) To find out the association between organizational/marketing innovations and financial performance of Kenyan commercial banks.

(iv) To establish the challenges faced by commercial banks in implementing innovation decisions.

1.4 Significance of the Study

The outcomes of this research paper remain important to the following stakeholders namely:-

i) Managers of financial institutions- the study will help bring out the relationship between innovation types and firms' performance hence guide key decision making by leaders in the financial services industry.

ii) Academicians-the findings of this paper are very useful to scholars, as it provides insights into areas of future research.

iii) Researchers-These findings provide useful information with suggestions of related research areas.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section contains the literature relating with this area of research. It reviews literature from other scholars who have contacted their study in similar study area. The particular areas of focus are the theoretical and empirical review of the existing literature and the conceptual framework. It identifies the association of innovations with organizational performance.

2.2 Theoretical Review

Innovation relates to all business activities geared towards the adoption of goods and/or services that are technically new or value-added (OECD/Eurostat, 1997 p. 39). Therefore, innovations encompass novel ideas that impact the pattern of economic agents in a different manner. Implementation of novel equipment, human resource as well as enhancements in the manufacturing techniques increases organizational effectiveness while facilitating manufacturing at reduced costs than the competition. Likewise, introduction of new goods offers customers with new products and services leading to growth of organizations in additional other market sectors (OECD/Eurostat, 1997 p. 31). Conclusively, inventions allow businesses to distinguish themselves with the competition (through different goods, methods, overheads as well as institutional advancements).

The old concept of the organizational behaviour assumes that inventions do provide a temporary influence on company's performance as the new technology will quickly be diffused and copied by competitors. Therefore, eventually all businesses will congregate to a steady-state balance. Nevertheless, is has been proven that some organizations in

different sectors and different institutional set ups sustaining higher performance than their opponents for a significant duration, regardless of the measures of firm performance put into consideration (Klomp, et al., 2001; Loof, et al., 2002; Kemp, et al., 2003). These conclusions are similar to the conceptualizations existing in separate schools of thought, mostly evolutionist, Schumpeterian as well as endogenous growth theory. In reference to Schumpeter's thesis of creative destruction, the development of different products, innovation of production processes, penetration to new markets, innovative ways to get different supply sources coupled with organizational adjustments are fundamentals within the organization which frequently cause demolition to the prevailing monetary structures with subsequent substitution with different arrangements. It is argued that a firms' adoption of innovation necessitates the buildup of information and the sufficient fiscal strength; therefore the sole trader cannot sustain being a key source of invention. This is tasked more to large corporations and their Research & Development laboratories which have sufficient human and financial capitals.. Klette, et al., 2000 established the multi-stage concept of organizational behavior which claims that the progress of an enterprise is measured by the value as well as pricing of the companys' products and its rivals' products adding that the value of its goods can be enhanced by invention. Nevertheless, innovation strength is suggested to be non-related to the size of the organization. Otherwise, this is associated with firms' profit margin which on the other hand relates to firm ability to distinguish its products with those of the competitors. The model further pinpoints some industry features as the determinants of Research & Development intensity since the companies in sectors with greater demand for high quality products and additional innovative prospects incline towards experiencing higher and intensified Research & Development. Recently, these

insights on innovation process have been integrated in several papers via the multi-stage concept of invention process (Crepon, et al., 1998; Loof, et al., 2002; 2006). Here, innovation process is covered from the decision to innovate by the firm through its performance.

2.2.1 Theories of Innovation

According to different researchers, innovation is elaborated by numerous theories namely; constraint-induced innovation theory, circumvention innovation theory, regulation innovation theory, transaction cost innovation theory and location theory.

Silber (1983) introduced the constraint-induced invention model. The model outlines drive to maximize profits by financial institutions as the main motivation of financial innovation. Some limitations (majorly external handicaps for example policy as well as internal handicaps such as organizational management) do exist in the endeavor to maximize profits. These restrictions provide stability in the management of financial institutions but also interfere with the efficiency of these organizations. Therefore, financial institutions endeavor to eliminate them.

Kane (1981) invented circumvention innovation theory. His postulation indicated that several aspects of government guidelines, bearing similar element of implicit duty, humiliate outcomes of profitability pursued by firms. In this regard, both market and regulation invention ought to be seen as part of the constant conflicting process in relation to self-regulating, political versus economic forces. Due to the uniqueness of the financial services industry, stricter regulations are imposed. Institutions rendering financial services deal with challenges such as decrease in profits as well as letdown by management

prompted by government restrictions hence achieving the least possible losses. Thus, invention is regularly brought about by desire to make profits as well as circumvent government rules. This model from Kane is considered not unrealistic. The theory evaluated the cause of innovation.

Regulation invention theory was introduced by Scylla et al (1982).This theory describes inventions based on economic growth history. This model postulates invention and social regulation to be nearly related adding that economic regulation is influenced through regulatory changes. According to Scylla et al, it is challenging to have room for innovation in the planned economy with pure free economy and tight regulation. Hence, any adjustment caused by reforms in regulation in the financial structure can be termed as financial innovation. The interaction between government and the market eventually creates the spiral growth process, described as, "control-innovate, controls again-innovates again". This same model is considered to have seen the expansion of the scope of innovation with government activity being viewed to possess key stimulus to innovation. Financial control constrains innovation, and therefore rules and regulations that are considered the sign of financial control ought to be the direction of financial innovation and reform.

Hicks & Niehans (1983) are the ones who discovered the transaction cost innovation theory. Their argument is that, the foremost reason of innovating is to decrease the cost of transaction. Actually, innovation is a reaction to the improvement in technical know-how that initiated reduction in cost of transaction. A decrease in cost of transaction is likely to motivate financial invention as well as improve financial services. Transaction cost model is an approach for the explanation of institutions, considering the relative merits of

conducting transactions within the firm boundaries in contrast to (inter-firm) market transactions (Black, 2002). In transaction cost theory, the unit of the analysis is the unit of activity – the transaction, with its participants. Hence, it is congruent with this study's unit of analysis. According to Shelanski and Klein (1995) transaction cost theory's relational branch is particularly relevant as it aims to describe the way trading partners make choice from a variety of feasible institutional options. Within a context of open innovation, firms increasingly transfer technologies across their own firm boundaries. Therefore, they need to choose transaction partners.

Desai & Low (1987) described Location Theory as an advancement of the financial innovation microscopic economic model. They used this theory to check the loophole within the range of attainable product in fiscal market, a sign of possible chance to invent as well as promote a new product.

2.2.2 Determinants of Financial Performance

Firm performance is a multidimensional concept with parameters related to departments like marketing, production or finance (Sohn et al., 2007), or even consequential for example those relating to profit and growth (Wolff and Pett, 2006). Firm performance can be measured either using subjective or objective pointers (Harris, 2001) .Several firm performance indicators exist including Total Income, profitability, efficiency in production, return on assets among others. Similarly, the size of a firm can also play a role in its performance.

The rise in rivalry in both international and national lending markets, the changeover to monetary unions as well the innovations in technology herald main adjustments within the

lending space challenging every bank to target suitable arrangements so as to get into fresh competitive business environment. Aburime (2009) studied the efficiency of Nigerian banks with respect to their political affiliation. The study found that political factors were a major determinant of performance of Nigerian banks.

Profit after tax has been extensively employed as a measure of performance in banks. Several indicators of bank performance have been used by researchers namely: bank's age, capitalization of the bank, market penetration, concentration in the market, loan to deposit ratio, portfolio composition of the bank among others (Athanasoglou et al, 2008). Financial performance of banks is approached in terms of both internal and external determinants. The internal determinants also referred to as bank-specific or micro determinants of performance are sourced from the bank accounts (P & L accounts and/or income statement). The external determinants do not relate to management of the bank rather replicate the legitimate and fiscal environment impacting operation as well as performance of banks. Several variables have been suggested to explain both categories, in relation to the nature and objective of every study (Alam et al, 2011). Internal determinants of bank performance use variables like bank size, risk and expenditure management, capital, human resource and bank innovativeness. External determinants of bank profitability include factors like rates of interest, inflation rate, cyclical output as well as variables representing characteristics of the market (Alam et al, 2011). The latter denotes bank's ownership status, market concentration and industry size. This research related innovation types and financial performance and sought to find whether the two variables are related.

2.3 Empirical Review

Many of the studies have established that innovation strategies vary significantly across businesses. According to Weiss (2003), a number of empirical studies on innovation have been directed towards one innovation category, product or process. Alternatively, the empirical research studied this subject in an expansive way, with no specification on the innovation type under scrutiny. Additionally, there has been more concentration on comparison of the implementation patterns of product and process innovations across industries than analysis at the level of the firm of similar patterns (Damanpour and Gopalakrishnan, 2001).

Numerous empirical studies back up the theoretical literature by showing that innovation promotes growth as well as productivity. According to Cainelli et al. (2006), investing in ICT influences growth and output. The research by Koellinger (2008) surveys the correlation between innovation in internet-based technologies and performance of the firm. The outcomes indicate these categories of invention, whether Internet supported or non-Internet supported product or process inventions, present positive influence on employment opportunities as well as turnover. Moreover, firms using non-Internet-based innovations have lower chances of growth in comparison with those applying Internet-enabled innovations.

A study by Kamau (2009) on the efficiency in the Banking Sector indicated that banks need to be more innovative in their product and service offering to increase their share in terms of the number of consumers. The demand for financial services in Africa is expected to be on the rise in the future and even though banks with a strong pan-African existence have an added advantage, they will encounter intensified rivalry both from traditional competitors

as well as from new and innovative methods of rendering financial services (Kamau, 2009). Through innovation of new products and services, banks have broadened their presence and subsequently their financial performance. Success in several banks has been linked to differentiation and the persistent focus on delivery of service which is inclusive of access to financial services. Many banks have realized that customers with low level income need to be handled with a difference; hence products and processes are designed appropriately, with no compromise on operating performance (Kihumba, 2008). Hauner & Peiris (2005) highlight some of the major innovations impacting the banking distribution system that affect the performance of banks significantly as Automated Teller Machines, Internet banking, mobile banking as well as e-money. According to Boot & Thakor (2007), bank management technologies, customer relationship management systems as well as many other technologies form part of the key adjustments in internal banking systems which have positively impacted on the fiscal performance of lending institutions.

According to Griffith et al. (2006), an examination on the effect of innovations on production using a comparison across countries namely US, Germany and France led to diversified outcomes with reference to different innovation types. In many countries, product innovation results into output advantages. Cassiman et al. (2010) indicates positive impact of exports on productivity identified in the empirical studies is related to the innovation decisions of the firm. Their studies on Spanish manufacturing firms explain firm indication that product innovation increases productivity of the firm significantly, unlike process innovation. Hence out of product innovation, small enterprises with no export activities become tend to gain entry into the export market. This is in accordance with the theoretical explanation provided by Melitz (2003) model.

Gopalakrishnan (2001) detected positive relationship between implementation of product innovations and implementation of process innovations, associated great performance levels to businesses executing strategies of innovation that mix new product and process ideas as opposed to enterprises with simplistic innovation strategies. Reichstein and Salter (2006) proved a significant positive association between process innovation and the sales portion generated from fresh products, demonstrating the presence of complementarity between major product inventions and process inventions. Additionally, they also discovered a positive association between incremental process invention and product invention. Organizational innovations provide a supportive factor to other types of innovations by enhancing value and effectiveness of work, improve information capabilities as well as grow the capacity of a business to absorb as well as practice fresh skills and technological ideas (Lam, 2004).

From an introductory research, Svandven and Smith (2000) demonstrated the existence of a lag between innovations and firm profitability. Therefore as much as innovative enterprises may have better growth rates in relation to market share, hiring capabilities, assets, production output among others; this is not reflected in terms of firm profitability.

2.4 Conceptual Framework

The conceptual framework has been applied in research to sketch likely ways of action or even to exhibit an ultimate tactic to a thought or idea (Mugenda and Mugenda, 2003). The conceptual framework outlined below shows the innovation types on firm's performance in the banking sector. A general conceptualization diagram as shown below illustrates that firm's performance is a dependent variable and innovation types are the independent

variables while the government policy has a controlling impact on the two (dependent and independent) variables.

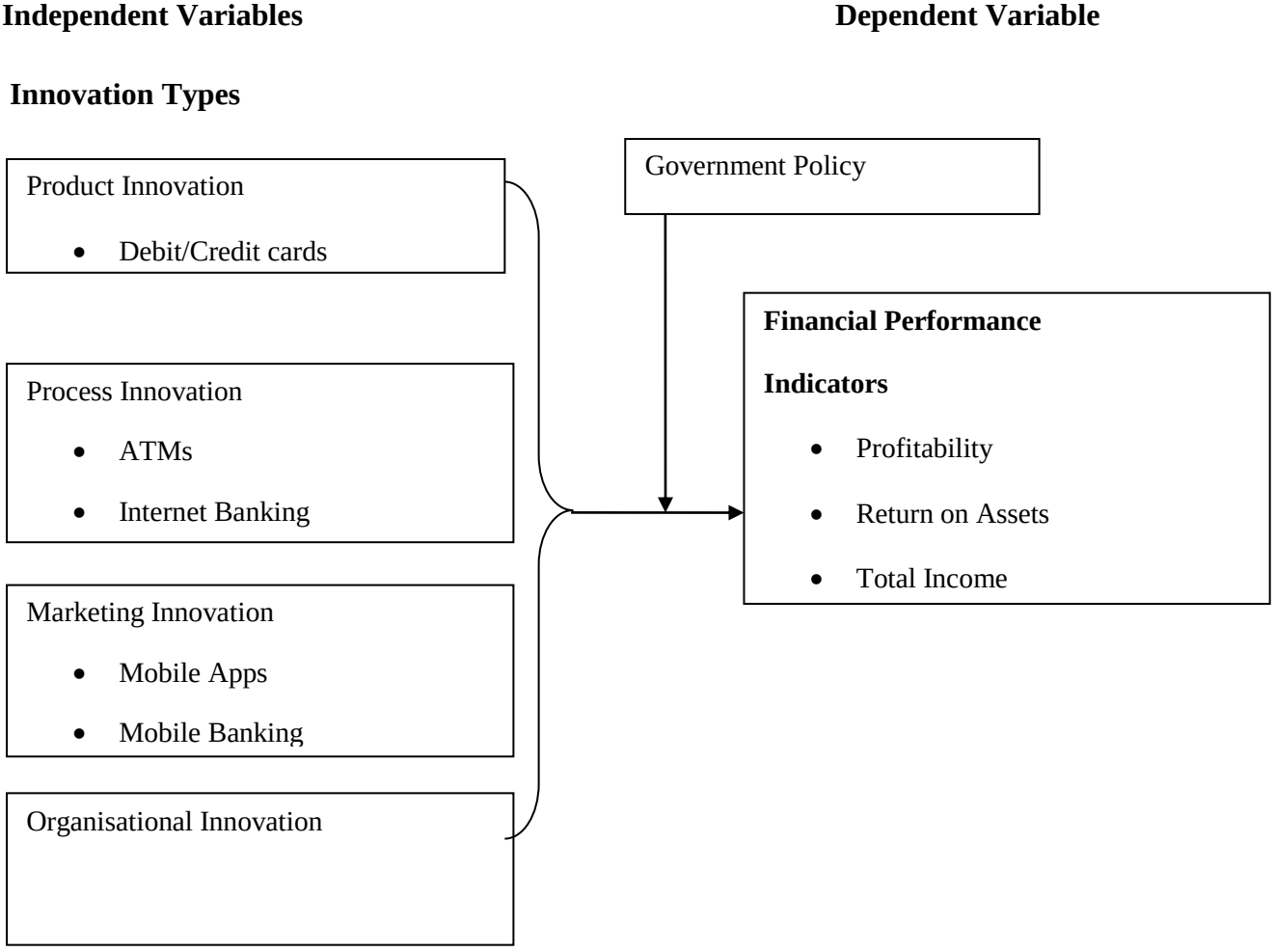

Fig 2.4: Conceptual Model depicting association between Innovations and Firm Financial Performance.

2.5 Summary of Literature Review

This chapter explored the conceptualization of key terms covering explanations on innovation and firm's performance. Evaluation of research undertaken on innovation types at firm level, the different models and theories of innovation, challenges facing implementation of innovation in businesses together with their views are contained in this chapter. Identification of the knowledge gap was done. Hence, this chapter is an essential part of this research paper as it draws various views from other studies conducted by other researchers in different contexts with varied objectives in the area of innovation and firm performance thus giving a sense of direction to this research.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section discussed study method as applied in designing and analyzing data resulting from the study. This covered research design, study target population, sampling and sample size, data collection process as well as techniques of analysing of data.

3.2 Research Design

The study adopted descriptive research design in achieving the established objectives. The descriptive design is convenient to deal with different field challenges likely to come up when administering questionnaire and also during interpretation of data, (Kombo & Tromp 2006).Kothari (2008) explains research design to be an "arrangement of conditions for collection and analysis of data in a matter that aims to combine relevance to the research purpose with economy in procedure". Descriptive research designs entail measurement, categorization, analysis, evaluation as well as data interpretation.

3.3 Target Population

The study sample population comprised of 254 managers of Kenyan commercial banks covering all levels of management namely; top, middle and lower level management. The selection of the study population was guided by the fact that, managers are well positioned to give the necessary information regarding innovation types adopted and the strategic position of the bank. According to Hyndman (2008), population denotes overall group of 'things' which generate interest to us..

3.4 Data Collection

The research data was composed of primary as well as secondary sources. Primary data collection was done with questionnaires circulated amongst the representative sample of the whole population focusing on innovations adopted by Kenyan Commercial banks. On the other hand, secondary data was sourced from the previous studies done on innovation types and their impact on performance of the firm within the banking industry and publications from various organizations and institutions that have interest in the service industry. This covered a period of five years (2010-2015). The respondents were managers and employees from commercial banks who have a clear understanding of the various innovation types adopted by the bank.

3.5 Data Analysis and Presentation

Content analysis analyzed qualitative data, a suitable technique towards analysis of secondary data. For the quantitative data analysis, a number of descriptive statistics mostly frequency distributions and percentages as well as mean and standard deviation were used. Regression and correlation analysis were used for the qualitative data in as far as inferential statistics is concerned. To present the specific issues, SPSS was used in coding as well as summarizing responses from the questionnaire.

Regression model applied in this study was as follows;

$$\mathbf{Y=a_0+ a_1X_1+a_2X_2+a_3X_3 +a_4X_4 + €}$$

Where:

Y= Financial Performance

a_o = Constant

X_1 = Product Innovation

X_2 = Process Innovation

X_3= Marketing Innovation

X_4 = Organizational Innovation

€ = Error term

3.6 Ethical Issues and Considerations

Ethical issues remain very important in any study for they guide the researcher on what is acceptable and what is not. This research observed all the ethical issues. The ethical issues observed included anonymity and privacy of respondents, informed consent and keeping information confidential.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

4.1 Introduction

This section contains findings from the analyzed data gathered from the study's questionnaires filled in by the respondents as discussed under the research methodology, presentation of findings and interpretation. The research aimed at establishing the influence of various innovation types on financial performance of Kenyan financial institutions. This chapter is divided into; questionnaire return rate, respondents' background information, types of innovation undertaken, factors affecting innovation decisions and challenges to implementing innovations.

4.2 Response Rate

Questionnaire was used to collect primary data from July to August 2016 whereas secondary data was collected using self-constructed data gathering sheet. A random selection of bank managers from twenty (20) commercial banks within Nairobi region was done and 254 questionnaires administered. A response rate of 82 % was achieved since 209 questionnaires were responded to. Mugenda and Mugenda (2003) recommend a response rate that exceeds fifty perecent, Sekaran (2003) recommending a thirty perecent response, and Hager, Wilson, Pollack and Rooney (2003) propose fifty percent. From this benchmark information, the response rate for this research was considered satisfactory.

4.3 Background of the respondents

This part outlines and discusses outcomes of the respondents' age, department as well as experience in years in the banking sector. These characteristics were relevant to the

study since they had a bearing on the respondent's ability to provide valid, reliable and relevant information that assisted the study to arrive at the conclusions.

4.3.1 Age

Table 4.1 informs that most of the study subject's age was above 35 years with a good percentage (69%) spread in the age bracket of 36 to 55 years. The other respondents were below 35 years of age (twenty eight percent). This confirms that many of the respondents ranged outside the youthful age group of eighteen to thirty five years. This is different from the popular belief that Kenyan commercial banks are dominated by young employees. Separately, those above 55 years were the minority and this is in consensus with several banks' workforce dominated by staff below 50 years. This is explained by the occasional staff realignments which tend to target dismissal of long serving staff members through company induced early retirement or voluntary exit arrangements.

Table 4.1: Age Distribution in Years

Age Bracket	**Under 25**	**26-35**	**36-45**	**46-55**	**Over 55**	**Total**
Frequency	10	48	88	56	7	**209**
Percentage	5	23	42	27	3	**100**

4.3.2 Departments

From Table 4.2 the data expresses that several respondents (seventy five percent) were working in audit, finance and ICT sections whereas twenty five percent worked in executive, credit and Human Resource divisions. This pattern could have been predisposed by the questionnaire distribution approach, where in majority of the banks the finance heads were the main points of contact and in other banks it was the audit and Information

Communication Technology functions. This type of study had more attention with the Information Communication Technology, finance, and audit divisions which are the leading champions of innovations in the financial services system. They are the same departments which tend to pay more to an innovation linked research since these are the sections with high consumption of Information Communication Technology novelties in a financial services system.

Table 4.2: Distribution by Departments

Department	**Executive**	**Finance**	**ICT**	**Audit**	**Credit**	**HR**	**Total**
Frequency	13	64	54	37	25	16	**209**
Percentage	5	31	26	18	12	8	**100**

4.3.3 Experience in Banking Sector

Table 4.3 shows a 90% (n=209) of correspondences is from employees who possess work experience of more than five years in the financial services sector, 10% with less than five year work experience. This outcome indicates that many of the study subjects started working in the industry after the year 2003 which tallies with the banking sector growth witnessed in the last 10 years or so. The total bank staffs in Kenya in 2010 was 28,846 and increased to 36,212 come year end 2015 signifying an employee increase by 20.34% (CBK, 2015). This indicates that financial institutions particularly banks have employed additional individuals to manage the remarkable development seen in the previous decade

transforming them into key foundations of employment opportunities with an attraction of different talents.

Table 4.3: Respondents Experience In Banking Sector

Years	**1-5 yrs**	**5-10 yrs**	**Over 10 yrs**	**Total**
Frequency	21	90	98	209
Percent	10	43	47	100

4.4 Study Variables Data Analysis

This part outlines research outcomes as well as breakdown of the four specific aims relating to this research. There is presentation of frequency tables, descriptive statistics together with statistics of inference. The responses from the questionnaire were constructed with respect to the Likert scale and coding done with numerals for simplicity of analyzing data. The values allocated to the Likert were **1=strongly disagree, 2=disagree, 3=neutral, 4=agree and 5=strongly agree.**

4.4.1 Bank Innovations and Bank Profitability

4.4.1.1 ATMs and Bank Profitability

Table 4.4 shows questionnaire outcomes relating the effect of ATMs with profitability in Kenyan financial institutions. Several responses (90%) established that ATMs comprise of high margin incomes that result into high profits for the commercial banks. Eight percent disagreed whereas 2% remained neutral. In relation to whether ATMs have low maintenance expense, ninety five percent agreed whereas three percent remained neutral with two percent disagreeing. In terms of whether investment in ATMs was motivated by profits, 33% agreed with forty three percent being neutral and twenty four percent

disagreeing. Automated Teller Machines have the potential to generate reasonable income in the Kenyan commercial banks out of the convenience they present to bank clients.

Table 4.4.: ATMs and Bank Profitability

Statement.	Strongly-disagree	Disagree	Neutral	Agree	Strongly-agree	Mean	Standard Deviation
ATMs have high income margins thus positive contribution to the yearly profits of commercial banks	2	6	2	78	12	3.92	0.324
ATMs have low maintenance expense hence high returns (profits) during their economic lifetime		2	3	75	20	4.13	0.399
Investing in ATMs is highly driven by profitability in the commercial banks	4	20	43	31	2	3.05	0.853
Average						**3.70**	**0.525**

4.4.1.2 Debit/Credit Cards and Bank Profitability

Table 4.5 shows outcomes of influence of debit and credit cards on bank profits. A few respondents (13%) agreed, seventeen percent did not take sides while seventy percent differed on whether debit as well as credit cards contributed reasonable margins hence high profitability. In terms of the assertion that debit and credit cards bear low maintenance expense, 95% agreed, three percent did not take sides while two percent differed. On the

subject of whether banks are aiming at profit maximization when investing in debit and credit cards, thirty three percent were in agreement, forty three percent remained neutral and twenty four percent differed. The mean score of 2.94 indicated a below average number of respondents agreeing to cards impact on profits of Kenyan lending institutions.

Table 4.5: Debit/Credit Cards and Bank Profitability

Statement.	Strongly-disagree	Disagree	Neutral	Agree	Strongly-agree	Mean	Standard Deviation
Debit and credit cards have high income margins thus positive contribution to the yearly profits of commercial banks	5	65	17	13		2.37	0.637
Debit/ credit cards bear minimal maintenance expense hence favorable returns (profits) during their economic lifetime		2	3	75	20	3.76	0.581
Investing in debit and credit cards is highly driven by profitability in the commercial banks	4	20	43	31	2	2.68	0.707
Average						**2.94**	**0.642**

4.4.1.3 Internet Banking and Bank Profitability

Table 4.6 outlines opinions of the respondents regarding the effect of internet banking on the profits of Kenyan lending institutions. As pertaining whether incomes from internet banking provide good margins, 40% were in agreement with fifteen percent remaining neutral and forty five percent in disagreement. In relation to internet banking having low maintenance expenditure, sixty eight percent agreed, twenty two percent did not take sides

while ten percent were in disagreement. On the assertion that banks are motivated by profitability in their investment in internet banking, 58% were in disagreement while thirty two percent did not take sides with only ten percent agreeing. The average figure of 2.99 showed less agreement on the statement that internet banking positively impacts the profits of commercial banks.

Table 4.6: Internet Banking and Bank Profitability

Statement.	Strongly-disagree	Disagree	Neutral	Agree	Strongly-agree	Mean	Standard Deviation
Internet banking has high income margins thus positive contribution to the yearly profits of commercial banks	9	36	15	39	1	2.88	1.058
Internet banking has low maintenance expense hence high returns (profits) during their economic lifetime		10	22	60	8	3.66	0.584
Investing in internet banking is highly driven by profitability in the commercial banks	10	48	32	10		2.42	0.808
Average						**2.99**	**0.817**

4.4.2 Bank Innovations and Return on Assets

4.4.2.1 ATMs and Return on Assets

From Table 4.7, regarding whether ATMs influence operating cost of the commercial banks and therefore return on asserts, 80% were in agreement whereas five percent did not take sides and fifteen percent did not agree. When asked if ATMs can get back the original investment in less than 3 years 80% were in agreement, and twenty percent did not take

sides. The average figure of 3.47 shows several respondents being in agreement with the assertion that Automated Teller Machines bear positive impact on ROA.

Table 4.7: ATMs and Return on Assets

Statement.	Strongly-disagree	Disagree	Neutral	Agree	Strongly-agree	Mean	Standard Deviation
ATMs drive a decrease in operational expenses thus improved ROA		15	5	70	10	3.75	0.493
Investing on ATMs has a payback period of < 3 years thus a good return on assets.			20	75	5	3.85	0.493
ATMs income positively influences income margins of commercial banks.	7	37	23	30	2	2.82	1.011
Average						**3.47**	**0.666**

4.4.2.2 Debit/Credit Cards and Return on Assets

Table 4.8 presents the influence of debit and credit cards on ROA. On this assertion that the two products impact the reduction of banks' operating expenses, fifty one percent were in disagreement, twenty nine percent remained neutral and twenty percent agree. Ninety five percent of responses indicated that both cards payback period is < three years, one percent remained indifferent whereas four percent were in disagreement. An average figure of 3.30 exhibited several respondents as being in agreement with both cards positive impact on ROA.

Table 4.8: Debit/Credit Cards and Return on Assets

Statement.	Strongly-disagree	Disagree	Neutral	Agree	Strongly-agree	Mean	Standard Deviation
Debit/ credit cards drive a decrease in operational expenses thus enhanced ROA.	9	42	29	18	2	2.6	0.942
Investing in debit & credit cards has a payback period of < 3 years thus a good return on assets.	1	3	1	91	4	3.95	0.307
Debit & credit cards income positively influences income margins of commercial banks	1	11	45	41	3	3.33	0.741
Average.						**3.29**	**0.663**

4.4.2.3 Internet Banking and Return on Assets

Table 4.9 presents effect of internet banking on return on assets. As per the statement that internet banking reduces operating expenditure of commercial banks thus improving return on assets, seventy nine percent agreed, twenty percent did not take sides while one percent did not agree. On whether internet banking soundly contributed to bank margins 36% agreed, fifty seven percent were neutral and fourteen percent did not agree. The average of 3.40 exhibited several respondents agreeing with the assertion, internet banking influenced return on assets.

Table 4.9: Internet Banking and Return on Assets

Statement.	Strongly-disagree	Disagree	Neutral	Agree	Strongly-agree	Mean	Standard Deviation
Internet banking drives a decrease in operational expenses thus enhanced ROA.		1	20	75	4	3.82	0.500
Investing in Internet banking has a payback period of < 3 years thus a good return on assets.	2	12	50	36		3.22	0.73
internet banking income positively influences income margins of commercial banks	2	12	57	28	1	3.15	0.697
Average						**3.40**	**0.642**

4.4.3 Bank Innovations and Total Bank Income

4.4.3.1 ATMs and Total Bank Income

Table 4.10 presents outcomes on assertions relating ATMs and income of Kenyan commercial banks. Relating ATMs positive impact to commission income, 80% agreed, twenty percent remained neutral and with nil disagreement on this assertion by the respondents. On the question of whether ATMs impact positively on interest incomes, eighteen percent agreed, twenty seven percent did not take sides and fifty five percent did not agree. Regarding ATMs ability to better the income generating potential of banks, thirty seven percent remained neutral, thirty two percent were in agreement whereas thirty one percent did not agree. The mean score of 3.03 informs that a good number of the respondents were in agreement.

Table 4.10: ATMs and Total Bank Income

Statement.	Strongly-disagree	Disagree	Neutral	Agree	Strongly-agree	Mean	Standard Deviation
ATMs positively impact (increase) commission fee based income.			20	77	3	3.83	0.448
ATMs have positive impact (increase) on interest led income.	36	19	27	17	1	2.28	1.157
ATMs contribute to expansion of the income making possibility of commercial banks.	5	26	37	32		2.99	0.895
Average						**3.03**	**0.833**

4.4.3.2 Debit/Credit Cards and Total Bank Income

From Table 4.11, on the statement that cards impact positively on commission generated income hence total bank income, seventy three percent of the respondents were in agreement whereas twenty seven percent remained neutral. Regarding cards contribution to income generation, forty four percent were in agreement whereas forty eight percent did not take sides and 8% were in disagreement. The average figure of 3.50 shows several respondents agreement with the statement that both cards form likelihood of better income.

Table 4.11: Debit/Credit Cards and Total Bank Income

Statement.	Strongly-disagree	Disagree	Neutral	Agree	Strongly-agree	Mean	Standard Deviation
Debit & credit cards positively impact (increase) commission fee based income.			27	70	3	3.75	0.487
Debit/credit cards pose positive impact on interest led income.		17	32	50	1	3.36	0.775
Debit & credit cards have contributed to expansion of the income generating potential of commercial banks.		8	48	43	1	3.38	0.653
Average						**3.50**	**0.638**

4.4.3.3 Internet Banking and Total Bank Income

From Table 4.12, regarding whether internet banking enhanced bank commission fee incomes, fifty three percent of the respondents were on disagreement, eighteen percent agreed whereas 29% remained neutral. Based on whether internet banking enhanced the common potential of commercial banks to make extra incomes seventy three percent were in disagreement with only ten percent in agreement. The mean score of 2.32 indicated several respondents did not agree to the assertion of internet banking resulting into enhanced income.

Table 4.12: Internet Banking and Total Bank Income

Statement.	Strongly-disagree	Disagree	Neutral	Agree	Strongly-agree	Mean	Standard Deviation
Internet banking positively impacts (increase) commission fee based income.	12	41	29	18		2.52	0.926
Internet banking has positive impact (increase) on interest based income.	19	54	9	18		2.26	0.965
Internet banking has contributed to expansion of the income generating potential of commercial banks.	19	54	17	10		2.18	0.853
Average						**2.32**	**0.915**

4.4.4 Challenges of Implementing Innovation Decisions

Table 4.13 illustrates 62% response by those agreeing that inadequate technological skills was one the of challenges that commercial banks face in implementing innovation decisions, 56% strongly agree that the complexity of the innovation type/decision was another challenge faced by commercial banks in the implementation of innovation decisions. A mean score of 2.45 was established informing that the challenges indicated were not affecting the implementation of innovation decisions by the commercial banks in view of the respondents' opinions.

Table 4.13: Challenges of Implementing Innovation Decisions

Statement.	Strongly-disagree	Disagree	Neutral	Agree	Strongly-agree	Mean	Std - Deviation
Inadequate technological skills	6	6	19	7	62	2.44	0.948
Complexity of innovation type/decision	7	3	9	25	56	4.22	1.157
Fear of job loss by the employees	6	13	31	41	9	1.56	0.982
Insecurity	3	3	6	22	66	3.34	1.035
Tight regulatory frameworks in the banks	81	10	3	3	3	1.38	0.942
Average						**2.45**	**1.0085**

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The research paper studied influence of inventions towards financial performance in Kenyan banks. The inventions under research comprised; ATMs, both debit and credit cards as well as internet based banking. The financial performance measures under study encompassed profitability, total income and return on assets. This section gives summarized research outcomes as well as drawing conclusions from which recommendations are made. Proposals for additional research are also provided as an opportunity to fill the study gaps pinpointed in the research.

5.2 Summary of Findings

Comparison with earlier researches examining bank inventions impact on performance revealed a mixture of outcomes guided by both the level of adoption as well as the operating environment. Kenya has a competitive level of implementation of innovations in the financial services industry. Prior the ultimate collection of data, a preliminary study was undertaken to assess if questionnaire content remained valid as well as reliable. Validity enrichment was attained via content review of the questionnaire using a sample of 2 arbitrarily picked bank supervisors. On reliability, tests were done with the SPSS. The study sample was issued with 254 questionnaires, 209 correctly filled and brought back for analysis. This denoted an 82% response rate.

The outcomes of the research established that the collective effect of bank inventions impacts positively to lending institution's financial performance. These outcomes were backed by the frequency of responses in the questionnaire expressed in both percentage and

mean scores. Majority of these respondents felt that technology was of great importance in the banks for them to be able to carry their work effectively .The fear of job loss is rocking the boat in innovation and results into problems.

5.3 Conclusion

The outcomes of this research support the conclusion; bank inventions positively impact financial performance of Kenyan lending institutions. Inventions implemented by financial institutions present great possibility to better financial performance thus enhanced investor earnings. Inventions usefulness has increased the degree of acceptance both in the banks and their clients. This could be more complicated if the acceptance was one-sided with either the banks or the consumers. It's worth noting that the performance in the Kenyan financial services industry is not fully depended on bank innovations. There exists additional drivers of financial performance in the industry such as; government controls, HR and effectiveness in management among others.

5.4 Recommendations

This research recommended the following:-

5.4.1 Influence of bank innovations on profitability

It's recommended that ICT experts ought to devote their time resource and energy to inventions. This translates to additional pay for the ICT specialists whenever there is success in these innovations. A good number of Kenyans are are still unbanked as a result of poor access to banking services. ICT experts ought to find out techniques of offering innovative solutions to access the unbanked. This is likely to facilitate further financial deepening as well as improved financial development for the nation thus higher profits for the financial institutions.

5.4.2 Influence of bank innovations on return on assets

Due to Kenya's aggressive and continued adoption of innovations in technology, the government ought to offer incentives for R & D to research scientists who endeavor to put in their time resource and skills to invent additional bank innovations. Further, it's suggested that the government should implement a policy to offer incentives towards technological expertise transfer from more developed countries so as to encourage the implementation of international inventions.

5.4.3 Influence of bank innovations on income

Financial institutions ought to continue investing on more innovative delivery channels since this improves banks capability to regulate expenditure. A bulk of transactions are undertaken via channels such as telephone and e-banking are more in comparison with performing similar transactions through manual procedures. This facilitates reduction in cost in every unit of service thus improved revenues to the financial institutions.

5.4.4 Challenges of Implementing Innovation Decisions

In regard to the challenges of implementing financial innovation, the study makes the following recommendation: The banks should put more efforts on economic factors so that they may be able to meet the demands. Secondly, they should also be able to put into consideration the technological factors so that they will be able to provide up to date products to the market .Lastly the bank managers should also let their employees have wide knowledge on the products.

5.5 Areas for Further Research

This research paper covered limited bank inventions. Additional research is suggested towards exploring inventions such as credit guarantees, securitization and agency banking

and their financial performance implication to Kenyan lending institutions. Further comprehensive research should be undertaken towards finding out whether implementing financial inventions supported Kenya's effort to attain financial deepening.

REFERENCES

Audretsch, D. B. (1995). Firm Profitability, Growth, and Innovation. *Review of Industrial Organization* 10, 579-588.

Banbury, C., M. & W. Mitchell (1995). The Effect of Introducing Important Incremental Innovations on Market Share and Business Survival. *Strategic Management Journal*, 16, 161 182.

Banerjee, A. (1999). Panel Data Unit Roots and Cointegration: An Overview. *Oxford Bulletin of Economics and Statistics.* Special issue, 607-629.

Barlet, C., E. Duguet, D. Encaoua & J. Pradel (1998). The Commercial Success of Innovation: An Econometric Analysis at the Firm Level in French Manufacturing. *Annales d'Economie et de Statistique* 49/50, 457-478.

Bottazzi, G., G. Dosi, M. Lippi, F. Pammolli & M. Riccaboni (2001). Innovation and Corporate Growth in the Evolution of the Drug Industry. *International Journal of Industrial Organization* 19, 1161-1187.

Cainelli, G, R. Evangelista & M. Savona (2004). The Impact of innovation on economic performance in financial services. *The Service Industries Journal*, 24(1), 116–130.

Cainelli, G., R. Evangelista & M. Savona (2006). Innovation and Economic Performance in Services: A Firm Level Analysis. *Cambridge Journal of Economics* 30 435-458.

Central Bank of Kenya (2011). *Annual Reports*, Central Bank of Kenya, Nairobi.

Cohen, W.M. (1995). Empirical studies of innovative activity in *Handbook of the Economics of Innovation and Technological Change*. Paul Stoneman, ed. Cambridge: Blackwell, 182-264.

Corsino, M. (2008). Product Innovation and Growth: The Case of Integrated Circuits'. LEM Working Paper 2008-02, Sant'Anna School of Advanced Studies, Pisa.

Crepon, B., E. Duguet & J. Mairesse (1998). 'Research, Innovation and Productivity: An Econometric Analysis at the Firm Level', *Economics of Innovation and New Technology* 7, 115- 158.

Dosi, G. (1988). 'Sources, Procedures, and Microeconomic Effects of Innovation', *Journal of Economic Literature* 26, 1120-1171.

Hauner, D. & S. J. Peiris (2005). *Bank Efficiency and Competition in Low-Income Countries: The Case of Uganda.* International Monetary Fund Working Paper WP/05/240.

Hayashi, F. & Klee, E. (2003). Technology adoption and consumer payments: evidence from survey data. *Review of Network Economics*, 2(2), 175-190.

Hopkins, W.E. & S. Hopkins (1997). Strategic planning-financial performance relationships in banks: A causal examination, *Strategic Management Journal*, Vol. 18:8, p. 635–652.

Kombo D.K. & Tromp D.L.A. (2006). Project and Thesis Writing: An Introduction. Nairobi, Pauline Publications

Kothari C.R. (2003). *Research Methodology; Methods and Techniques*. 2nd ed. New Age Int. Publishers, New Delhi

Kothari C.R. (2008). Research Methodology; Methods and Techniques.2 nd ed. New Age Int.Publishers, New Delhi

Lenz, R. T. (1981). 'Determinants of organizational performance: An interdisciplinary view', *Strategic Management Journal*, 2(2), pp. 131–154.

Lyons, R. K, J. A. Chatman & C. K. J (2007). Innovation in financial services: Corporate culture and investment banking. *California Management Review*, 50(1), 174–191.

Mansury, M. A & Love J. H. (2008). Innovation, productivity and growth in US business services: A firm-level analysis. *Technovation*, 28(1/2), 52–62.

Oke, A., & Goffin, K. (2001). *Innovation management in the service sector*, Management Focus, summer issue.

Oloo, M. (2007). *The Banking Survey, Kenya*. Think Business Ltd. Nairobi.

Porter, M. (1985). Competitive Advantage: Creating and Sustaining Superior Performance, *The Free Press*, New York, NY. Pp 46 – 53

Tidd, J. & Hull F. M. (2003). *Service Innovation: Organizational Responses to Technological Opportunities & Market Imperatives.* London: Imperial College Press.

Tidd, J., Bessant, J., & Pavitt, K. (2001). *Managing Innovation: Integrating Technological, Market and Organisational Change*, Wiley, Bognor Regis.

Tushman, G. & Nadler S. (2006). Relative strengths and weaknesses of small firms in Innovation, *International Small Business Journal*, Vol. 16 No.3, pp.88-94.

Unger, B. (2005). Problems of Measuring Innovative Performance, in Casper, S. & F.

APPENDICES

APPENDIX I: LETTER OF INTRODUCTION

Date…….
To……
…….

Dear Sir/Madam,

RE: COLLECTION OF RESEARCH DATA

My name is James Munywoki and a Masters student in Business Administration – Finance option at the University of Nairobi. Currently, I am carrying out a research on the "*Effect of innovations on financial performance of commercial banks in Kenya"*. I am in the process of gathering relevant data for this study. You have been identified as one of the respondents in this study and kindly request for your assistance towards making this study a success.

I therefore kindly request you to take some time to respond to the attached questionnaire. I wish to assure you that your responses will be treated with confidentiality and will be used solely for the purpose of this study.

I thank you in advance for your time and responses. It will be appreciated if you can fill the questionnaire within the next 5days to enable early finalization of the study.

Yours Sincerely

James K Munywoki

Student Reg No. D61/75695/2009

APPENDIX II: QUESTIONNAIRE

Research Topic: Effects of Innovation on Financial Performance of Commercial Banks in Kenya

Please take a few minutes to complete this questionnaire. Your answers will be completely anonymous, but your views, in combination with those of others are extremely important in understanding the Effects of Innovations on Financial Performance of Commercial Banks in Kenya.

SECTION A: BIOGRAPHIC INFORMATION

1. State your gender

Male	[ ]
Female	[ ]

2. State your age

Under 25	[ ]
26-35	[ ]
36-45	[ ]
46-55	[ ]
Over 55	[ ]

3. Which department do you work in at the organization?

Executive	Human Resources
Finance	Liabilities
ICT	Risk & Compliance
Audit	Others
Credit	

4. What is your length of service in the banking sector?

1-5 years [ ]

5-10 years [ ]

Over 10 years [ ]

SECTION B: EFFECTS OF BANK INNOVATIONS ON BANK PROFITABILITY

This section has statements regarding the effect of bank innovations on profitability of the bank. Kindly respond with the response that matches your opinion. Please tick as appropriate in the boxes using a tick (√) or cross mark (x)

No	Statement	Strongly disagree	Disagree	Neither agree not disagree	Agree	Strongly agree
		1	2	3	4	5
Automated Teller Machines (ATMs)						
5.	Income from ATMs has high margin hence contributing positively to bank annual profitability					
6.	ATMs have low maintenance costs leading to high levels of profitability over their economic lifetime					
7	Investment in ATMs in mostly motivated by profits to the bank					
Debit & Credit Cards						
8.	Income from debit and credit cards has high margin hence contributing positively to bank annual profitability					
9.	Debit and credit cards have low maintenance costs leading to high levels of profitability over their economic lifetime					
10.	Investment in debit and credit cards is mostly motivated by profits to the bank					
Internet Banking						
11.	Income from internet banking has high margin hence contributing positively to bank annual profitability					
12.	Internet banking has low maintenance costs leading to high levels of profitability over their economic lifetime					

13.	Investment in internet banking is mostly motivated by profits of the bank.					

SECTION C: EFFECT OF BANK INNOVATIONS ON RETURN ON ASSETS

This section has statements regarding the effect of bank innovations on return on assets of the bank. Kindly respond with the response that matches your opinion. Please tick as appropriate in the boxes using a tick **(√)** or cross mark **(x).**

No	**Statement**	**Strongly disagree**	**Disagree**	**Neither agree not disagree**	**Agree**	**Strongly agree**
		1	**2**	**3**	**4**	**5**
Automated Teller Machines (ATMs)						
14.	ATMs influence reduction of operational costs and hence better return on assets for the bank					
15.	ATMs investments have payback period of less than 3 years and hence good return on assets					
16.	Incomes from ATMs have had positive impact on bank income margins					
Debit & Credit Cards						
17.	Debit & credit cards influence reduction of operational costs and hence better return on assets for the bank					
18.	Debit & credit cards investments have payback period of less than 3 years and hence good return on assets					
19.	Incomes from debit & credit cards have had positive impact on bank income margins					
Internet Banking						

20.	Internet banking influence reduction of operational costs and hence better return on assets for the bank					
21.	internet banking investments have payback period of less than 3 years and hence good return on assets					
22.	Incomes from internet banking have had positive impact on bank					

SECTION D: EFFECT OF BANK INNOVATIONS ON TOTAL INCOME

This section has statements regarding the effect of bank innovations on total income of the bank. Kindly respond with the response that matches your opinion. Please tick as appropriate in the boxes using a tick **(√)** or cross mark **(x).**

No	**Statement**	**Strongly disagree**	**Disagree**	**Neither agree not disagree**	**Agree**	**Strongly agree**
		1	**2**	**3**	**4**	**5**
ATMs						
23.	ATMs have had a positive effect of increasing commission fee based income					
24.	ATMs have influenced positively the increase of interest based income					
25.	ATMs have expanded the income generating potential of the bank					
Debit & Credit Cards						
26.	Debit & credit cards have had a positive effect of increasing commission fee based income					
27.	Debit &credit cards have influenced positively the increase of interest based income					

28.	Debit & credit cards have expanded the income generating potential of the bank					
Internet Banking						
29.	Internet banking has had a positive effect of increasing commission fee based income					
30.	Internet banking has influenced positively the increase of interest based income					
31.	Internet banking has expanded the income generating potential of the bank					

SECTION E: CHALLENGES OF IMPLEMENTING INNOVATION DECISIONS

This section has statements regarding the challenges of implementing innovation decisions by the bank. Kindly respond with the response that matches your opinion. Please tick as appropriate in the boxes using a tick **(√)** or cross mark **(x).**

No	**Statement**	**Strongly disagree**	**Disagree**	**Neither agree not disagree**	**Agree**	**Strongly agree**
		1	**2**	**3**	**4**	**5**
31.	Inadequate technological skills					
32.	Complexity of innovation type/decision					
33.	Fear of job loss by the employees					
34.	Insecurity					
35.	Tight regulatory frameworks in the banks					

END OF QUESTIONNAIRE

Thank you for your input and cooperation

APPENDIX III: BANKING SECTOR PROFITABILITY- DECEMBER 2015

		1	2	3	4	5
	BANKS	PROFIT BEFORE TAX	RETURN ON ASSETS		RETURN ON EQUITY	
			MET ASSETS	RETURN ON ASSETS(I/	SHAREHOLDERS EQUITY	RETURN ON EQUITY(1/4)
		Ksh,M	Ksh.M		Ksh.M	Ksh.M
1	Kenya Commercial Bank Ltd	23,445	467,741	5.01%	80,886	29.0%
2	Equity- Bank Ltd.	22,388	341,329	6.56%	47,440	47.2%
3	Co - operative Bank of Kenya Ltd	14,073	339,550	4.14%	49,311	28.5%
4	Barclays Bank of Kenya Ltd	12,074	241,153	5.01%	39,716	30.4%
5	Standard Chartered Bank (K) Ltd	8,974	234,131	3.83%	40,914	21.9%
6	I&M Bank Ltd	8,367	147.846	5.66%	26,187	32.0%
7	CfCStanblc Bank (K) Ltd	7,077	198,578	3.56%	28,251	25.1%
8	Diamond Trust Bank (K) Ltd	7,055	190,948	3.69%	29,996	23.5%
9	NIC Bank Ltd	6,260	156,762	3.99%	26,454	23.7%
10	Commercial Bank of Africa Ltd	6,227	198,484	3,14%	22,708	27.4%
11	Citibank N.A. Kenya	5,577	88,147	6.33%	19,407	28.7%
12	Family Bank Ltd.	2,883	81,190	3.55%	1 1,927	- 24.2%
13	Prime Bank Ltd	2,593	65,001	3.99%	8,725	29.7%
14	BankofBaroda(K)Ltd	2,486	68,178	3.65%	11.273	22.0%
15	Bank of India	1.470	42,163	3.49%	7,183	20.5%

17	Gulf African Bank Ltd	1.093	24,714	4.42%	3,877	28.2%
IS	Victoria Commercial Bank Ltd	677	20,020	3.38%	3.512	19.3%
19	Guaranty Trust Bank Ltd	547	29,374	1.86%	7,906	6.9%
20	Sidian Bank Ltd	520	19,107	2.72%	3,837	13.5%
21	Habib Bank A.G. Zurich	510	14,440	3.53%	2,573	19.8%
22	Habib Bank Ltd	485	10,230	4.74%	2,147	22.6%
23	Giro Commercial Bank Ltd	479	15,810	3.03%	2,835	16.9%
24	African Banking Corporation Ltd	355	22.058	1.61%	2,837	12.5%
25	Guardian Bank Ltd	329	14.609	2.25%	1,984	16.6%
26	Trans - national Bank Ltd	252	10.533	2.39%	2,033	12.4%
27	Development Bank of Kenya Ltd	178	16.943	1.05%	2,844	6.3%
28	Paramount Universal Bank Ltd	169	10,526	1.60%	1,536	11.0%
29	Ecobank Kenya Ltd	93	52,427	%	7,561	1.2%
30	Consolidated Bank of Kenya Ltd	49	14.136	0.35%	1,615	3.0%
31	Middle East Bank (K) Ltd	43	5,678	0.75%	1,263	3.4%
32	Oriental Commercial Bank	42	8,496	0.49%	2,240	1.9%

	Ltd					
33	Jamii Bora Bank Ltd	36	16,782	0.22%	3.163	1.2%
34	First Community Bank Ltd	11	14,613	0.07%		0.7%
35	Credit Bank Ltd	(179)	10.287	-1.74%	1,392	-12.8%
36	Fidelity Commercial Bank Ltd	(277)	15,025	-1.84%	1,745	-15.9%
37	UBA Kenya Ltd	(304)	7,781	-3.91%	1,119	-27.2%
38	Equatorial Commercial Bank Ltd	(655)	14,470	-4.53%	2,069	-31.7%
39	.Bank of Africa (K) Ltd	(1,434)	69,280	-2.07%	8,496	-16.9%
40	National Bank of Kenya Ltd	(1,684)	125.295	-1.34%	10,914	-15.4%
41	Chase Bank Ltd*	-	-	-	-	-
42	Imperial Bank Ltd *	-	-	-	-	-
43	Charterhouse Bank Ltd **	-	-	-	-	-
	Sub-Total	132,280	3,423,835	3.86%	542,572	24.4%
	NBFI'S					
	Housing Finance Company of Kenya Ltd	1,737	68,809	2.52%	9,090	19.1%
	Sub-Total	1,737	68,809		9,090	
	Grand Total	134,017	3,492,643	3.84%	551,662	24.3%
*- Banks in receivership						
** - Bank under statutory management						