

**THE RELATIONSHIP BETWEEN FINANCIAL INNOVATION
AND GROWTH IN PROFITABILITY OF ISLAMIC
BANKING IN KENYA**

BY

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DECLARATION

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

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This management research project has been submitted for examination with my approval as the University supervisor.

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DEDICATION

I would like to take this opportunity to thank God for making this study possible.

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ABSTRACT

The objective of this research study was to assess the relationship between financial innovation in Shariah compliant financial products and services and profitability of Islamic banking in Kenya. This study targeted eight (8) commercial banks that operate Islamic banking in Kenya. It covered the period between 2009 and 2012. Specifically, the study sought to establish the relationship between Islamic financial innovations and banking profitability. The return on Assets (ROA) was used to measure profitability and was calculated by dividing the banks' net profit before taxation by the total assets held by the bank over the study period. Financial innovation was measured by; Number of Islamic debit and credit cards issued by Islamic banks, Contribution of agency banking, internet banking and mobile banking to income generated from Islamic banking, Number of new Shariah compliant financing facilities, Maintenance cost of Islamic debit and credit cards and Margin generated from Islamic debit and credit cards. The data for this study was collected using questionnaires for primary data study and secondary data was obtained from the Central Bank of Kenya annual reports. Out of the eight banks targeted, six responded which represented a response rate of 75%. A regression analysis on each of the Islamic banking innovations above individually against the bank's profitability (ROA) revealed that there is a very weak relationship between individual innovations and profitability. The study results showed that bank innovations have a moderate influence on profitability of Islamic banks in Kenya. The analysis on combined effect of bank innovations produced a coefficient of determination of 56.8% which shows the percentage of variations in profitability which is explained by bank innovations. Based on the summary of the findings the study concluded that if Islamic banking is to have meaningful contribution to profits such banks should adopt a composite of financial innovations. Given that the relationship of the model is positive, increasing financial innovations would affect a bank's profitability positively. Similarly, a decline in financial innovations would decrease a bank's profitability. The moderate relationship (moderate correlation) between financial innovations and profitability implies that there are more other factors which affect a bank's profitability and not only financial innovations. The study recommended that banks offering Shariah compliant financial services should focus their efforts on financial innovations. The more the financial innovations a bank is able to adopt, the more its chances of enhancing its profitability.

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LIST OF ABBREVIATIONS

CBK	Central Bank of Kenya
GAB	Gulf African Bank
FCB	First Community Bank
ICT	Information and Communication Technology
IT	Information Technology
Ksh	Kenya Shilling
ROA	Return on Assets

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Islamic banking emerged as a practical reality and started functioning in 1970s. Since then it has been growing continuously all over the world. Global conventional banks like Standard Chartered Bank, Deutsche Bank, Citibank, etc. have also set up separate windows/divisions to structure Islamic financial products and are offering Islamic banking services to their Muslim clients and even to those non-Muslim clients who are interested in profit and loss sharing financial instruments. UK, France, China, Singapore and many other countries have developed special regulatory to facilitate the working of Islamic banking.

Conventional banking, which has been operating for the last three centuries on strong footing, has started tumbling steeply in the last few decades while Islamic banking has been expanding all over the world particularly in Muslim countries with fast speed. The vertical growth of Islamic banking within short span of time has surprised everyone including western financial experts and analysts. Nazim (2008) disclosed that 970 books have been published on Islamic Finance recently while 2557 research articles on Islamic finance have been published in research journals. This small detail shows the growing interest of researchers in Islamic finance.

Sharia compliant banking is viewed by many as the fastest growing segment of the banking sector in the world. In Africa, Islamic banking is a fast growing financial sector attracting all customers even of different religious orientation. The uptake of Islamic

banking is projected to grow exponentially in sub-Saharan Africa. Kenya is among other African countries that are taking up the lead in Sharia compliant banking services (Ndung'u, 2011).

1.1.1 Financial Innovation

One of the most widely and frequently used definition of financial innovation is that offered by Frame and White (2004), which after having analyzed the basic functions of the financial system, considered financial innovation as “something new that reduces costs, reduces risks, or provides an improved product/service/instrument that better satisfies participants’ demands”. Financial innovations can thus be grouped as new products (e.g., adjustable rate mortgages; exchange-traded index funds); new services (e.g., on-line securities trading; Internet banking); new "production" processes (e.g., electronic record-keeping for securities; credit scoring); or new organizational forms (e.g., a new type of electronic exchange for trading securities; Internet-only banks).

Irechukwu (2000) lists some banking services that have been revolutionized through the use of Information and Communication Technology (ICT) as including account opening, customer account mandate, and transaction processing and recording. ICT has provided self-service facilities (automated customer service machines) from where prospective customers can complete their account opening documents direct online. It assists customers to validate their account numbers and receive instruction on when and how to receive their cheque books, credit and debit cards. Communication technology deals with the physical devices and software that link various computer hardware components and transfer data from one physical location to another (Laudon & Laudon, 2001). ICT products in use in the banking industry include Automated Teller Machine, Smart Cards,

Telephone Banking, Electronic Funds Transfer, Electronic Data Interchange, Electronic Home and Office Banking.

1.1.2 Growth in Profitability

The use of financial innovation can contribute to improved bank performance, in terms of increased market share, expanded product range, customized products and better response to client demand all of which contribute to profitability. Financial innovation continues to influence banks activities and their income structure. Among the activities that may be subject to stronger pressures for change are those that, up to today, have remained relatively insulated from ICT developments. This applies mainly to some retail banking activities that are suitable for standardization, and also to developments in remote banking (Kariuki, 2005).

Islamic banking industry has gone a long way in a rather short span of time and according to some estimate, is growing at ‘an annual rate of 15 to 20 percent per year’ (Zaher & Hassan 2001). Kenyan Islamic banks, Gulf African Bank and First Community Bank, outpaced their rivals by recording triple-digit rise in profit helped by lending to peers, households and companies. Gulf African Bank posted a 154 per cent growth in net profit to Sh242.2 million in the year to December boosted by income from lending, which was up 53.1 per cent to Sh1.47 billion. First Community Bank profits rose 238 per cent to Sh241.3 million helped by lending and earnings from deposits with rival banks through a special window called Tawaruq. Tawaruq refers to lending to other financial institutions with the money used to finance Islamic products only. The triple-digit growth come in a year when Kenya’s entire banking sector posted a profit growth of 20 per cent to Sh107 billion—underlining the potential of Islamic banking (Mwaniki, 2013). The future indicates an intensified competition in the banking sector arising from the introduction of

Islamic banking. The banking sector is expected to sustain its growth momentum on the backdrop of a stable macro-economic environment, domestic and regional expansion by banks and the increased economic activities through the devolved system of government (CBK, 2013).

1.1.3 Financial Innovation and Growth

In the current study, the word financial innovation takes its meaning particularly relevant to Islamic banking industry. It denotes the effort of Islamic banks to exploit Shariah-compliant new ideas and possibilities in order to meet their increasing concern about product development and liquidity and risk management so as to ensure the value of the assets created by them as well as sustained growth and profitability for the business. The banking industry has been in a process of significant transformation. The force behind this transformation of the banking industry is innovation in information technologies (Aduda & Kingoo, 2012). The application of information and communication technology concepts, techniques, policies and implementation strategies to banking services has become a subject of fundamental importance and concerns to all banks and indeed a prerequisite for local and global competitiveness banking (Connel & Saleh, 2004). The advancement in technology has played an important role in improving service delivery standards in the banking industry.

The Kenyan banking industry has changed drastically over a relatively short period of time with a very competitive market. The deregulation of the financial sector associated with the wind of globalization has brought new players leading in the competition and important transformation and innovation taking place in banks. With lots of banks and a very strong competition among existing players, banks have had to find ways to attenuate

the competition. Conventional banks have succeeded into offering Shari'ah compliant products and services to customers.

The banking sector has witnessed a re-packaging of banking and financial services to satisfy the ever changing needs of customers. More banks are increasingly offering new banking products. According to the Chief Executive Officer (CEO) of Gulf African Bank (GAB), Abdalla Abdulkhalik, marketing and innovation since the launch of the bank's new Gulf Visa Card, the GAB has managed to increase its popularity with many bankers today opting to go the cashless transaction way. Financial institutions will therefore be expected to redefine their business strategies while leveraging on innovative and affordable products so as to retain and capture new market segments (CBK, 2006). The way that lies ahead is to lead the industry towards a concentrated approach to developing new and unique products and improve the existing ones in terms of reduced costs and efficiency in delivery. This will, in turn, ensure penetration and consolidation in new and existing markets respectively, and enhanced profitability.

Agency banking is emerging as a key contributor to cheaper deposits, with CBK reporting that the licensed 19,649 agents conducted 10.2 million transactions valued at Ksh60.4 billion in the three months between March and June 2013. The increased number and value of transactions demonstrate the increased role of agent banking in promoting financial initiatives being championed by the Central Bank (CBK, 2013). While the rapid development of information technology has made some banking tasks more efficient and cheaper, technological investments are taking a larger share of bank's resources. Currently technology has become a bigger item in the budget of a bank.

1.1.4 Islamic Banking in Kenya

In Kenya Islamic banks are not separately defined in the Banking Act. All banks including those operating pursuant to Islamic Banking principles are subject to the requirements of the Banking Act. We should thus talk about Sharia compliant banking products. Indicators in the first year of operations of the two fully-fledged Islamic banks pointed to potential for Islamic banking in Kenya. There is still room to grow this market niche given tremendous expansion of Kenya's banking sector for instance, the number of bank accounts tripled from 2.6 million in 2005 to 6.4 million in 2008 (Gulf African Bank, 2009).

Islamic Banking prohibits interest but allows profit sharing. Therefore Sharia compliant lending products have element of "trading" and "holding of fixed assets" as the bank has to buy and sell financed assets. However, Section 12 of the Banking Act restricts trading and holding of fixed assets and thus the Banking Act was amended in 2006 to enable exemption of innovative products such as Sharia compliant banking lending products from trading and holding of fixed assets restrictions. Section 16 of Banking Act requires banks to pay interest on savings accounts so long as the minimum balance is maintained but Sharia compliant banking principles prohibit receipt of interest. Consequently, the Banking Act was amended effective 1st January 2009 to incorporate concept of "return" for Sharia compliant savings products.

Barclays' La Riba account was the first-ever Shari'ah-compliant account in Kenya. The account was set up in December 2005. However, Kenya's first Islamic bank, First Community Bank (FCB) was granted a banking license in May 2007. The bank started operations in November that year. Apart from FCB, Gulf African Bank is the other bank in Kenya with a license to operate as a fully-fledged Islamic bank. Other banks in Kenya

are increasingly applying to include Islamic windows in their businesses, for instance the latest entry by Standard Chartered bank.

Ndung'u (2011) highlighted that among the challenges facing Kenya's ambition to be a hub of Sharia compliant investment products to compliment the Islamic banking in the country are lack of; Shari'ah compliant investment vehicles, an enabling legal and regulatory framework and awareness by majority of the populace that hinder the uptake of these investments. For the country to fully embrace Islamic Finance, there is need to extend beyond the offering of Sharia compliant products by introducing such investment vehicles like unit trusts, corporate bonds (sukuks) and insurance (takaful) products and Sharia compliant treasury bills and bonds (government Sukuk).

1.2 Research Problem

The ever changing consumer needs, innovative financial products, deregulation, information technology upgrades, and the onset of multiple delivery channels are reshaping the financial services industry. To remain competitive in the new landscape, banks have continued to expand their product lines and add new delivery channels to develop more effective marketing systems and techniques, and enhance the service quality levels. Use of alternative channels such as electronic banking and mobile banking continue to be the frontiers upon which banks seek to enhance access to customers as well as differentiating their products. Tremendous growth has also been evidenced in agency banking conducted by commercial banks. As at December 2012, there were 10 commercial banks that had contracted 16,333 active agents facilitating over 38 million transactions valued at Ksh. 195.8 billion (CBK, 2012).

Several attempts have been made to investigate the impact of financial innovation on bank performance. Studies by Aduda & Kingoo (2012) showed that there exists positive

relationship between electronic banking and bank performance. They established that the adoption of electronic banking has enhanced Kenyan banking industry by making it more productive and effective. For example, banks build up sophisticated databases containing information about their consumers, and through data mining they are then able to target their commercial efforts more precisely, knowing which range of products individual consumers might be interested in buying. Technology also affects the very products that banks sell.

Sumiyu (2013) study established that the new market innovation strategies adopted by commercial banks were availability of resources and capabilities, creating and nurturing strong brands, aggressive anti-competitors marketing campaigns, creating value through pricing, environmental analysis and response to changes, customer satisfaction and retention. The study also established that commercial banks adopted product innovation strategies which helped the banks to earn more profit, faster business growth, invest more and also in improving the firm's productivity.

Absence of sufficient degree of financial innovation may pose a serious risk to the competitiveness of interest free banks in the fast changing financial market (Naser & Moutinho, 1997). A considerably large volume of literature is available on innovation in Kenyan commercial banks but few studies have focused on innovation in Islamic banking. It is against this background that this study shall concentrate on the effect of financial innovation on Islamic banking performance. Islamic banks have been providing the society with effective financial intermediation for the last three decades. However, in order to achieve smooth continuity in current profitability and future growth, it is imperative for Islamic banks to study the issue of having to remain innovative in the market.

1.3 Objective of the Study

The objective of this research study was to assess the relationship between financial innovation in Shari'ah compliant financial products and services and profitability of Islamic banking in Kenya.

1.4 Value of the Study

The findings and recommendations that shall come out of this study stand to benefit many stakeholders. The study will help investors assess the future prospective of the Islamic banking in Kenya hence could guide them in their investments, financing, and savings decisions. So far, only a minority of Muslims strongly believes in the Islamic mode of banking, whereas, a majority of Muslims and non-Muslims are somehow ignorant about it or are not deeply convinced about its viability. The investors would be made more aware of the recent trends in the Islamic financial market as far as new financial products are concerned.

The research may help banks to better strategize and better illuminate the future opportunities that Islamic banking can seize for greater profits and growth in the future. Potential commercial banks looking to venture into Islamic banking could also use this study to better understand the viability of future investments in Islamic banking.

The study will facilitate understanding the impact of the recent trends in Islamic financial innovations and thus assist regulatory authorities such as Kenya Banker's Association and Central Bank of Kenya to continue to pursue policies that create an enabling environment for Islamic banking in the country.

Lastly, the study builds on the existing body of knowledge and points out area for further research work. Researchers who wish to study the area of financial innovation will be made aware of the contribution of financial innovation for Islamic banking in Kenya.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter seeks to explore in depth the concept of financial innovation through a review of the various models and theories of financial innovation as well as empirical studies.

2.2 Theoretical Framework

2.2.1 Models of Innovation

Many models have been developed to help organizations understand and manage the innovation process. Rothwell (1994) identifies the simplest level as the linear model, which considers innovation as a sequence of activities. Dominant views in this model are that either technology or the market is the primary source of ideas to achieve successful innovation.

These views are termed technology-push and market-pull respectively. Other models emphasize on the importance of combining the knowledge of the different functional units of an organization. And yet others incorporate the technology-push and market-pull views and identify communication and feedback loops between the different elements of the organization and the external environment. The existence of many models of innovation does not, nonetheless, introduce a general model that may cater for all industries.

Rothwell (1994) identifies five generations of the models of the innovation process. The first and second generations are characterized by simple linear models, the so-called

technology-push and market-pull models respectively. The linear model of innovation has been influential in the science and industrial policy for many years (Trott, 2002). This model considers innovation to be a linear sequence of activities that are either technology-driven (technology-push) or market-driven (marketpull).

The technology-push view of innovation assumes a sequence of activities from the discovery of new ideas by scientists in research and development, application of the ideas to new products by manufacturing engineers and the promotion of the final product to customers by marketing personnel (Niosi, 1999). The third generation coupling models take into account the interaction and feedback between the different functions of an organization namely research and development marketing and manufacturing. The fourth generation models, namely integrated models, focus on integrating the activities of different parts of an organization working on projects in parallel and creating links and strategic alliances with other organizations. The fifth generation models, also called systems integration and networking model, are considered to be emergent and focus on the use of the interactive model of innovation in combination with organizational processes that aim at improving efficiencies in knowledge transfer.

However, Rothwell model suffered a few setbacks. The models have been widely criticized by many observers for their linear, sequential nature and for oversimplifying the innovation process. In some cases, IT appears to improve efficiency whereas in others it does not. The ability of IT to improve innovation efficiency probably depends on the nature of the product and technology in question and the depth of IT knowledge within the firm.

2.2.2 Drivers of Financial Innovation

2.2.2.1 Constraint-Induced Financial Innovation Theory

Silber (1983) advanced constraint-induced financial innovation theory. His theory pointed out that the purpose of profit maximization of financial institution is the key reason of financial innovation. There are some restrictions (including external handicaps such as policy and internal handicaps such as organizational management) in the process of pursuing profit maximization.

Though these restrictions not only guarantee the stability of management, they reduce the efficiency of financial institution, so financial institutions strive toward casting them off. Constraint-induced innovation theory discussed the financial innovation from microeconomics, so it is originated and representative. However, it emphasized “innovation in adversity” excessively so it can’t express the phenomenon of financial innovation increasing in the trend of liberal finance commendably.

Financial constraints significantly reduce the probability that a firm undertakes innovative projects. However, according to Silber (1983) financial innovation occurs to remove or lessen the constraints imposed on firms. Firms facing imperfections (e.g. regulation, entry barriers) have the greatest incentive to innovate and boost profits because of the high shadow costs of such constraints.

Lerner (2006) finds that more highly leveraged firms are less innovative. He also reports that less profitable firms are significantly more innovative (though profits rise post innovation) and argues this supports Silber’s (1983) argument that smaller, weaker firms should engage in more innovation. In this context Kenyan Islamic banks operate under such constraints as lack of an enabling legal and regulatory framework and unawareness

by majority of the populace that hinder the uptake of Islamic financial products. For instance, Barclays Bank set to woo Kenya's massive Islamic community with the introduction of an asset financing facility referred to as La-Riba Vehicle Finance and La-Riba Personal Finance products which the bank was hoping to appeal to the underserved Islamic community in Kenya.

2.2.2.2 Transaction Cost Innovation Theory

The transaction cost innovation theory pioneered by Niehans (1983) advocated that the dominant factor of financial innovation is the reduction of transaction cost, and in fact, financial innovation is the response of the advance in technology which caused the transaction cost to reduce. The reduction of transaction cost can stimulate financial innovation and improvement of financial service. This theory studied the financial innovation from the perspective of microscopic economic structure change. It thought that the motive of financial innovation is to reduce the transaction cost. However, the theory explained from another perspective that the radical motive of financial innovation is the financial institutes' purpose of earning benefits.

Transaction costs Innovation theory is also relevant in this context: for instance, the use of Internet-connected Information Technology (IT) can substantially reduce a firm's transaction costs as it enables efficient coordination, management and use of information. Mobile, Internet-connected IT may further lower transaction costs as it provides also off-site access to the firm's internal database and other relevant sources of information. Consequently, reduction of operation costs through agency banking, internet banking and mobile banking may influence growth in profitability for the bank.

2.3 Empirical Evidence on Islamic Banking Innovation

2.3.1 Review of Studies on Islamic Banking Innovation

Nader (2011) analyzed the profit efficiency of the Saudi Arabia Commercial banks during the period 1998- 2007. The study was conducted using a sample of 6 commercial banks (out of 11). The results of his study indicated that availability of phone banking, number of ATMs and number of branches had a positive effect on profit efficiency of Saudi banks. On the contrary he found that the number of point of sale terminals (POSs), availability of PC banking and availability of mobile banking did not improve profit efficiency.

Agboola (2006), in his study on Information and Communication Technology (ICT) in Banking operations in Nigeria using the nature and degree of adoption of innovative technologies; degree of utilization of the identified technologies; and the impact of the adoption of ICT devices on banks, found out that technology was the main driving force of competition in the banking industry. The study covered 36 out of the 89 banks in the country as at the end of 2005. A total of 216, 180 and 36 questionnaires were administered to the employees, customers and Head of Systems Units of the 36 selected banks respectively. During his study he witnessed increase in the adoption of ATMs, EFT, smart cards, electronic home and office banking and telephone banking. He indicates that adoption of ICT improves the banks' image and leads to a wider, faster and more efficient market. He asserts that it is imperative for bank management to intensify investment in ICT products to facilitate speed, convenience, and accurate services, or otherwise lose out to their competitors.

Shirley & Sushanta (2006) studied the impact of information technology on the banking industry and analyzed both theoretically and empirically how information technology (IT

related products are internet banking, electronic payments, security investments, information exchanges, Berger, 2003) related spending can affect bank profits via competition in financial services that are offered by the banks. Using a panel of 68 US banks for a period of over 20 years to estimate the impact of IT on profitability of banks, they found out that though IT might lead to cost saving, higher IT spending can create network effects lowering bank profits. They further contend that the relationship between IT expenditures and bank's financial performance is conditional to the extent of network effect. They say that if network effect is too low, IT expenditures are likely to; reduce payroll expenses, increase market share, and increase revenue and profit.

Mabrouk & Mamoghli (2010) in their study on Dynamics of Financial Innovation and Performance of Banking Firms: Context of an Emerging Banking Industry, analyzed the effect of the adoption of two types of financial innovations namely; product innovation (telephone banking and SMS banking and so on) and process innovation (Magnetic strip card (debit, ATM and credit card), Automatic cash dispenser; (Automatic teller machine; Electronic payment terminal and so on) on the performance of banks. Their analysis included two adoption behaviours, first mover in adoption of the financial innovation and imitator of the first movers. They found out that first mover initiative in product innovation improves profitability while process initiative has a positive effect on profitability and efficiency. Banks that imitate are less profitable and less efficient than first movers.

Babatunde & Adebisi (2011) studied the importance of innovation by taking a research study on "innovation management and organizational development", using United Bank for African Plc as a case study. Primary source of data collection was adopted and one hundred questionnaires were distributed. The study revealed that for any organization to

achieve the purpose of its establishment of profit maximization and going concern, and to increase its level of productivity, service delivery and sales turnover and remain in the market as leader such company must be able to introduce new innovation and manage effectively changes that occur in their industry and environment. They deduced that innovation management is very important for organization development. It is true that acquisition of modern technology will help an organization to boost if productivity and hence help in retaining its market share.

Tufano (1989) examined a cross-section of new securities to examine whether financial product innovators enjoy first mover advantages. Specifically, he used a sample of 58 innovations (representing 1,944 public offerings) to test whether investment banks that create new securities benefit by charging higher prices (underwriting spreads) than imitators or by capturing larger quantities. Tufano found out that, over the 1974-1986 periods, investment banks that created new products did not charge higher prices in the period before imitative products appeared and in the long run charged lower prices than rivals. However, these innovators underwrote more public offerings of products that they innovated, than did imitating rivals. Overall, Tufano's results are not consistent with monopoly pricing of new securities issues by innovators, but rather with the presence of cost advantages that allow these institutions to capture market share.

Gakure & Ngumi (2013) studied the influence that bank innovations have on profitability of commercial banks in Kenya. The study was carried out during the period of May to August, 2012. Three hundred and twenty five questionnaires were issued to various randomly sampled bank employees from 20 commercial banks. They found out that bank innovations have a moderate influence on profitability of commercial banks in Kenya. Banks in Kenya have achieved more than a decade of boosting their earning capability

and controlling costs through adoption of innovations like the mobile banking, internet banking and recently the agency banking.

2.4 Conclusion

The body of innovation literature has grown considerably over the last 3 decades. This has led to an increasing amount of different theories of financial innovation and models of innovation processes. In comparison to the conventional finance, Islamic finance literature on innovation is lagging behind. The literature used in this review sought to give insight to two theories of financial innovation that have relevance to the influence of financial innovation on bank profitability. Lastly, a review of the empirical studies showed that there has been a narrow focus on the impact of financial innovation on the profitability of Islamic banks.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology and procedures that were used for collecting and analyzing the data in the study. The chapter provides the target population, sampling technique and research design. In addition, the type of data and the data collection process and instruments used are explained. The last sub-section explains the data analysis.

3.2 Research Design

This study adopted descriptive and explanatory research design. The main focus of this study was quantitative in nature. However some qualitative approach was used in order to gain a better understanding and possibly enable a better and more insightful interpretation of the results from the quantitative study. The explanatory approach was used to investigate existing relationship between Islamic bank profitability and investment in innovation.

3.3 Population and Sample Design

Cooper & Schindler (2008) define a population as the total of the elements upon which inferences can be made. The population is the larger set of observations while the smaller set is referred to as the sample. The target population comprised commercial banks operating Islamic banking in Kenya.

The sampling frame for this study was derived from the list all the licensed commercial banks and mortgage finance institutions in operation in Kenya as at December, 2012 as

they appear in the Central Bank of Kenya website database. The sample units were eight (8) commercial banks operating Islamic banking in Kenya presented by Appendix 1. The sampled banks were selected because they operate Islamic windows except two which are fully-fledged Islamic banks.

3.4 Data Collection Methods

The study used both primary and secondary data. The primary data was collected using a structured questionnaire and the respondents targeted were managers of the sampled banks. The structured questionnaire, presented by Appendix 2, contained both open and closed ended questions. Closed ended questions were used since they are easier to analyze and facilitate harmonization of information to be obtained from the respondents. The study also used secondary data obtained from the Central Bank of Kenya annual reports.

3.5 Data Analysis Methods

The study used both descriptive and inferential statistics in analyzing the data. The closed-ended questions were coded and summarized to facilitate the calculation of mean scores. Regression analysis was used to test the relationship between financial innovation in Shari'ah compliant financial products and services and growth in profitability of Islamic banking in Kenya. The regression model that was evaluated is represented as follows:

$$BP_i = \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 \quad (1)$$

Where BP is Islamic bank's profitability represented by return on assets,

X_1 is the number of new Shari'ah compliant financing facilities offered by Islamic banks,

X_2 is the contribution of agency banking, internet banking and mobile banking to income generated from Islamic banking measured in percentage,

X_3 is the number of Islamic debit and credit cards issued by Islamic banks,

X_4 is the effect of maintenance cost for Islamic debit and credit cards on bank profit measured on a likert scale questionnaire,

X_5 is the contribution of margins generated from Islamic debit and credit cards to bank profit measured on a likert scale questionnaire and

β_i are the slope coefficients.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSIONS

4.1 Introduction

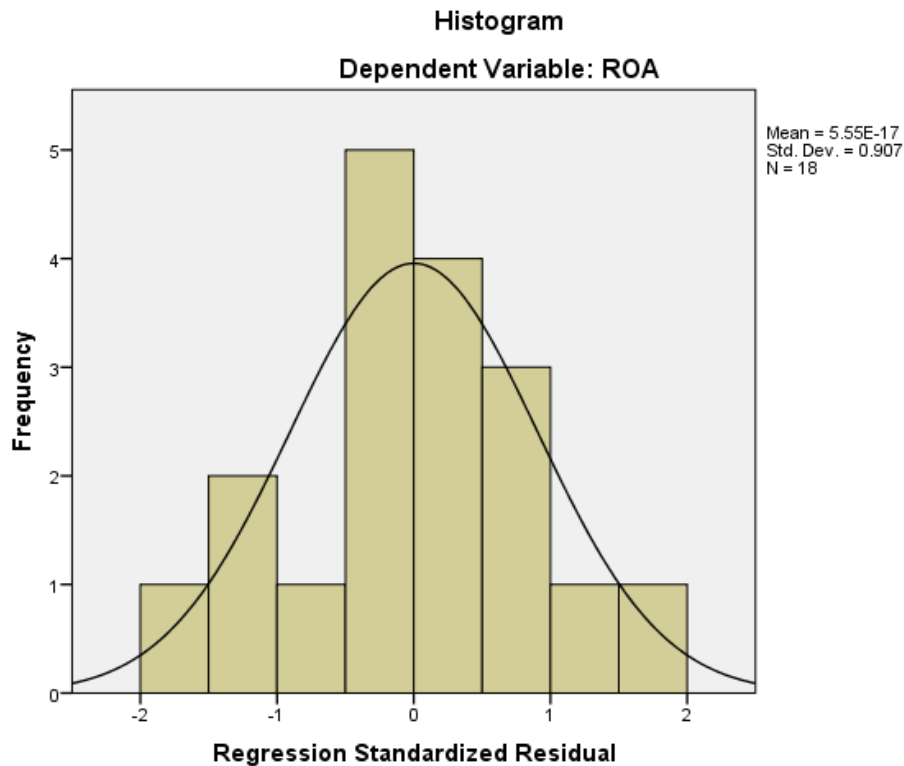
This chapter presents the results of the analysis, findings and discussions the relationship between financial innovation in Shari'ah compliant financial products and services and profitability of Islamic banking in Kenya. The study targeted eight (8) commercial banks that are operating Islamic banking and covered the period from 2009 to 2012. Out of the eight banks targeted, six responded which represented a response rate of 75%. These were considered adequate for the study.

4.2 Results of Research

The study sought to establish whether there exist a relationship between Islamic banking profitability and financial innovation. Bank profitability was measured by return on assets which was calculated by dividing banks' net profit before taxation by the total assets held by the bank over the study period. Financial innovation was measured by five independent variables; the number of new Shari'ah compliant financing facilities offered by Islamic banks, the contribution of agency banking, internet banking and mobile banking to income generated from Islamic banking, the influence of maintenance cost for Islamic debit and credit cards on bank profit, the number of Islamic debit and credit cards issued by Islamic banks and the contribution of margins generated from Islamic debit and credit cards to the bank's profit.

In testing for normality, it was found that the data used for analysis was fairly normal with a normal distribution shown in figure 4.1 below.

Figure 4.1: Test for Normality



Source: Researcher 2013

4.2.1 Effect of Islamic debit Cards Issued on ROA

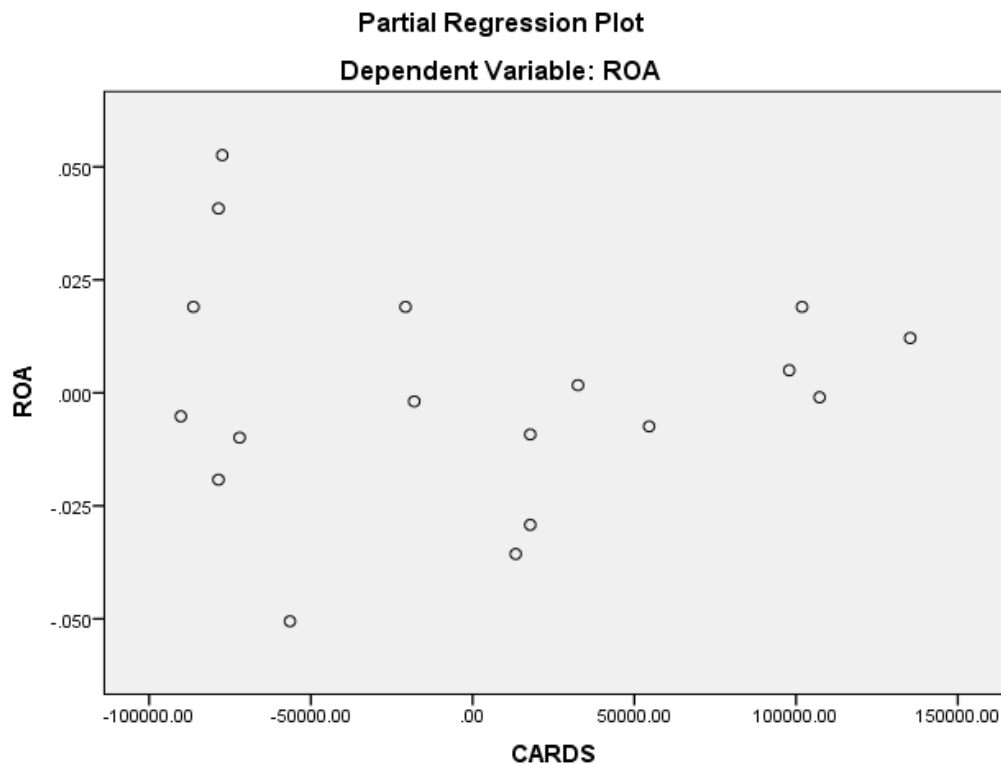
The number of Islamic debit and credit cards issued to customers by commercial banks was used as a measure of financial innovation. It was established that from 2009 to 2012, the debit and credit cards issuance were in upward trend. In establishing the relationship between Islamic debit and credit cards and the return on assets (ROA) of the bank during the period, the study found that there is no relationship between card issuance and ROA. The analysis obtained a coefficient of determination (R) of 0.05 and a correlation coefficient (R Square) equal to 0.003. Although there is a very weak or no relationship between electronic cards issued and return on assets, the findings revealed that the relationship would likely be only 5% linear and positive as shown in table 4.1 and figure 4.2.

Table 4.1: Effect of Debit and Credit Cards Issued on ROA

Model	R	R Square	Durbin-Watson	Coefficients	
				Constant (C)	Cards
1	.051 ^a	0.003	0.436	0.02	0.051

Source: Researcher 2013

Figure 4.2: Effect of Debit and Credit Cards Issued on ROA



Source: Researcher 2013

4.2.2 Effect of Agency, Internet and Mobile banking on ROA

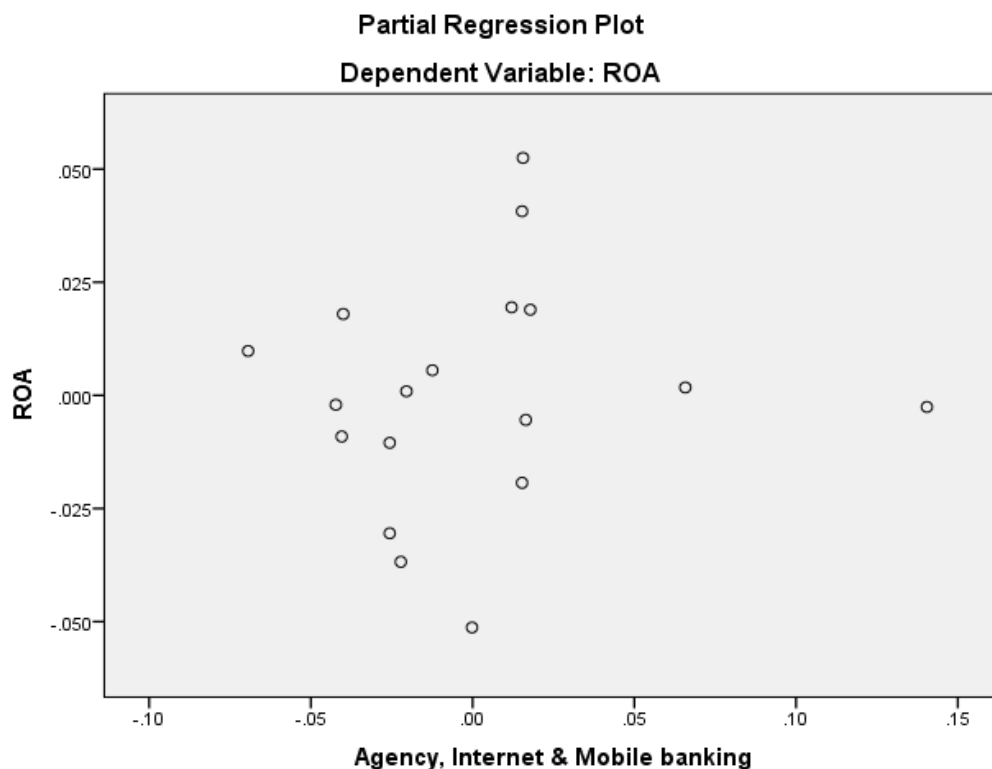
In establishing the effect of Agency, Internet & Mobile banking on return on assets, the study established a coefficient of determination (R) as 0.11 and Pearson Product moment (R Square) as 0.012 meaning a very weak positive linear relationship (11.1%) and no

causation as depicted by the correlation coefficient of 0.012 (near 0) as shown in table 4.2 and figure 4.3 below. Ndung’u (2011) concurs that mobile banking has revolutionised the money transfer business and has created further innovations that have lowered the transaction costs for both the banks and customers.

Table 4.2: Relationship between Agency, Internet & Mobile banking and ROA

Model	R	R Square	Durbin-Watson	Coefficients	
				Constant	Agency, Internet & Mobile banking
1	0.111	0.012	0.387	0.024	0.048

Figure 4.3: Relationship between Agency, Internet & Mobile banking and ROA



Source: Researcher 2013

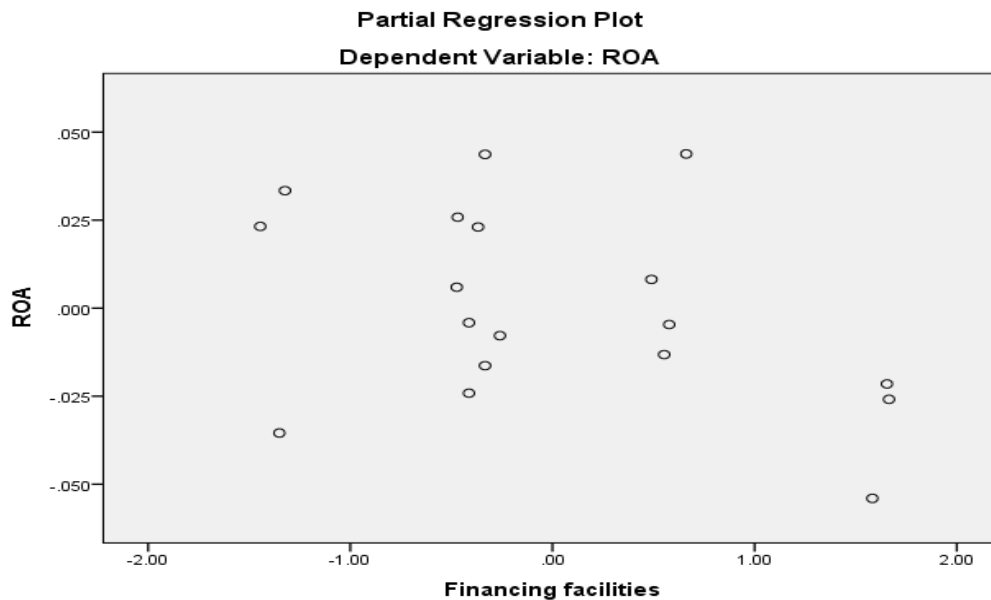
4.2.3 Shariah Compliant Financing Facilities and ROA

In establishing the relationship between the number of the number of Shariah compliant financing facilities and ROA, the findings revealed that there is a slightly stronger linear relationship between ROA and Shariah compliant financing facilities of the banks. Their relationship is 38.5% (weak) positive and linear with a weak correlation as indicated by a Pearson product moment equal to 0.148 as shown in table 4.3 and figure 4.4 below.

Table 4.3: Relationship between Shariah Compliant Financing Facilities and ROA

Model	R	R Square	Durbin-Watson	Coefficients	
				Constant	Financing facilities
1	0.385	0.148	0.569	0.036	-0.009

Figure 4.4: Shariah Compliant Financing Facilities and ROA



Source: Researcher 2013

4.2.4 Relationship between Maintenance Costs of Cards and Profitability

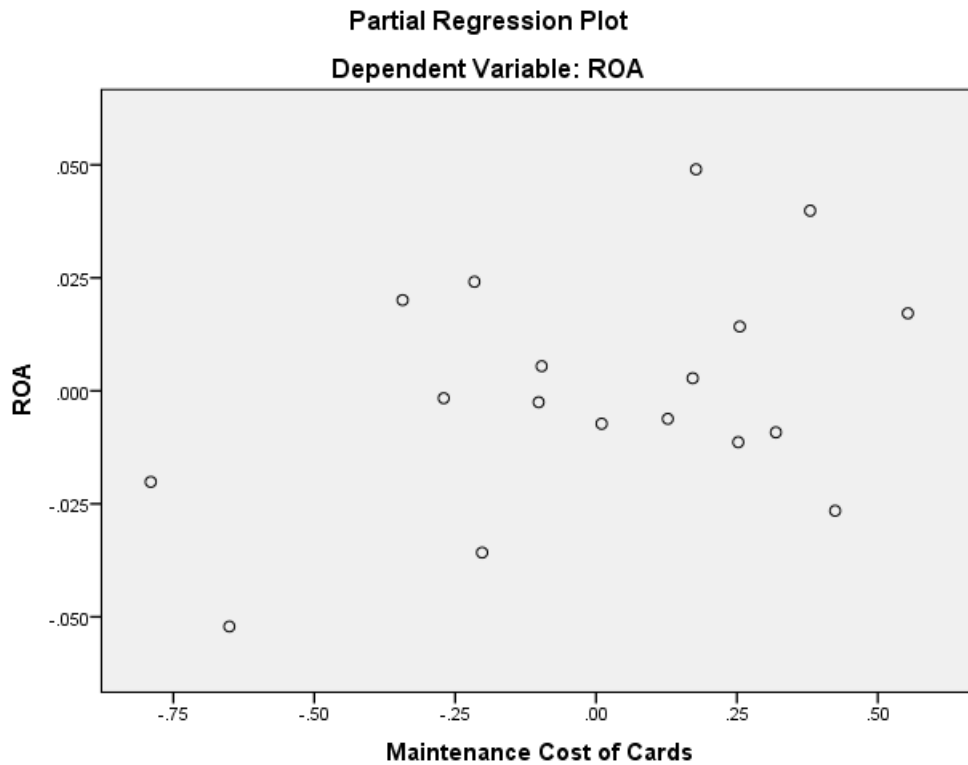
The study sought to establish whether Islamic debit and credit cards have low maintenance costs hence contributing positively to bank profitability. From the findings there is a weaker linear relationship between ROA and Maintenance cost of cards of the banks. Their relationship is 13% (weak) positive and linear with a weak correlation as indicated in the regression statistics R-squared was 0.017 as shown in table 4.4 and figure 4.5 below. This means that 1.7% variations from the expected and actual output (dependent variable: bank profitability) are explained by the independent variable (Maintenance cost of cards).

Table 4.4: Relationship between Maintenance Costs of Islamic Debit Cards and ROA

Model	R	R Square	Durbin-Watson	Coefficients	
				Constant	Maintenance Cost of Cards
1	.130 ^a	0.017	0.484	0.049	-0.008

Source: Researcher 2013

Figure 4.5: Maintenance Costs of Islamic Debit Cards and ROA



Source: Researcher 2013

4.2.5 Relationship between Margins from Islamic Debit Cards and Profitability

The study sought to establish whether income from Islamic debit and credit cards has a high margin hence contributing positively to bank annual profitability and from the findings it was established that there is a weaker linear relationship between ROA and Margins from cards of the banks. Their relationship is 14.2% (weak) positive and linear with a weak correlation as indicated in the regression statistics R-squared was 0.02 as shown in table 4.4 and figure 4.5 below. This means that 2% variations from the expected and actual output (dependent variable: bank profitability) are explained by the independent variable (Margin from cards). The findings contradict those of Agboola (2006) in a study conducted in Nigeria which concluded that smart cards or debit and

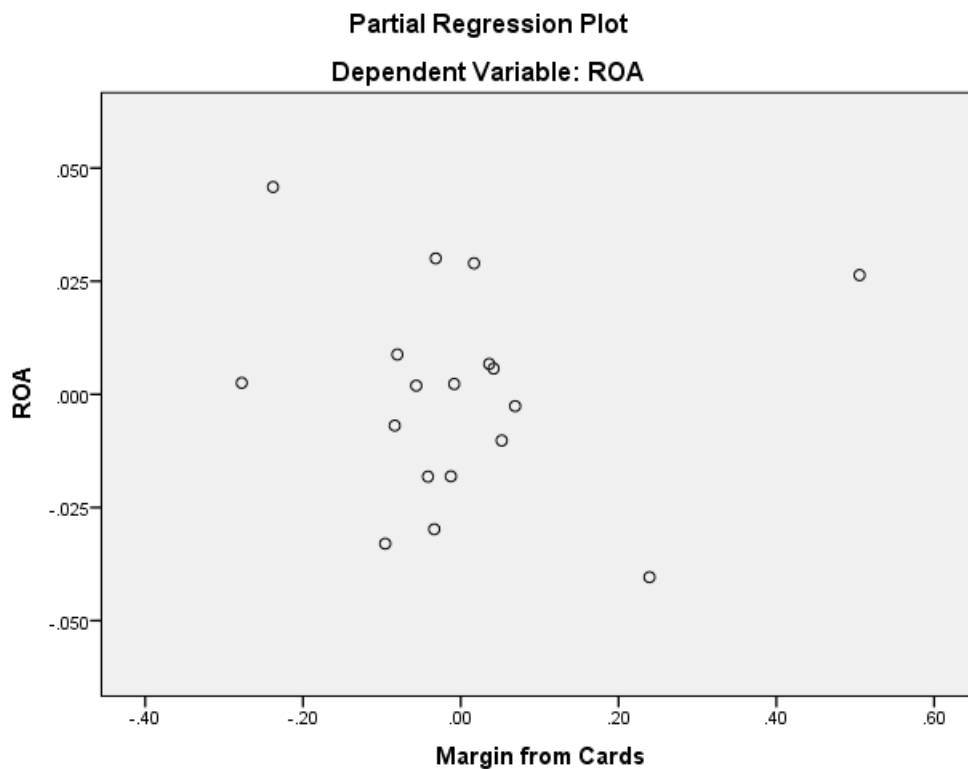
credit cards improved banks' income generation and had low capital needs and boosted bank profits.

Table 4.5: Relationship between Margin from Cards and ROA

Model	R	R Square	Durbin-Watson	Coefficients	
				Constant	Margin from Cards
1	.142 ^a	0.02	0.529	0.067	-0.019

Source: Researcher 2013

Figure 4.6: Margin from Cards and ROA



Source: Researcher 2013

4.3 The Multiple Regression Model

A regression of the five predictor variables against profitability (ROA) established the multiple linear regression model below as indicated in table 4.6;

$$ROA = -0.027 - 0.103x_1 + 0.260x_2 - 0.601x_3 - 0.052x_4 - 0.423x_5$$

Table 4.6: Multiple Linear Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients
		B	Std. Error	Beta
1	(Constant)	-.027	.119	-
	Cards	-2.788E-08	.000	-.103
	Agency, Internet & Mobile banking	.113	.151	.260
	Financing facilities	-.017	.008	-.601
	Margin from Cards	-.008	.039	-.052
	Maintenance Cost of Cards	.028	.018	.423

Source: Researcher 2013

The findings further established that the linear relationship between profitability (return on assets) and the five predictor variables; Number of debit and credit cards issued, Contribution of agency, internet and mobile banking, Number of financing facilities, Maintenance costs of Islamic debit cards and Margins from Islamic debit cards, is fairly linear (56.8%) with a coefficient of determination of 0.568 and Pearson Product moment 0.322 as shown in table 4.7 below. This shows that 67.8% of the variations in profitability is explained by other factors not captured in the model. It is also notable that the strength

of the relationship between profitability (ROA) and financial innovation increased with more variables of financial innovation.

Table 4.7: Statistics of Linear Relationship of the Multiple Linear Regression Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.568 ^a	0.322	0.040	0.02754

Source: Researcher 2013

4.4 Discussion

This study has established that a single innovation has a small effect on the profitability (ROA) of Islamic banking. Increasing the number of innovations enhances the relationship between profitability (ROA) and financial innovations. This was depicted by the fact that the linear relationship between financial innovation and profitability (ROA) became stronger in the multiple linear regression model as compared to the relationships in the simple linear regression models where each financial innovation was considered individually. This shows that ICT investment has had a strong influence on the structure and the activities of the banking sector; this allows transactions to be conducted more efficiently, technology allows banks to market their products more effectively.

The findings of this study are fairly consistent with the findings of the past researchers on this topic. Naser & Moutinho, (1997) established that absence of sufficient degree of financial innovation may pose a serious risk to the competitiveness of interest free banks in the fast changing financial market. As such, increasing financial innovations is seen as synonymous to enhancing the chances of growth in profitability (ROA) of Islamic banking.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter gives a summary of findings outlined in chapter 4, conclusions and recommendations of the study on the relationship between financial innovation and growth in profitability of Islamic banking in Kenya.

5.2 Summary of Findings

This study targeted eight (8) commercial banks that operate Islamic banking in Kenya. It covered the period between 2009 and 2012. Specifically, the study sought to establish the relationship between Islamic financial innovations and Islamic banking profitability. Return on Assets (ROA) was used to measure profitability which was calculated by dividing the banks' net profit before taxation by the average of the total assets held by the bank over the study period. Financial innovation was measured by; Number of Islamic debit and credit cards issued by Islamic banks, Contribution of agency banking, internet banking and mobile banking to income generated from Islamic banking, Number of new Shariah compliant financing facilities, Maintenance cost of Islamic debit and credit cards and Margin generated from Islamic debit and credit cards.

A regression analysis on each of the Islamic banking innovations above individually against the bank's profitability (ROA) revealed that there is a very weak relationship between individual innovations and profitability. The study established a multiple linear regression model of the form;

$$ROA = -0.027 - 0.103x_1 + 0.260x_2 - 0.601x_3 - 0.052x_4 - 0.423x_5$$

Where, X_1 , X_2 , X_3 , X_4 and X_5 represent the five independent (predictor) variables in the order given above.

In establishing the strength and the direction of the relationship, the findings revealed that there is a moderately positive linear relationship between financial innovations and Islamic banking profitability. This was demonstrated by a coefficient of determination of 0.568 and a Pearson Product Moment (Correlation coefficient) of 0.322. Notably, both coefficient of determination and Pearson Product Moment Correlation coefficient for the multiple model was greater as compared to that obtained from a regression of the bank's profitability and each of the individual financial innovations.

5.3 Conclusions

The study results showed that bank innovations have a moderate influence on profitability of Islamic banks in Kenya. The analysis on combined effect of bank innovations produced a coefficient of determination of 56.8% which shows the percentage of variations in profitability which is explained by bank innovations. Based on the summary of the findings the study concluded that if Islamic banking is to have meaningful contribution to profits such banks should adopt a composite of financial innovations. In general conclusion, agency, internet and mobile banking have made banking transaction to be easier by bringing services closer to its customers hence improving banking industry performance. Banks are looking to technology such as Internet banking, mobile banking and the use agency banking to support growth in profits. Henceforth they are continually using vast IT infrastructure to increase reach and utilisation of service delivery channels. Agent banking services, which cut transaction costs, have yielded increased transaction revenues that have contributed to profitability.

5.4 Recommendations

As Islamic finance keeps expanding, the supervisory authority specifically the Central Bank of Kenya will have to ensure that these new institutions become fully integrated with the rest of the financial system. The integration process will not only entail allowing Islamic institutions to operate, but also providing a comprehensive regulatory framework, as well as developing a supportive financial infrastructure. Importantly, the findings of this study fairly agree with past researchers such as Aduda & Kingoo (2012) who established that there is a positive relationship between electronic banking and bank performance. The study therefore recommends that banks offering Shariah compliant financial services should focus their efforts on financial innovations. The more the financial innovations a bank is able to adopt, the more its chances of enhancing its profitability.

5.5 Limitations of the Study

Islamic banking is relatively a new concept in the context of Kenyan banks. Hence, there was little information in relation to Islamic financial innovations. The narrow range data limited the study in relation to the data availability since only data for a few years could be obtained.

Agency banking was also recently commissioned in Kenya in April 2010. Due to the short span of the duration in which it has been in existence the study identified only three banks of the selected banks were engaging in the model.

Profitability of Islamic banking is affected by many other factors not captured in the model and not only financial innovation as focused on in this study.

5.6 Suggestion for Further Studies

This study was done only on the commercial banks operating Islamic banking in Kenya. A further study can be extended to other areas such as the Islamic insurance and diaspora banking in order to understand the implication of ICT on the overall Islamic financial market in Kenya.

The study also suggests that future studies could involve looking for the reasons behind the use of financial innovations by the banks. Is it for profitability enhancement or for other reasons like competitiveness, liquidity? Hence, future studies should focus on the relationship between financial innovations and liquidity of banks offering Islamic banking services.

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APPENDICES

Appendix A: Sampling Units

List of Selected Commercial Banks

1. First Community Bank
2. Gulf African Bank
3. Barclay's Bank Kenya
4. Kenya Commercial Bank
5. Chase Bank
6. Standard Chartered Bank
7. National Bank of Kenya
8. Dubai Bank Kenya

Appendix B: Questionnaire

1. Please indicate number of new Shari'ah compliant financing facilities offered by your bank in the period 2009 to 2012.

Year	2009	2010	2011	2012
Total Number				

2. Please indicate the contribution in percentage of agency banking, internet banking and mobile banking to income generated from Islamic banking in the period 2009 to 2012 (where applicable).

Year	2009	2010	2011	2012
Contribution in %				

3. Please indicate the number of Islamic debit and credit cards issued by your bank in the period 2009 to 2012.

Year	2009	2010	2011	2012
Total Number				

4. Please indicate the extent to which you agree or disagree with the following statements.

- a) Islamic debit and credit cards have had low maintenance costs hence contributing positively to bank profitability.

Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)

b) Income from Islamic debit and credit cards has had a high margin hence contributing positively to bank annual profitability.

Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)