EFFECTS OF FINANCIAL INNOVATIONS ON FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA, A CASE STUDY OF EQUITY BANK OF KENYA LTD

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Abstract: The banking sector in Kenya is one of the fastest growing sectors of the economy having registered significance growth in the past decade. However, very few studies have been done to examine the effect of financial innovation on performance of commercial banks in kenya especially equity bank of Kenya limited. The purpose of the study was to assess the effect of financial innovation on commercial bank's financial performance as the key players in the banking sector over a period of 3 years. Kenya's financial sector has undergone significant transformation in the last few years. Many new more efficient and real time financial systems have come into place. Despite the undeniable importance of financial innovation, its effect on financial performance is not always obvious since there are reported cases of reverse causality between innovation and performance.Study results indicated that financial innovation indeed contributes to and is positively correlated to profitability in the banking sector particularly that of commercial banks. This is further supported by high uptake of more efficient financial systems in substitution for the less efficient traditional systems. This is evidenced by the positive correlation between Real Time Gross Settlement and Automated Clearing House (Cheques & EFTs) throughput over time; as well as that of profitability and Automated Clearing House throughput.

Keywords: financial innovations,gross domestic product, information and communications technology, commercial banks, financial performance.

1. INTRODUCTION

1.1 Background of the Study

The embrace of technology into service industries is becoming a strong trend as service providers are currently being urged to empower in financial technology to advance their performance. Innovation creates array of competitive positions and enhances a firm's potentiality in the market (Cefis&Marsili, 2003). Competition has created a fast- paced industry where firms must transform in order to survive (Nyathira, 2009). Hence, many service sectors, Commercial banks (Banks) being part of it, have been left with no preference but to embrace innovation to meet and even to surpass customers' satisfaction and service expectations to improve their financial performance. Therefore, Maorwe (2011) urges banks to adopt new innovative means and strategies to finance their activities rather than only relying on the members' deposits.

In order to endure in the volatile and dynamic sector to attain its objectives within the competitive business environment, the Banks have to implement innovative strategies aimed at achieving competence in all operational levels by employing the most excellent practices that guarantee sustainability and growth (Mutuku, 2014). As observed by Grey (1996), the present day customers' stresses on innovative products, prompt delivery and good service provision and all of these are determined by the means that can advance the performance of routine tasks and non- routine projects to enable the organization personnel to collaborate and optimize processes of collecting, transforming and sharing the existing

knowledge. Kotler (2003) contends that change is inevitable and yesterday's determinants of success can be today's determinants of failure. According to Arnold(1996) ,an organization must respond suitably to changes in their environment in order to survive and to attain strategic objective.

In the industry life cycle, at the introduction stage many new firms lacking proper competitive strategies exit industry and at the decline stage well established firms are also threatened to shakeouts therefore innovation is essential to both new and well established firms for survival (Hitt, Michael, Ireland &Hoskisson, 2001); in their study on the impact of the life cycle and technology on firm survival, focused on structural features of the firm as determinants of survival probability of a firm. The empirical evidence suggested that the relationship between firm size and the likelihood of survival is shaped by technology and the stage of industry life cycle. Schumpeter (1942) also argued that the major agents that drive innovation and the economy are the large companies that possess the capital to invest in R&D of new products and services and deliver them at a cheaper cost to customers, thus raising their lively hood.

Financial performance of a firm predicts the firm's health and ultimately its survival probability within the market. As observed by Pandey(1995), It also reflects the management skills in utilizing the firm's scares resources to yield great profits. Therefore, it is presumed that high performance reflects management's effectiveness and efficiency in making sound decisions on firm's resources to attain profitability and growth and in turn raise the country's economy at large (Naser&Mokhlar, 2004). Consequently, according toOlando,Mbewa,Jagongo (2012) the financial stewardship are challenged to work effectively in order to boost banks' wealth, sustain value and meet the shareholders' demands.

1.1.1 Financial Innovation

Bulut (2013) defined financial innovation as an introduction or improvement of a product, service or process which has benefits to the participants of any financial activity. The benefits can be reduction in costs, reduction in risks, increasing profits, increasing living standards, and provide improved services to the financial participants. Solans (2003) "financial innovation is both technological advances which facilitates access to information, trading and means of payments and to the emergence of new and complete financial markets." While on the same note, Frame and White (2002) assert that financial innovations can be grouped as new products, new services and new "production" processes, or new organizational forms. Consequently, a new intermediate product or service created to be used by financial services firms may form part of a new financial production process.

Innovation is crucial to the continuing success of any organization (Kimberly, 1979). Hence, the ability of any organization to rapidly adapt to a new technology enables it to stay a pace ahead of competition (Shapiro, 2009).The developments in the financial sector have brought affirmative changes within the economy like increased number of financial institutions, development in level of sophisticated and new payment systems, and asset alternatives to holding money (Nyathira, 2012); (Cherotich, Sang, Shisia&Mutung'u, 2015) tailored to meet demands of financial participants. This has resulted mainly from technological advancement and enhancement in competition as the number of institutions increase.

Various economist theorists like Joseph Schumpeter, Karl Max, are considered as the first scholars to come up with different assumptions in explaining why financial innovations occur. Their theories gave rise to other scholarly theories on innovation that includes Kane's (1984) technology and political theory which explains financial innovation as an institutional response to financial costs created by technology. Miller's (1986) regulation and taxation theory that contributes to financial innovation attempts to alter the amount and timing of taxable income. Silber's (1972) constraint theory, considers product innovation as the response of an organization to the constraints placed upon it.

1.1.2 Financial Performance

Financial Performance is the practice of measuring the results of a firm's strategies, policies and operations in monetary term (Kaguri, 2013). These results are reflected in the firm's return on assets and return on investments. It measures the financial health and survival probability of a firm over a given period of time (Wanjiru, 2012) and can be used as a basis for comparison of similar firms across the same industry or to compare industries or sectors in aggregation.

Basing on organizational goals of different firms, diverse methods are adopted by these firms to measure their performance. The performance indicator can be measured in financial and nonfinancial terms (Bakar and Ahmad, 2010). Njeri, (2013) also contends that a firm's goal may be financial such as an increase in sales, profits or non- financial such as customer satisfaction, employee satisfaction customer retention, market expansion, and customer retention, financial

viability, relevance, efficiency and effectiveness. Although, many firms, desire to implement only financial indicators to measure their performance (Grant et al., 1988) nevertheless, financial elements are not merely indicator for measuring firm performance. A firm requires combining financial measurement with non-financial measurement in order to adapt to the changes of both internal and external environments (Krager and Parnell, 1996).

Banks' financial performance will measured in terms of liquidity level, firm's efficiency, profitability and loan portfolio.

1.1.2.1 Liquidity Level

The liquidity of an asset means how quickly it can be transformed into cash (Tobin, 1958). When referring to Bank liquidity one usually means its ability to meet its current liabilities and is usually measured by different financial ratios such as current ratios, quick ratios, cash ratios, net working capital ratio (Eljelly,2004).

Institutions having a good asset quality, strong earnings and sufficient capital may be unsuccessful if they do not maintain adequate liquidity (Omino, 2014) therefore, banks should ensure that they have enough liquidity to enable them meet their daily obligations. Pandey (1995) affirms that lack of sufficient liquidity will result a firm into three situations: poor creditworthiness, loss of credit confidence or even in legal tangles resulting in the closure of the firm.

 Pass and Pike (1984) contends that companies are supposed to look for means to increase liquidity and improve cash flows. Thus suggested strategies like working capital management and cash management to be adapted within the firm to improve liquidity and cash flow for these are areas which are generally ignored during favourable business conditions. On the same note, Puneet and Parmil (2012) posit that adoption of liquidity risk management that entails forecast and controlling of current asset and liabilities in financial sector will result in eradicating the risk of failures to meet short term obligations and to evade extreme investment in those assets. Consequently, it is essential for banks to strike suitable balance between high liquidity and lack of liquidity.

1.1.2.2   Firm's Efficiency

Efficiency is a level of performance that describes a process that uses the lowest amount of inputs to create the greatest amount of outputs. Efficiency relates to the use of all inputs in producing any given output, including personal time and energy (Isard, et al, 2007). Zala (2011) also defined efficiency as fatless and speedy compliance to the process or system procedure. Ability to provide a specified volume and quality of service with the lowest level of resources capable to meet the specification, performance measures and or indicators is a requirement. These include measures of productivity, unit volume of service etc (Carter & Klein, 1995). These measures once adopted will facilitate in minimizing of the resources to accomplish the Banks objectives.

There are several types of efficiency. The major ones are financial efficiency and operational efficiency. Financial efficiency is a measure of how healthy an organization has managed certain trade offs (risk and return, liquidity and profitability) through utilizing its financial resources (Ross, et al, 2008). It measures the intensity by which a business utilizes its assets to generate gross revenues and the effectiveness of producing, purchasing, pricing, financing and marketing decisions (Kaplan & Norton, 1996). While Operational efficiency of an organization is the capacity to utilizes its existing resources to the maximum extent. Therefore, operational efficiency can be judged in the light of financial efficiency (Ross, et al, 2008).

Adoption of high levels of efficiency amid banks would consequently increase access to finance, higher profitability and increased financial services to the financial participants.

1.1.2.3   Profitability

A profit is the difference between revenue and expenses over a period of time (Schumpeter, 1934). Profits are critical to a firm's survival and growth over a lengthy period of time. Sufficient profits earned by a firm sustain its business operation to be capable to attain funds from investors for expansion, growth, and also to contribute towards the welfare of the society (Brigham, 1979).

Profitability is always perceived as the corporate success and an essential indicator of economic performance (Ogden & Watson, 1999). It is also perceived as a valuable tool to measure firm's performance in terms of financial success and efficiency of management (Brigham, 1979). Rasiah (2010), in his study on measuring profitability of commercial banks, he observed that measure of profitability gives an indication of what the banks earns on the shareholders' investment.

Maximizing profits is an objective of all firms (Baumol, 1962). Profits lead to an inducement to invest as well as to innovate. It is a yardstick that tests the efficiency of a firm thus the success of a firm can be judged by the extent of profit earning capacity (Brigham, 1979). Hence, banks management should strive to implement high standard of efficiency at all operational levels with the aim of maximizing profit.

1.1.2.4   Loan Portfolio

Loan portfolio constitutes loans that have been made and are being held for repayment (Essendi, 2013). The core objective of cooperatives is to pool savings for members and in turn provide them with credit facilities (loans). Loans serve as a single ultimate source of earnings for the lending institutions (banks being part of it) and it represents major and utmost yielding assets on their balances sheet. It is obvious that the more banks offer loans the more it does generate high revenue and more profit (Abreu and Mendes, 2000).

The value of the loan portfolio depends not only on the interest rate but also on the likelihood that both the interest and principal will be paid (Jasson, 2002). Banks have to be cautious in offering more loans to customers for they are exposed to liquidity and default risks which impacts negatively on their profits and survival (Rasiah, 2010). Absanto and Aikaruwa (2013), note that banks are required to meet their members' socio-economic objectives and at the same time maintain its financial viability. The success or failure in members' financing as well as financial position therefore relies on the loan recovery performance.

Effective management of the loan portfolio and credit function is fundamental to BANKS s safety and soundness (Essendi, 2013). Risks that are in intrinsic in the credit process can be managed and controlled through loan portfolio management (LPM). Hence, review of LPM process is so vital; it's a principal supervisory activity (Koch, 2000).

1.2 Commercial Banks in Kenya

The Banking sector in Kenya is governed by multiple rules such as the Companies Act, the Banking Act, the Central Bank of Kenya Act and various prudential guidelines and policies issued by the Central Bank of Kenya (CBK) (CBK, 2011). Reforms in the banking sector started in 1994 with failure of several banks in Kenya. The financial sector in Kenya was finally liberalized in 1995 where exchange controls and other control regimes were lifted.

As at 31st Jan 2016, Out of the 43 institutions, 39 commercial banks and the mortgage finance institution are privately owned while the Kenya Government holds controlling stakes in the remaining 3 commercial banks. 25 of the 39 privately owned banks and the 1 mortgage finance institution are locally owned (i.e their controlling shareholders are domiciled in Kenya) while 14 are foreign owned.

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

Commercial banks in Kenya have developed new financial innovations that have influenced their financial performance; these include Mobile and internet banking, RTGS, ATM withdrawals and deposits, online account opening, unsecured lending among many others. All these financial innovations contribute heavily in building customer base, capital base as well as enhancing their profitability which results to improved financial performance. Financial performance of banks is usually measured using a combination of financial ratios analysis, benchmarking, measuring performance against budget or a mix of these methodologies (Barley, 2000) the common assumption which underpins much of the financial performance research and discussions is that increase of financial performance leads to improved functions and activities of the banks.

1.3 Statement of the Problem

Commercial banks in Kenya have undergone great challenges during the last two decades. The sector has faced great competition from other financial institutions (Tsuma, et al, 2015) like commercial banks and micro finances which have an ample financial potential to take the challenge by investing in faster and more competent systems, and reorienting towards innovative products with great quality that can suit customers' needs within the same market (Mutuku, 2014). These institutions aim at the mid to low income e earners who form the base of banks membership (Njeri, 2013). This situation has geared an urge for greater degrees of efficiency and technological advancement among banks which is

believed to result in greater access to finance, higher profitability and increased financial services to financial participants. Kumar and Saqid (1996), argue that competitive pressure heightens the need for conducting R&D especially for small and medium sized firms.

The notion of financial innovation and its effect on financial performance has received significant concentration and has been acknowledged as an input matter in the organization's survival probability. Different scholars have conceptualized and assessed financial performance (profitability) in different sectors by gauging different variables like size, investment, liquidity and age of the firm resulting to unlike dimensions and financial performance implications making research conclusions ambiguous and varied. Cefis and Marsili (2003), they observed that the principal technological characteristics in a sector are the dynamic forces for the survival of a firm than the firm's specific characteristics as age and size. While Mehjardi (2012), Mike (1996), Chen & Wong (2004) and Dunne & Hughes (1994), found that size, age, investment and liquidity are the major determinants of profitability.

Despite the undeniable importance of financial innovation in explaining banking performance, the impact of innovation on performance, is still misunderstood for two main reasons. 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. Most of the existing studies also adopt a simplistic approach to the innovation-performance relationship which does not take into account the antecedents to innovation inside and outside the banking organization, all of which could influence this relationship. Studies on financial innovation have been based other financial markets with little emphasis on the banking sector.

This study therefore aimed at filling this gap by answering the following research question: What is the effects of financial innovations on the financial performance of commercial banks in Kenya, a case study of Equity Bank of Kenya Ltd. Kitengela branch.

The general objective of this study is to determine the effects of financial innovations on financial performance of Equity Bank of Kenya Ltd .Kitengela branch.

2. LITERATURE REVIEW

2.1 Introduction

This Chapter outlines the contributions by various researchers to the body of knowledge on financial innovation. This includes the concept of financial innovation, importance of financial innovation, theories of financial innovation, financial innovation instruments, the empirical studies and summary of the study.

2.2 The Concept of Financial Innovation

Academicians and policy maker rarely understate the importance of innovation. Indeed, innovation is an essential condition of economic progress and a critical element in the competitive struggle of both enterprises and nation states it has been estimated that over 60 per cent of all economic growth is due to technological advance rather than improvement in productivity (Freeman and Soete,1997).

Small and medium sized enterprises (SMEs) in their turn have a considerable contribution to make innovation generally and technological change specifically. While it's now accepted that there is no optimum size of enterprise that is particularly designed to maximize innovation, intuitive common sense and considerable research evidence confirms that small firms have a distinct crucial role o play (Storey and Sykes, 1996)

According to Turfano (2002), Financial innovation is the act of creating and then popularizing new financial instruments as well as new financial technologies, institutions and markets. Financial innovation is the catalysts behind the evolving financial services, industry and restructuring of financial markets. It represents the systematic process of change in instruments, institutions and operating policies that determine the structure of financial system.Tufano (1995, 2002) shows that far from being confined to the last few decades, financial innovation has been part of the economic landscape for centuries.

If the world was free from all imperfections – such as taxes, regulation, information asymmetries, transaction costs, and moral hazard- and if markets were complete in the sense that existing securities spanned all states of nature, financial innovations would benefit neither private parties nor society and would simply be neutral mutations.Imperfections

stimulate financial innovation; they prevent participants in an economy from efficiently obtaining functions they need from financial systems. Financial innovations are optimal responses to various basic problems or opportunities, such as incomplete markets that prevent risk shifting or asymmetric information (Frame and White, 2009-2010)

2.3 Importance of Financial Innovation

Metrons (1992) sites that in an incomplete market, not all states of nature can be spanned, and as a result, parties are not able to move funds freely across time and space, or to manage risk. There are incentives to set up markets for securities for which there are no close substitutes, and which may be used to hedge substantive risks.

Pianalto (2007) pointed out that innovations allow markets to craft specialized mortgage contracts and to transfer risks and financial innovations has clearly benefited consumers by driving down costs. The author pointed out that since 1985, initial fees for conventional mortgage loans have fallen from roughly 2.5% of loan balance to about 0.5%. Additionally, a combination of legal and financial innovations has brought a big increase in the number of players in the mortgage market, including brokers and rating agencies.

Mwangi (2007) found that persistent conflicts of interest between outside capital providers and self-interested managers, and asymmetric information between informed insiders anduniformed outsiders, leads to equilibrium in which firms issue a multiplicity of securities.

Outside investors cannot easily assess the value of theirassets, the institutions turn to investment banks to place these securities with theirnetwork of clients. These investment banks innovate, creating new pools of these low-gradeassets. Agency considerations interact with marketing costs to produce innovation.

Odhiambo (2008) found out that financial intermediaries permit households facingtransaction costs to achieve their optimal consumption-investment program and many of the process innovations in payment systems technologies are aimed atlowering transaction costs. ATMs, smart cards, and many other new businesses are legitimate financial innovations that seek todramatically lower the sheer costs of processing transactions.

Ho (2006) argues that taxes are a major source of "imperfection". The search to maximize after-tax returns has arguably stimulated much innovation, and changes in tax law in turn stimulate even more innovation. Innovation responds to regulatory constraints, which in turn are adjusted in reaction to these innovations. Bank capital requirements are a good example of regulations that impose costs on the affected parties, who then use innovation to optimize in light of these constraints

2.4 Theories of Financial Innovation

Various theories have been put across to explain why financial innovations occurs, they include:

2.4.1 Silber's Theory of Financial Burden

Silber (1975).This theory is one of the most influential theories of financial innovation, this theory considers product innovation as the response of an organization to the constraints placed on it .in its theory basic hypothesis emphasized on the microeconomic framework of financial innovation. It could be summarized in the phrase that firms face some financial constraints and try to remove or lessen their financial burden.

Silber defines the particular conditions that will enable the emergence of a financial innovation (dividing them into instruments and practices), such as the arrival or imposition of an exogenous constraint. He discerns two kinds of constraint: a possible reduction of the firms utility, hence a new tool is required to bring it back to its previous level of utility ' abnormally' high (' success innovation') .He proposes that the three ways possible ways a financial firm could be innovative are: by endogenizing an exogenous item of the balance sheet, introducing an existing financial instrument from another country or industry into the firm's portfolio and thirdly as the mixture of the above two ways, taking the form of a modification of an existing instrument (Silber, 1975).

Silber (1983) provided us with four different types of financial innovation: microeconomic theory, market structures, innovational welfare impact and institutional organization. He highlights that firms that are less profitable in their respective sector are dispropriately innovative. Moreover, their decrease in profitability, which can be attributed to external competition or Government regulation.

2.4.2 Kane's Theory of Regulatory Dialectic

Kane (1984) sees financial innovation as an institutional response to financial costs created by changes in technology, market needs and political forces, particularly laws and regulations. Kane refers to the interactive process of regulation that follows institutional avoidance and innovation as dialectical process.

In his model He explain most of the evolution that took place in the US during the 1960s and 1970s where his main focus was the regulatory dialectic between the federal banking regulation and the exogenous market forces such as technological change, changing banking environment and increasing uncertainty about future financial developments. He approaches innovation as an arbitrage instrument trying to take advantage of regulation lags. Innovation takes the form of product substitution in order to circumvent regulation sometimes by just rearranging contracts and simply moving along different financial systems (Kane, 1997). Kane's contribution is essential for the better understanding of the existence of dialectic between the Kenya banking sector and exogenous factors.

2.4.3 Miller's regulation and taxation a theory of financial innovation

Miller (1986) stated that major innovations in the last 20 years have been almost exclusively the results of changes in tax laws and regulations changes. Miller attributed the development of many financial claims to attempts to alter the amount and timing of taxable income. Miller also notes that financial innovations are as a result of regulatory barriers and desire of financial firms to avoid the impact of regulatory constraints. This theory holds that investors should be very concerned about regulatory practices and taxation, and how those factors impact the types of securities that are issued by different entities. The investor should remain relatively unconcerned about any liabilities currently held by the issuing entity.

Miller (1986) places great emphasis on the role of taxes and government regulation in stimulating financial innovation. Adjustable rates mortgage (ARMS's) is an example of innovations that are consistent with this theory the tax reform act of 1986 which ended federal income tax deduction for non- mortgage consumer debts, spurred substantial growth in home equity lending. The theory is further supported by one of the Modigliani's- Miller proposition that states that taxes and regulations are the only reasons for investors to care what security firms issue whether debt, equity or any other security.

2.5 Measures of Financial Performance

According to Barney (1991), the following should be used in measuring financial performance of a firm:

2.5.1 Cash Flows

Investopedia defines cash flows as: A revenue or expense stream that changes a cash account over a given period. Cash inflows usually arise from one of three activities - financing, operations or investing - although this also occurs as a result of donations or gifts in the case of personal finance. Cash outflows result from expenses or investments. This holds true for both business and personal finance.

According to Harvey (2005), In business as in personal finance, cash flows are essential to solvency. They can be presented as a record of something that has happened in the past, such as the sale of a particular product, or forecasted into the future, representing what a business or a person expects to take in and to spend. Cash flow is crucial to an entity's survival. Having ample cash on hand will ensure that creditors, employees and others can be paid on time. If a business or person does not have enough cash to support its operations, it is said to be insolvent, and a likely candidate for bankruptcy should the insolvency continue. The statement of a business's cash flows is often used by analysts to gauge financial performance. Companies with ample cash on hand are able to invest the cash back into the business in order to generate more cash and profit.

2.5.2 Working Capital

According to Raymond (1981), Working capital is a financial metric which represents operating liquidity available to a business, organization or other entity, including governmental entity. Along with fixed assets such as plant and equipment, working capital is considered a part of operating capital. Net working capital is calculated as current assets minus current liabilities. It is a derivation of working capital, that is commonly used in valuation techniques such as DCFs (Discounted cash flows). If current assets are less than current liabilities, an entity has a working capital deficiency, also called a working capital deficit.

According to Wikipedia (*en.wikipedia.org/wiki/Workingcapital),* One of the main advantages of looking at the working capital position is being able to foresee any financial difficulties that may arise. Even a business that has billions of dollars in fixed assets will quickly find itself in bankruptcy court if it can't pay its monthly bills. Under the best circumstances, poor working capital leads to financial pressure on a bank , increased borrowing, and late payments to creditor - all of which result in a lower credit rating. A lower credit rating means banks charge a higher interest rate, which can cost a corporation a lot of money over time Decisions relating to working capital and short term financing are referred to as working capital management. These involve managing the relationship between a firm's short-term assets and its short-term liabilities. The goal of working capital management is to ensure that the firm is able to continue its operations and that it has sufficient cash flow to satisfy both maturing short-term debt and upcoming operational expenses.

2.6 Financial Innovation Instruments

According to Frame & White (2009-2010) Technological advancement in information process have created many innovations in the financial service business. For this research, the financial instruments mostly used by the Kenya banks.include telephone banking for processing payments and computerized accounting for data storage and processing of bills as explained below:

2.6.1 Telephone Banking

According to Balachandher*et al*, (2001), Telebanking (telephone banking) can be considered as a form of remote or virtual banking, which is essentially the delivery of branch financial services via telecommunication devices where the bank customers can perform retail banking transactions by dialing a touch-tone telephone or mobile communication unit, which is connected to an automated system of the bank by utilizing Automated Voice Response (AVR) technology"

M-PESA is a world-renown service which allows users to transfer money using a mobile phone. It is offered by in Kenya by Safaricom, Kenya's largest mobile phone operator, and part of the Vodafone Group. Registration is free and available at any of the thousands of agents spread all over the country. The M-PESA application is installed on the SIM card and works on all makes of handsets. Organizations can benefit from this service due to the convenience it provides in collection of payments as their customers can pay for bills from anywhere, anytime as long as they are registered for M-PESA and have money in their M-PESA account.

2.6.2 Computerized Accounting

According to White (2000), With the rapid development of electronic technology and the popularity of the use of computerized information systems, computerized accounting internal controls in the continuous emergence of new issues on the enterprise internal control system would be a great impact on the enterprise the internal control system in the new environment seems behind the curve, due to the particularity of computerized accounting system, establish a set of computerized accounting system for the internal control system has become particularly important.Computerized Accounting is based on contemporary computer technology-based electronic technology and informationtechnology applied to the accounting practice in the short based on its own characteristics, and manual accounting as compared with the computing speed, storage capacity, a high degree of data sharing, Search query speed fast, easy to produce reports, data analysis and accurately and so on. Its use, the accounting staff can save a lot of human, material and time.

2.7 Empirical Studies

Various studies has been carried out on various parts of the world in the area of financial innovation, However limited research has been carried out in this area in kenya, most noted been:

Tufano (1995, 2003) survey on financial innovations from a wide variety of disciplines: financial, economic, history, law and industrial organizations. According to Turfano, financial innovation is the continuous development of new products, services and technology to deliver services and products. Financial innovation is the catalyst behind evolving financial service, industry and restructuring of financial institutions or public institutions.

Silber (1975), Kane (1984) Miller (1986) came up with various theories placing great emphasis on the role of taxes and government regulation in stimulating financial innovation. The authors (Silber, Kane and Miller) points out that the reason of financial innovation is profit maximization of financial institutions hence sustainability.

Miller (1992) and Finnerty (1992) in their studies on financial innovation found out that financial innovations occurs when banks try to relocate risks, increase liquidity or circumvent regulatory constraints. They argued that the value of the firm depends on the earnings and risks of its assets (business risks) rather than the way in which assets have been financed.

Frame and White (2004) categorized financial innovations into three categories namely: new products and services, new production process; and new organizational forms. They mentioned that as the firm attempts to develop and apply new technology or develop new products, it encounters several challenges, key among them is ensuring there is sufficient and sustainable human capacity know how and learning in place to a bank. and complement the investment in new process development.

According to Ignazio (2007), financial innovation has not only opened up new opportunities for the sector participants, but also increased new market players arising from new products in the financial market. Innovation have been seen principally as the means to turn research results into successful products hence innovation can stem from adopting new technologies or processes.

Mwangi (2007) carried out a study on Factors Influencing Financial innovation of Companies listed at Nairobi Stock Exchange with objective of explaining the macro- environmental and micro environmental factors influencing financial innovation in Kenya's securities market. The study concluded that Kenyan laws protecting investors was the major factor influencing financial innovation. This result is similar to the finding by Frame and White (2002). Further, the research finding showed that unstable forex rates were the most important factor influencing financial innovation.

Levine (1997) in his study on financial development and economic growth noted that financial innovation is crucial indeed indispensable for sustainable economic growth. He argues that resources include 'all assets' capabilities, organizational process, firm attributes, information, knowledge controlled by a firm that enable the firm to conceive of and implement strategies that improve efficiency and effectiveness.

Gunday, Ulusoy, Kilic&Alpkan (2011)in his study on the effects of innovations on firms" performance, sought to explore the effect of the organizational, process, product and marketing innovations on the different aspects of firms performance including innovative, production, market and financial performances, based on an empirical study covering 184 manufacturing firms in Turkey. The results revealed positive effects of innovations on firm performance in manufacturing industries. An empirical study by Lin and Chen (2007) on SMEs in Taiwan found out that firm innovation capabilities have greater influence on business performance, marketing performance and ultimately influence on financial performance. Tabas&Beranova (2012) sought to determine possible effect of product innovations on the financial performance of small and medium-sized enterprises in the Czech Republic. From the results of their pilot study of statistical sample of 100 companies, it was evident that continuous innovations are necessary.

2.7 Summary

The study of innovation in the financial service industry is a relatively new area of Business research. An analysis in the extent of literature on financial service innovation reveals research topics. One set of studies has concentrated on the definition of sues of new financial services. Some of these studies have incorporated the traditional paradigms of new product success within a service setting and have explored the differences between new product development ad new service developments.

Cooper, Ian, (1986) have proposed multiple success measures for evaluating new financial service performance: financial measures being profitability, sales based, or relating to cost performance and non-financial measures such as competitive performance of new financial service.

Although many studies has been done on financial innovation in other parts of the world none has been done in Kenya to analyze the types of financial innovations impact in banking sector with aim of ensuring financial performance in terms profitability and sustainability.

3. RESEARCH METHODOLOGY

The study will employ the use of descriptive research design aimed at investigating the effects of financial innovations on financial performance of commercial banks in Kenya, a case study of equity bank of Kenya ltd.kitengela branch.. According to cooper et al, (2003), a descriptive study is concerned with explaining the: who, what, when and how of a

phenomenon. Descriptive research is the investigation in which quality data is collected and analyzed in order to describe a phenomenon in its current trends, events and linkages between different factors at the current time, which is the concern of the study.

As at 31st Jan 2016 Central Bank of Kenya report, out of the 43 institutions, 39 commercial banks which Equity bank of Kenyas is one of them. No sampling was done due to the small population size and aggregation of secondary data used in the study.

The study used secondary data obtained from reports published by the Central Bank of Kenya; which is also the regulator of the banking sector. Dependent variable, Equity banks' profit after tax to show financial performance and exceptional items was obtained from CBK's annual bank supervision reports.

The independent variables; automated clearing house throughput and RTGS turnovers were obtained from CBK's annual statistics presented under payments systems statistics, retail payments section. A study period of 3 years (2010 to 2013) was used

In order to analyze collected data Kothari (2003) observed that, a researcher needs to have the following information about the statistical data analysis tools namely: descriptive, inferential and test statistics.

The relationship between the dependent variable and the independent variables are determined by the below presented regression model. Variables data was analysed using Statistical Package for Social Sciences (SPSS) The Regression model was of the form below:

$Y = a + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$

Where:

Y- Commercial Banks' consolidated Profit after Tax & exceptional items for year1…n

X1 – Value of sector RTGS transfers for year1…n

X2 – Value of sector automated clearing transactions for year1…n

ε = Error or random term a, β_1, β_2 – constants

Significance of innovation variables as predictors of financial performance was tested using the t-test. The significance of the overall model in explaining performance

Significance of innovation variables as predictors of financial performance was tested using the t-test. The significance of the overall model in explaining performance through the independent variables was measured through the f-test. The analyzed data was then presented using tables. A correlation analysis was also performed to find how the variables were related to each other in the model.

4.   FINDINGS AND DISCUSSIONS

DATA COLLECTION AND ANALYSIS

The study sought to collect and analysis consolidated data from the 43 commercial banks in Kenya. Secondary data obtained from reports published by the Central Bank of Kenya; which is also the regulator of the banking sector was used. Dependent variable, Consolidated Commercial banks' profit after tax and exceptional items was obtained from CBK's annual bank supervision reports.

The independent variables; automated clearing house throughput and RTGS turnovers were obtained from CBK's annual statistics presented under retail payments. A study period of 3 years (2010 to 2013) was used.

RESULTS

Table 1 gives the regression model summary results. It presents the R value which is the measure of association between the dependent and the independent variables, the R Square which is the coefficient of determination measuring the extent at which the independent variables influence the dependent variable as well as the Adjusted R Square which measures the reliability of the regression results.

Table 1. Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimator
1	.939a	.928	.923	.00196

a. Predictors: (Constant), Cheque value cleared, RTGs transfer, EFTs Value cleared

According to the table results, there is a strong and positive association between the dependent variable (performance) and the independent variables (value of cheques cleared, value of EFTscleared and the value of RTGS transfers). This is as given by the R value of 0.939 revealing the strength of the association. The coefficient of determination (R Square) in the table is 0.928.

This value explains that, holding other factors (not mentioned in the study) constant, the value of the cheques cleared, value of the EFTs cleared and the value of the RTGS transfer contributes to 92.8% of the variance in the financial performance of the commercial banks while the other factors accounting for 7.2% of the variability (1-0.928).

The variation due to the studied variables (92.8%) is very high and therefore can be relied on to explain the changes in the financial performance of the commercial banks in Kenya. The results obtained are also reliable as given by the Adjusted R Square vale of 0.923 which explains that the study results are 92.3% reliable and therefore the regression model developed can be relied on to explain the trends in the financial performance of the commercial banks.

Analysis of Variance

The results presented in table 2 gives the ANOVA results which shows the reliability of the model developed in explaining the relationship between the study variables. The significance of the model was tested at 5% level with a 2-tailed test.

Table 2. ANOVA Table

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.286	3	.08934	3.436	.015a
	Residual	.026	1	.026		
	Total	.138	4			

a. Predictors: (Constant), Cheque value cleared, RTGs transfer, EFTs Value cleared

b. Dependent Variable: ROE

From the table, the F statistic is 3.436 with a distribution F(3,1), and the probability of observing a value greater than or equal to 3.436 is less than 0.001 as given by the significance value of 0.015 which is less than the critical value at 5% level in a 2-tailed test. This therefore reveals that the regression model developed is statistically significance and the variation in the results is insignificant that cannot result to a much difference in case of a change in the study units (population) and therefore the model can be relied upon to explain the effect of financial innovation on performance of commercial banks.

Regression Coefficients

In order to answer the proposed model for the relationship between financial performance of Commercial banks and the independent variables, the regression coefficients were calculated and presented in table 3 below. These with their significance values (also given in the table) measures the influence of each independent variable to the financial performance of the banks (dependent variable) and the effect that would occur to the financial performance in an attempt to changing (increasing/decreasing) these variables.

Table 3. Regression Coefficients

Model		Unstandardized Coefficients		standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(constant)	.227	0.11		1.096	0.005
	RTGS transfer	2.945	0.24	.466	1.901	0.020
	Value of Sector automated cleared transaction	1.321	.006	2.511	1.490	0.014

a. Dependent Variable: ROE

The regression test results presented in the table indicate that, all the coefficients are positive and are also significant as given by their p-values (sig. values) which are all less than 0.025testing at 5% level with a 2-tailed test. Thus, with these values being less than the critical value at 5% level, the coefficients are statistically significant and explain significant influence of the independent variables to the financial performance of the banks.

These coefficients therefore are used to answer the following regression model which relates the predictor variables (independent variables) and the dependent variables;

$$Y = \beta 0 + \beta 1 X1 + \beta 2X2 + \beta 3X3 + e$$

Where Y = Financial Performance (Measured by ROE) which is the dependent variable

$\beta 0$ = Constant which defines long term Financial performance value without inclusion of independent variables

X1 = Value of RTGS transfers

X2 = Value of EFTs Cleared

X3 = Value of sector automated cleared transactions

e = Error Term

Based on these coefficients, the regression model therefore becomes;

$$Y = 0.227 + 2.945 X1 + 1.321X2$$

Thus, the model indicates that, holding the predictor variables constant, the financial performance of commercial banks would be 0.227. This explains that, without the influence of the value of cheques cleared, the value of the EFTs cleared and the value of RTGS transfers, the ROE value of the commercial banks would be 0.227. Also, the model shows that, a unit increase in the RTGS transfer would result to 2.945 times increase in the banks financial performance. Thus the two variables are positively related with a magnitude of 2.945 explaining the extent of influence to the dependent variable. Thus, the two variables are positively related and a unit change in the value of automated cleared transactions which point at financial performance of the commercial banks.

Test of Significance

The significance of the relationship between the dependent and the independent variables in this study was tested at 5% confidence level using a chi-square test. The critical significance value at this level was set at 0.025 in a 2-tailed test. Thus, with a significant value below this value (0.025), the results reveal the significance of the relationship. The chi-square test results for the significance of the relationship between financial performance and the independent variables are as presented in table 4 below

Table 4. Chi-Square Test for the Relationship between the Variables

	Value	df	Asymp. Sig. (2 sides)
Person Chi Square	20.000[a]	16	0.020
Likehood Ratio	16.094	16	0.004
Linear by linear Association	3.147	1	.016
N. of Valid cases			

Based on the table results, the significance test results indicate a Pearson chi-square value of 20 with 16 degrees of freedom at 5% confidence level. The significance value is 0.02 which is less than the critical value (0.025) in a 2-tailed test. Thus, based on these results there is a statistically significant relationship between the financial performance of the commercial banks and the financial innovativeness of the commercial banks.

5. DISCUSION AND CONCLUSION

Discussion

The study was conducted with the aim of evaluating the effects of financial innovations on financial performance of commercial banks. The financial performance as the dependent variable was measured by ROE for the banking sector in the period 2010 to 2013. The financial innovativeness aspect is measured by three factors (value of cheques cleared, value of EFTs cleared and the value of RTGS transfers) which are the independent variables of the study. The major analysis to answer this object was regression analysis. Correlation analysis was conducted to evaluate the association of the variables. Multiple regression analysis was also conducted to evaluate the linear relationship between the dependent and the independent variables. The significance of the association and relationships was tested at 5% confidence level with a 2-tailed test. Chi-square test was the main test statistics conducted to test the significance of the relationships.

Testing the association between the financial innovations and the financial performance of commercial banks, the Pearson correlation test was conducted for each independent variable and the dependent variable separately. For the value of cheques cleared and the financial performance, the Pearson correlation value was found to be positive and strong as indicated by the obtained value of 0.803. The association was also found to be statistically significant since the significant value supporting this association was 0.012 which is less than the critical value of 0.025 at 5% level with a 2-tailed test.

The study findings indicated that, the financial performance of the banks and the value of EFTs cleared have positive and strong correlation which is also significant tested at 5% level. This is as indicated by the Pearson coefficient value of 0.863 which is a strong and positive correlation coefficient. Thus, the findings indicate that there is a strong positive association between financial performance and the value of EFTs cleared.

The study also found out that, the banks" financial performance and the value of RTGS transfers have a strong and positive correlation as given by the Pearson correlation coefficient of 0.887. The association was also found to be statistically significant at 5% level. This therefore shows that there is a strong and positive correlation between financial performance of commercial banks in Kenya and the value of RTGS transfers.

The study findings illustrated that, holding other factors constant, the value of the cheques cleared, value of the EFTs cleared and the value of the RTGS transfer (independent variables) determines 92.8% of the financial performance of the commercial banks. Only 7.2% of the financial performance has not been accounted for by the studied factors (independent variables). Also, without the influence of the value of cheques cleared, the value of the EFTs cleared and the value of RTGS transfers, the financial performance of the commercial banks would be 0.227. Further, findings indicated that, commercial bank"s financial performance and RTGS transfers are positively related with a magnitude of 2.945 explaining the extent of influence to the dependent variable.

Conclusion

The study accounts for the study of innovativeness, identifying the relationship among financialinnovation and financial performance of commercial banks in the banking sector of Kenya. Theresearcher therefore based on the findings presented in the above section makes conclusionsregarding the effects of financial innovations and financial performance of commercial banks. These are as presented below;

In general, the financial innovations in the Kenya's banking sector influence financial performance of commercial banks positively. This has a significant effect on the profitability of the commercial banks which also influence their competitive advantage. This is in agreement with the argument of several studies including: Walker (2004) and Damanpour (1991). These in their findings indicate that innovations have positive impact on performance indicators. Their findings also support significance of the transformational effects of innovations on bank performance and operational efficiency.

Results from the data collected discovered that financial innovativeness of commercial banks had a positive and significant effect on financial performance of the banks. From these findings, it is evident that innovativeness dimension of commercial banks significantly affect financial performance of the banking sector in Kenya.

The findings confirm that an increase in the innovation level results to increased financial performance. Specifically, the study findings give the relevance of the innovation developed inorder to meet the customers' needs as well as of those developed in order to differentiate from the competitors in improving the financial performance. These findings agree with the findings of the study conducted by Mwangi (2007) on Innovations and financial performance which illustrated that, bank innovations had statistically significant influence on income, return on assets, and profitability and customer deposits of commercial banks. This was the case from the findings as the financial innovativeness of the banks have been evaluated to be significantly related to the financial performance of the commercial banks which determines the banks" profitability and asset value.

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