IMPACT OF FINANCIAL DEEPENING ON KENYAN COMMERCIAL BANK'S PERFORMANCE

BY

OBENGE DAVID ONYANGO

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DECLARATION

I, the undersigned, declare that this research proposal is my original work and has not been submitted to any other college, institution or university for academic credit**.**

OBENGE DAVID ONYANGO

D61/86896/2016

Sign: ……………………………………   Date: ………………………….

This research project has been submitted for examination with my approval as;

Appointed supervisor.

Sign: ……………………………………   Date: ………………………….

Mr. James Ng'ang'a

Lecturer, Department of Finance and Accounting

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DEDICATION

I dedicate this research project to my siblings Philemon, Angeline, Catherine, Jennifer, Joshua and Sarah, who have been my inspiration throughout my academic career and everything else I do. To my mom Eunice Obenge who has believed in me in everything I have done and to my dad Elijah Obenge who has always prayed for me. You all have inspired me greatly.

ABSTRACT

This study aimed to examine the impact of financial deepening on Kenyan commercial bank's performance. The study involved the 43 registered commercial banks in Kenya by the Central Bank of Kenya. In the study, secondary data was used which considered a period of five years (2013-2017). In this period, there was era of financial liberalization and financial institutions development. The study relied on secondary data from the Central Bank of Kenya Website, websites of licensed Commercial Banks in Kenya, Kenya Capital Markets authority and Nairobi Securities Exchange. Descriptive statistics was used while analyzing the data which included the mean and standard deviation. The above was achieved through the use of computer programmes including Microsoft Office Excel and Statistical Package for Social Sciences Programme (SPSS). In establishing how the relationship between the varriables is intirms of streng and the linearity of the relationship, the Spearman's Correlation Coefficient was used. In the Spearman's test (r) which is used to measure the degree of positive correlation and can range from 0 to +1. It also measures the degree of negative correlation and it ranges from 0 to -1. This study had a significance value of (0.00) of the F-test statistic. This was less than the level of the hypothesis test done. The regression model that was used predicted the findings significantly. The findings of the model showed that credit accessibility and financial innovation explained a large part of the variation in commercial banks return on asset, the variables explained upto 30.3% of the performance's variation. Credit accessibility and financial innovation affect return on assets significantly. Commercial banks which invest heavily on innovation are able to tap into new emerging market opportunities. These new innovative techniques leads to reduced costs of operation, in some cases it makes it easier for the banks clients to access the banking services, while in some cases it is able to solve and meet the new emerging needs of the customers. This study therefore recommends that commercial banks in Kenya should increase their investments into activities that increase the access to credit and financial innovation, which eventually will make the banks to serve their clients in a better way and meet the emerging needs of their markets.

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ABBREVIATIONS AND ACRONYMS

GDP:	Gross Domestic Product
CRB:	Credit Reference Bureau
CIS:	Credit Information Sharing
NPL:	Non-Performing Loans
NSE:	Nairobi Securities Exchange
CBK:	Central Bank of Kenya
SME‘s:	Small and Medium Enterprises

CHAPTERONE

INTRODUCTION

1.1 Background to the Study

In recent years, the financial system in Kenya has experienced substantial changes, which has included banking sector liberalization, financial institutions privatization attracting foreign investments by opening up of markets. In the beginning of 1990's, these reforms were geared towards increasing savings and investment in the country leading to increased rate of economic growth (Aizenman, 2005). In these developing nations, it was necessary to open up or liberate the financial industry. Among the factors which characterized these economies in the 1990's were interest rates administration, extensive regulation, credit programs that were direct, the banks structures that were weak, risk management systems that were inadequate, and operations that were not transparent among other factors.

According to the proponents of the Hypothesis Theory, lacking a well-developed infrastructure financially discourages growth in the economy. Therefore the policies should aim at ensuring that financial system functions well to enable the real sector to is adequately supported. When the Hypothesis theory was the Economic Theorists concluded that intervention was important making it inevitable when attempting to come up with reasonable growth. Policies that encourage and promote financial institution's activities in this regard should be put in place, Emeka and Nzotta (2009).

Consequently, Shaw and Mckinnon (1973) in their studies concluded that financial repression leads to slow growth which is mostly evidenced in the developing countries. Their studies implied that the factor that contributes most significantly to economic growth is financial development, if financial institutions operated freely without the undue interference by the monetary authorities, economies whose financial systems are frequently interfered with by the authorities, according to Dogo and Nnanna (1998) experience volatile and increased inflation, interest rates and exchange rate structures that are distorted, minimum savings and investment, decreased rate of intermediation financially, as the cost of capital is not reflected by the interest rates.

In spearheading financial deepening those institutions involved include regulatory agencies, government, financial intermediaries and financial market systems. With financial inclusion, there should be increased financial services since their access is made easier. There is therefore need to enable legal, institutional and regulatory reforms and the diversification of portfolios. All these factors are encouraged by appropriate technology, institutions that regulate the sector, increased financial innovation and legal framework. Since the banking industry is able to efficiently transform the saver's financial claims to claims issued to businesses (advances), individuals and governments, commercial banks therefore holds a special place in a country's economy (Eakins and Mishkin , 2007). Chortareas et al (2011) had noted that despite the communication channel, even if some expects the impacts brought about by financial deepening will not increase performance of economy without impacting in anyway the level of profits of banks, especially in developing economies whereby banking industry is a major source of funding to the country financial system.

1.1.1 Financial Deepening as a concept

The inspirational workings of Shaw (1973) and McKinnon (1973) initiated the modern economic analysis of financial policy in emerging economies. They argued that financial repression was leading to major costs on those countries that were practicing the same. Both sides of growth would suffer: minimum savings would be realized, and the little savings made would not be put in the best use that would lead to better economic growth.

Boosting financial depth is one of the major aims of reforms in the finance industry; this on the other hand leads to more availability of resources for intermediation in the financial sector (Odhiambo, 2005). Shaw and McKinnon (1973) have defined this concept of financial deepening to be the rise in the range of the services in the finance sector which is geared to every stage the society. It again points to rise in rate of the supply of money to GDP or the PI (Price Index) which finally points out that the more the availability of liquid money in the country, the higher the chances exist in that financial economy that there will be sustainable and continued economic growth. It backs the perspective which states that the development of the economy as whole is greatly supported by the development of the financial sector.

Financial deepening has enabled finance intermediaries to undertake obligations given to them to mobilize pool and channel domestic savings to productive capital in a more efficient way leading to economic growth of a nation (Ndege, 2012). More than just in improving allocation of capital and mobilizing savings (Prescott and Boyd 1996), financial deepening also leads to a decline in the level and importance of asymmetries in

information (Greenwald and Stiglitz, 2003) which permits risk monitoring and transformation (Diamond, 1984).

1.1.2 Financial Deepening and Measurement

The financial institution's ability to effectively encourage savings used for investment purposes is called financial deepening**.** When domestic savings grows, it eventually provides the structure for creating a financial claim that is diversified. Therefore it suggests that the financial institutions found in the financial markets should exhibit active operations, these include the provision of high quality services in the financial sector and instruments, which agree with to conclusions in the analysis done by Dogo and Nnanna (1998) which stated that financial deepening represented a system which was free and did not exhibit any form of financial repression. It was founded in this reading that financial repression strategies that were geared at increasing the rate of domestic investment by the reduction of the rates of interest did not yield positive results. In this case, interest rate (real) that were negative were not increasing investment, instead they stimulated the commercial banks not to lend freely and therefore risk averse. Also, when the rates of interest are increasingly market concerned and decreasingly negative in the real terms, there is a rise in lending in the banks, also levels of savings domestically and investment nationally increases.

Financial deepening therefore entails and increases in the ratio between the supply of money and the GDP (Dogo and Nnanna, 1998; and Nzotta, 2004). Therefore to measure Financial Deepening, you measure the aggregates that are both monetary and financial for example M1, M2 and M3 to (GDP). The meaning of this is that when more of the

economy has liquid money, more are the chances that the economy of the country will grow. Financial Deepening therefore could be described as the rate of the supply of money to GDP, it's a function of the credit in the domestic sense that as a percentage is given by banking industry, also credit of the domestic population, compared to that in the private segment considered as percentage to GDP, also the savings of funds to the GDP, rate of inflation, rates of lending that are real (lending rates),assets of banks to GDP, deposit money , currency found not within the financial banks to the supply of money.

Many proxy measures have been chosen by studies that have attempted to link financial deepening to economic growth and therefore, they have suggested results that are not similar (see Levine and King, 1993; Senhadji and Khan, 2000; among others). Those studies that have used alternative financial development indicators, above finding a positive correlation between growth and financial sector, has also come to the conclusion that bank credit development has an effect of the economic growth.

A well-developed financial system increases the access to funds, contrary to that in the not well developed financial systems there is a limited access to fund and people are limited by the ability of their personal finance and they end up borrowing funds with the high cost non formal sources like the money lenders. This has led to limited economic activities that can lead to economic growth. Therefore in those underdeveloped financial systems economic growth is limited to expansion ability of the private individuals. In well-developed financial systems, the financial institutions have developed appraisal techniques, and information sharing and gathering mechanisms, which enable financial institutions like banks to finance companies that are promising, and therefore leading to the growth of these companies and increasing activities that are productive adding to the

incumbents. The availability of external finance channeled to the small firms and budding entrepreneurs leads to fresh admission and moreover, provide rivalry to the existing, consequently promoting productivity and entrepreneurship.

1.1.4 Concept of Bank Profitability

A number of studies on bank performance and profitability are product oriented, i.e. they focus on determinants of bank performance. Similar studies are found in transition economies (Karkigash, Mohammed and Duygun, 2008). In such studies, difference in the performance of banks and their profitability are explained at five different levels which have included the scope and the economies of scale (Piloff, 1996); the acquisitions and mergers in bank sector(Berger Akhavein and Humphrey, 1997); suboptimal choice in output prices and inputs called X-performance or managerial performance (Bos and Schmiedel, 2007); market structure (Nasser, 2004) and commercial bank regulations, financial reforms and competition (Ben Naceur and Omran, 2011).

Athanasoglou et al (2008) pointed out that; the industry concerned with the commercial banks has undergone worldwide key changes in its environment of operation in the past two decades. Both domestic and external factors affected its performance and structure. That even though there has been increase indetermination by banks which has been experienced in numerous nations, the function of commercial banks has remained key in the financing of activities that are economic in general terms and the different sectors in the market particularly. In their study, they noted that profitable and sound bank industry is more to cope with adverse impacts and therefore encourage the financial system to be stable. It is worth noting that those factors which determine the performance of banks

have been of interest to academic researchers and also the bank management and financial markets.

1.1.5 Financial Deepening and Bank Profitability

Financial deepening refers to the degree of the financial institutions being able to pull together savings for purposes of investment. The increase of the saving levels in the financial institutions provides the actual structure for the creation of the diversification of the financial claim. The financial deepening also entails the active working of the financial institutions in the markets which are financial in nature which leads to the accessibility of the services and financial instruments thus increase in the savings level and growth of the investment levels which will conform to a system that is free from financial repression (Nnanna and Dogo, 1988).

The development of the commercial banks does not only have positive effect in the growth of the finance sector but also leads to the growth of the economy in the country. According to Otieno (2013) a developed financial institution broadens the accessibility of its services to the customers conversely, in the underdeveloped financial system which limits the accessibility of its services to the public which leads to borrowing of the money to funds its operations, and this leads into few economic activities that would results to slow economic growth. In financial institutions that are less developed, growth in the economy is only restricted to the expanding of the incumbents while in the developed financial systems, the financial institutions create mechanisms, techniques and information sharing gathering that will enable the growth and sustainability of the financial institutions. The financial deepening leads to the availability of the financial

services by the financial institutions which will eventually lead to high performance of the financial institutions due to increased customer base and expansion of the financial services.

A high level in financial deepening also may impact the banking productivity and efficiency by encouraging competition and ultimately a capital allocation that is more efficient that has led to more investment and high level of productivity. Also financial deepening encourages the mobilization of savings to investment projects, which normally the banking industry passes on to it (Bodie and Merton, 1995). Also more profitable and efficient banks, through increasing competition, improvement of their services, increased network penetration, transaction processes that are enhanced and increasing the variety of financial products that are availed to the customers may lead to increased financial deepening.

The banking sector was expected to increase in competitiveness and therefore become a key facilitator of growth in the economy after the financial reforms of 1990's in Kenya. It was expected that financial liberalization would promote positive interest rates, and to stimulate efficient allocation of finance resources and mobilization of funds that are domestic. Also as the intermediation costs go down, the markets will become more competitive, this indicates that the intermediation process in the assets which are financial is efficient (Ngugi and Kabubo, 1998). Worth noting also is the work done by Aizenman (2005), which indicated that the most instant impact of the reforms in the financial sector would lead to finance sector capitalization and the bank sector change in the structure of the market.

1.1.6 Kenya's Banking Industry

The Central Bank of Kenya (CBK) Act, the Companies Act and the Banking Act govern and regulate the banking industry in Kenya. The 6 prudential guidelines together with the above acts which are issued by the CBK from time to time. After the banking sector liberalization in 1995, exchange controls were suspended in Kenya. The regulator of commercial banks in Kenya, CBK in June 30th, 2012reported that there were 42 commercial banks in Kenya, one mortgage finance company and 6 microfinance institutions that were deposit taking, 5 foreign banks offices representatives, 115 exchange bureaus that were foreign and 2 credit reference bureaus. The CBK has a task of implementing and formulating fiscal and monetary policies. The CBK is also lender of last resort and banks for all the other banks. The CBK has a role of ensuring that the Kenya Financial system functions properly. It also controls the liquidity and solvency of the shilling in Kenya.

According to the CBK, the banking sector in Kenya in the 1980''s had many Non-Performing Loans (NPLs). This state of the sector led to some of the banks collapsing. The serial defaulters worsened this state of affairs, they could borrow from different banks yet their intent was not repaying the loans. The information asymmetry environment which was prevalent in those days made the defaulters to thrive. This was because credit information sharing mechanism was not present.

The association of Kenyan banks noted that the CIS that is Credit Information Sharing mechanism launched in the year 2010, July has continued to be used by individuals and commercial banks. The credit reports that were requested by various institutions were 1.7

million which is an increase from the 1.5 million that were requested in March 2012. This represents a 15% increase or 231,197 reports. During that period, the reports that were requested by clients rose from 7,603 to 10,032 reports. Credit appraisal standards have been further strengthened by the introducing of credit sharing system. The credit reference reports are now part of the bank's credit risk appraisal. Credit referencing will also help in encouraging credit discipline to the borrowers

Agent Banking Model which was crafted to help banks in lowering the costs of giving banking services which was a stumbling block to the inclusion and at the same time encouraging bank's income with more citizens being offered a chance to access the financial services. Usage of the agency banking model by commercial banks in the country has gone ahead to make the access to banking services better and financial deepening in Kenya has increased as a result after its launch in the year 2010.

In the report named Development in Kenyan Banking Sector by the CBK for the quarter which ended in 30th June, after the start of the agent banks, there has been incredible advance in the financial sector leading to many Kenyans getting access to finances more conveniently. In effect it has led to reduced transaction costs and time mainly for those citizens in the rural areas. In the end of June 2012, commercial banks in Kenya were 10 which had active agents totaling 12,054 who facilitated above 18.7 million transactions that had a value of Ksh 93.1 million. This marked a rise in the number of banks from 8 which had 10,006 active agents who facilitated above 13 million transactions which had a value of Ksh 64.8 billion in March 2012.

With the rise in the value and number of transactions, this has demonstrated the increased function of agent banking in encouraging the financial initiatives that are propagated by the CBK. This increase has been brought about by the fact that financial institutions and banks in Kenya have increasingly deployed the usage of payments which use agencies which increase the quality of financial services in those banks. The speed at which change is being undertaken by the financial sector has speeded up which has led to more agency banking businesses to realize the potential in using agencies while transacting the payments in service delivery.

1.2 Research Problem

The concept of Financial Deepening is mostly used in the development studies and means the increasing of the financial services provision with more choices of services aimed at developing all levels in the economy. Further in 1932, the World Bank contended financial deepening led to an upsurge in the stock of the financial assets. According to this view, financial deepening increases the financial capability of the financial institutions generally, which leads to finance resource mobilization geared towards development. This perception supports the opinion that the role of the financial sytem to the country's economy relies both the quality and the quantity of the financial facilities and its effectiveness in undertaking its functions.

Among the objectives of liberalization in the financial sector was an upsurge in the level of financial development, for instance practicing credit expansion. Numerous academic undertakings have given substantial practical confirmation on the connection amongst growth, finance and economic productivity, whereby developing of the financial

establishments is regarded as the main constituent of financial deepening (Loayza 2000 and Levine 1997). Chortareas, Arestis and Desli (2006) pointed out the fact that the mechanism in which the nexus materializes is not frequently attempted by the literature.

The above mentioned effects directly affect the financial structure and navigate through it. This paper therefore complements the already existing literature by shifting the focus to the microeconomic impacts in financial deepening of the financial bodies. The specific attention is on probable impacts of financial deepening on the yield of banks, because the amount of depth in system which is financial is a vital constituent of the dimension of the comprehensive setting in which the commercial banks function. Additionally, the finance system in Kenya is to a high degree bank based and the banking industry constitutes 10 of those most vital avenues of finance. In this paper the researcher shifts attention to the financial institutions and those links between financial deepening and the changes in productivity of commercial banks from the perspective of macroeconomic factors. This study adds to the existing literatures by investigating the microeconomic factors and the effects of financial deepening to financial institutions.

Particularly this study focuses on the probable impact of financial deepening on the Kenya commercial banks performance, because the level of financial depth is a major constituent of the general situation in which the banks functions. Chortareas et al (2011). Moreover, finance system in Kenya is a highly bank based which is the most important source of finance is through the banks.

To my best knowledge, no academic work has been undertaken in Kenya which considers explicitly this kind of relationship or link between bank productivity and financial deepening. However such studies have been undertaken in Latin America by Chortareas et al (2011). Consequently, the question of this research is; what effects does financial deepening have on the banks profitability?

1.3 Research Objective

It is to study the possible consequence financial deepening on Kenyan commercial banks performance.

1.4 Value of the study

It will be important to the Kenyan commercial bank management to enable them understand how financial deepening impacts on their net profit.

Regulators like the CBK will be able to formulate policies which promote the deepening to the finance sector and promote the growing of the commercial banks in Kenya and outside Kenya.

Its conclusions will be of importance to stakeholders when they are making investment choices on the best ways possible of conducting investment selections inside the bank sector

The existing literature on the subject will also be added. This will help those students who might be interested in undertaking further study on finance institutions and financial deepening. In addition, it will suggest the areas for further research where they can

investigate to build the body of knowledge on financial deepening and the Kenyan commercial banks performance.

In general, the study's importance will be promoted by the current economic development period since there are attempts to improve the finance system in order that it can be able to have a key part in Kenya's economic development.

The study will also be important to future scholars and researchers by providing additional empirical literature which will direct their future research work. In addition, the study will suggest the areas for further research where they can investigate to build the body of knowledge on financial deepening and the Kenyan commercial banks performance.

To the general public, the study is important since with increased financial deepening economic growth and distribution will be more even. Financial deepening promotes and aids in providing finance to small and medium scale enterprises (SME's) due to the crowding out by the large organizations. When the financial sector is deepened, those larger corporations will be able to raise funding in an easier way through bonds and equity, so that banks can lend to the SME's.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The literature review of this study is contained in this chapter. Also four theories have been discussed which are behind the connection between financial deepening and financial performance of the banks. These theories are: Development Hypothesis Theory; Financial Repression Theory; Finance Led Growth Hypothesis and Financial Innovation Theory. Further, the chapter discusses the previously done empirical studies which bring about the relationship linking economic growth and financial deepening.

2.2 Theoretical Review

This chapter will introduce the concept of economic growth together with financial deepening and the performance of banks; it will examine the theories as well as the empirical studies and provide conclusions.

2.2.1 Development Hypothesis Theory

Those who support the Development Hypothesis Theory believe that when there is no well-developed financial infrastructure, economic growth is generally restricted. This means that policy makers should put a lot of emphasis on ensuring that financial system is operated efficiently to enable the real sector to receive adequate support. When the Hypothesis theory was accepted, the Economic Theorists came to the conclusion that a certain degree of involvement is essential and very basic for significant growth to be

experienced. Strategies must therefore be put which promote and inspire the activities of the commercial banks in this aspect, Emeka and Nzotta (2009).

2.2.2 Financial Repression Theory

This theory is generally related with the work done by Shaw (1973) and McKinnon (1973. These studies had implicated that the greatest contributor to economic growth was financial development, in the event that the functioning of the financial institutions were not interfered with by the monetary authorities, and the financial infrastructure generally was not interfered with. These studies by Shaw and McKinnon had observed and concluded that financial repression was directly correlated with the slow economic growth in these less developed countries. According to Dogo and Nnanna (1998), those economies are mostly characterized by volatile and high inflation and interest rates that are distorted, structures of exchange rates, minimum investments and saving and reduced financial intermediation, as the cost of capital is not reflected by the interest rates.

2.2.3 Finance Led Growth Hypothesis

This Hypothesis was developed by Schumpeter (1911). The hypothesis believes that development of financial sectors play a major role in economic development of a nation. It is a hypothesis founded on the notion that financial development acts as a catalyst of economic growth. Financial development achieves this role by ensuring efficient mobilization of resources through efficient allocation of capital, mobilization of saving, bringing down the cost involved in information gathering among other ways. An efficient financial sector is one that ensures that resources are gathered in a more efficient and economical manner after which the resources are allocated optimally to productive units.

Various empirical evidence (Levine, 1997; King and Levine, 1993; Darrat, 1999) has been presented to support this hypothesis.

This hypothesis puts a lot of emphasis of the function of the financial sector in mobilization of investments and savings in a more efficient and transparent manner and promotion of productivity by creating more efficient markets. Schumpeter (1911) argued a financial system that is working well catalyzes technological innovations by allocating resources efficiently from unproductive to productive sectors of the economy. This is well illustrated by Al-Yousif (2002) who argues that presence of well-functioning financial intermediaries in an economy enhances optimal allocation of resources for higher economic growth. This theory for this study because it explains how developments in financial deepening affect economic growth of nation which is the subject of the current study. This theory is significant for this study because it brings out the significance of financial deepening on economic progress of nations. It identifies the key role undertaken by financial depth in economic progress of nations hence justifying the undertaking of this study for the Kenyan perspective.

2.2.4 Financial Intermediation Theory

This theory is mainly propagating the role played by financial intermediaries in an economy. Financial sector plays the main role of financial intermediation in any economy by electing surplus resources from households and redirecting the same resources to deficient households with investment ideas but limited in resources (Christopoulos & Tsionas, 2004). This theory anchors on the information asymmetry and agency theories. The information asymmetry theory focuses on the moral hazard and adverse selection

effects by ensuring that the organization invests in some verification and auditing procedures to guard against individuals who may want to take advantage of the information asymmetry (Towey, 1974).

Unlike in perfect markets where all market participants have information about the borrower as well as savers; the imperfect market presents great challenges of information asymmetry which can be exploited to hurt the financial performance of banks (Fama, 1980). This theory is further explained from the transaction cost approach which holds that financial intermediaries help in improving efficiency in collection of information about deficiency households thus help reduce the transaction costs for the lender (Pyle, 1971). This theory is relevant for this study because it helps in elaborating reasons for the presence of the financial intermediaries and the role they play in ensuring that surplus households extend their resources to deficient households in a more economical manner. This theory is significant for this study because it explains the key function of financial institutions in an economy which is the process of linking surplus households to deficit households in the most efficient manner. It helps explain reasons as to why financial institutions need to deepen their outreach for optimal performance of their function and consequently affects the level of economic progress registered by countries.

2.3 Empirical Literature

This part examines studies that were done by other scholars with the aim of establishing what they found out, how they conducted their studies so that the gaps can be filled. It is divided into international and local studies.

2.3.1 International Studies

There has been an extensive debate by the economists on the effect on the growth of the economy by the rate at which financial development takes place.

Many studies have been done. In the world scene, it has been deduced that the rate at which financial develpmnet takes place impacts on the GDP growth through technological advancement and productivity, Schumpeter (1934). In his earlier studies, Goldsmith (1969) had suggested that financial progress can lead to increased total factor productivity in the general economy by increasing the marginal productivity. McKinnon and Shaw (1973) had suggested that the efficiency in capital allocation can be increased by financial development by ensuring a higher degree of investment.

Studies have been undertaken to bring out the relationship between growth and financial intermediation through the numerous cross nation studies at both the industry and firm stages (Levine 2004).

Little focus has pointed towards the various causes of economic progress so that the exact mechanisms in which the rate of financial development has influenced economic growth can be identified (Valev and Rioja 2004).

Jorgenson (2005) has suggested that the accumulation physically in wealth in itself does not unavoidably lead to growth in the economy in the long run. Hence, studies done recently have attempted to explain the ways and mechanisms through which economic growth is impacted by financial deepening. Levine (2004, 6) had put it that “if finance was to explain growth in the economy, theories are needed that can explain how financial

development has influence on the decisions on the allocation of resources, in ways which encourage growth productivity".

Some of the authors have been focusing on the ways in which economic growth is impacted by financial development by increasing the level of productivity (Loayza, Levine and Beck 2000; Dematriades, Fattouh and Arestis 2003; Chortareas, Desli and Arestis 2006). Love and Fisman (2003) tested how output development is affected by financial deepening their findings was that the those nations which have a highly advanced financial systems in the long run they tend to allocate more of their resource share to those sectors that primary rely on external finance. Those productions that are mainly characterized by external financing mostly invest in research and development and expertise and access to the improved credit will lead to production advance stimulation.

Heartmann et al (2007) has shown that in the Easter European nations, financial deepening has made capital allocation to be faster; they have concluded that a deeper credit market has enhanced the allocation of capital through the contribution to the increase in economic growth and productivity. A lesser TFP has been elucidated in the third world countries by misallocating incomes across the production parts. Therefore, financial frictions in these countries have increased the misallocation of resources (G. E. Chortereas et al, 2008).

In contrast, as there is the expansion of financial system, transaction costs and information associated to capital reallocation reduce whereas TFP rises (Klenow and Hsieh 2007; Rogerson and Restuccia 2007).

According to Jovanovic and Greenwood (1990) they provided the hypothetical analysis of the means by which the finance intermediation will improve growth and productivity through assigning funds proficiently in those projects of investment that are having rates of return that are high. Smith and Bencivenga (1991) have suggested that financial intermediaries have contributed to the allocation of fund efficiently through variation of risk and increasing liquidity, which has in turn influenced the growth productivity. They agreed to the fact that the measures of regulation which include ceiling of interest rates can work against this process, mainly in the countries which are developing.

More recent studies have been focusing on the mechanisms which improve the level of productivity which analyses the relation between the level of development in the financial sector to the rate of economic growth. Spiegel and Benhabib (1994) found that finance sector progress leads to increased growth by realizing a greater capital accumulation and TFP. Levine and Beck (2002) used panel data that was cross country in testing the link between the financial infrastructure, industrial progress and new formations of establishment. They found out that those competent legal systems and progress of the finance sector are both major determinants of growth in industry, capital allocation efficiency and formation of new establishments.

Jovanovic and Greenwood (1990) provided theoretical examination on the ways that financial intermediation could enhance growth and productivity through efficiently allocating funds in those investment projects that have high return rates. Smith and Bencivenga (1991) proposed that through funds that are efficiently allocated which are brought about financial intermediaries, there is an increase in risk diversification and liquidity, which has an influence on growth and productivity. They agree that regulatory

measures like interest rate ceilings are able to work against this process, mostly in the less developed countries.

There have been more recent studies which have focused on those instruments which increase yield to analyze the economic growth- financial development connection. Spiegel and Benhabib (1994) found out that through a greater TFP financial development increases the rate of economic growth. Levine and Beck (2002) have employed cross country panel data to examine the link amongst industrial increase, new establishment and the financial structure. They found out that if the legal system was efficient together with financial development, they became major determinants of industrial growth, efficient allocation of capital and formation of new establishment.

Guillaumont Jeanneney, Liang and Hua (2006) have studied the productivity growth-finance in China for the period 1993-2001. They have used the Malmquist Index together with its constituents (named the efficiency change and the technical) in measuring productivity and concluded that productivity in China is affected by financial deepening, mainly through change in efficiency. In Latin America, G.E. Chortareas et al (2011) studied the financial depth- banking productivity nexux. They considered nine countries from Latin America and estimated the productivity in banking for all of them by using Malmquist TFP index. The results revealed that there was unambiguously positive and a relationship that was statistically significant, which suggested that financial deepening was vital determinant in increases on bank’s performance. Their study went ahead to uncover the evidence behind the reverse casualty linking these two variables, as it has been implied by the plausible channels.

In this undertaking, bank's profitability has mostly been articulated as a part of external and internal determinants. These internal factors can be called bank specific or micro determinants of performance. consequently, the external indicators are the variables that do not relate to the management of banks but are reflecting on the legal and economic environment which have affected the operation and performance of the finance institutions (P.P. Athanasoglou, et al, 2008). This research which was undertaken mainly gave emphasis on the analysis of profitability of either individual countries or cross country's banking systems. Those studies which were undertaken at the beginning included Short (1979), Thornton and Molyneux (1992), Bourke (1989) and Huizinga and Demirgue Kunt (2000).

Also in this group there is another study by Hu and Bikker (2002), though it has a different scope; it has emphasized on business cycle relationship and bank's profitability. The study in the subsequent group has essentially concerned the bank industry in the United States of America (example Berger et al, 1987) also the upcoming market frugalities (e.g. Barajas et al., (1999). All these studies have looked in to the blends of external and internal causes of viability of banks. Those empirical results are meaningfully different since equally environments and datasets contrast. There are yet those mutual elements which allow more classification of determinants.

The studies which have dealt with the internal determinants have employed variables including capital, size, express management and risk management. The introduction of size as a factor is done to account for the existing market diseconomies and economies of scale. Smirlock (1995) has gone ahead to find a positive and a relationship which is significant between bank profitability and size. Huizinga and Demirgue- Kunt (2000)

have suggested that closely related to the firm's size is the level of various legal, financial and those other factors as corruption.

Additionally, Short (1979) has argued that, closely related to financial innovations of a bank is size, this is because less expensive capital is generally raised by those banks that are large relatively which make them look more profitable. With similar arguments, Hu and Bikker (2002) and Goddard et al (2004) among others have related the size of banks especially considering small and medium sized banks to the capital and to profitability in turn. Other many researchers however, suggest that a small degree of saving costs can be arrived at by ensuring that the banks size increases (Berger et al., 1987). Inherently inside the nature of the business of banking is the need for risk management in the banks (P.P. Anthanasoglou et al, 2008).

Moreover, the two main causes of failures of banks is the low liquidity levels and poor quality of assets.

When there is amplified uncertainty, the financial institutions can undertake to spread the portfolios and raise their assets liquidity so that they can lessen their risk. In this way, it can be sub divided into liquidity risk and credit risk. Thornton and Molyneux (1992) among others have found a non-positive and noteworthy link between liquidity levels and viability. In contrast to this is Bourke (1989) report which has given an opposite result; whereas the impact on banks profitability from credit risk looks clearly negative (Noulas and Miller, 1997).

Athanasoglou et al, (2008) explained this result by considering that a higher accumulation of loans that are not paidis as a result of many financial institutions being exposed to loans that are of high risk. This means that losses experienced from loan defaulters have led to lower incomes for commercial banks.

The expenses of banks also to a large extent determine the bank’s profitability, which closely relates to efficient management. Literature that propagates the view that a variable that is related to expense which should be part of the profit function has been extensive. An example is by, Bourke (1989) and Thornton (1992) and Molyneux which realized that there is a positive association between profitability and better quality management. Considering the external bank profitability determinants, it is worth noting that a further distinction between the control variables, examples are cyclical output, interest rates and inflation, and those variables used to show the market characteristics. The latter is used to show the industry size and ownership status.

A new dimension concerning the structural effects on the profitability of banks had started with application of the efficient structure hypothesis (ES) and market power hypothesis (MP). MP hypothesis also called the structure conduct performance (SCP) hypothesis implies that the raised market power results into monopolistic profits. The relative market power (RMP) hypothesis is a special case of MP Hypothesis, it has suggested that only those companies which have a large market share and products that are well differentiated have the ability to undertake market power and achieve noncompetitive profits. Similarly the x efficiency option of ES (ESX) hypothesis has suggested that the increased managerial and the degree of efficiency has been leading to more concentration and therefore higher profits. Studies including that which has been

done by Smirlock (1985) and Berger (1995) has investigated the structure relationship to profit in banking, and has provided tests for the above two hypothesis that has been mentioned. To some degree, the RMP hypothesis has been verified, this is because there is evidence which connects the good management and market share that is increased (mainly in the small to medium sized banks) to raised profits.

Contrastingly, small evidence can be seen which supports the ESX hypothesis. Berger (1995a) has noted that the efficiency of management above increasing profits, it could also increase the market share gains and therefore concentration that is increased, such that the positive relationship that has been founded between profits and concentration could be a spurious eventuality as a result of the relationship with other variables. Therefore, regulation for the other determinants is to have a minute role. The other scholars (e.g. Thornton and Molyneux, 1992 and Bourke, 1989) have argued that contrary the heightened concentration is actually not due to the efficiency in management, but is reflecting on the increasing change from the market structures that are competitive, which in turn has led to profits which are monopolistic. In consequence, the profitability of banks should be related to concentration. Another issue that is of interest is the consideration of the relationship between profitability and the banks ownership status. However, there has been small evidence which support this theory which states that privately owned institutions tend to operate on a relatively higher returns or economic profits (egShor, (1979). Contrary to this, Thornton and Molyneux (1992) and Bourke (1989) have reported that the status of ownership is not relevant when explain profitability.

In their recent studies Huizinga and DerirgucKunt (2000) and Hu and Bikker (2002) have tried to recognize the probable cyclical in the viability of banks to the point in which the profits of banks are directly related to the cycle of business. They came up with findings which suggested that indeed that kind of correlation exist, although the variants which they considered were not business cycles' direct measures. However the impact of environment which is microeconomic in nature has not been adequately considered. The time period of those panels that are considered in empirical studies is normally small which hinders it to capture the impact of the control variable which are related to the environment which is Macroeconomic (particularly considered is the variable called business cycle).

Finally in some cases, there is an overlap linking the variable since some of them actually proxy the profitability determinant which is the same. This points out that the studies which have concentrated on the analysis of profitability of the banking industry should actually be able to come up with solutions to the above matters in a more satisfactory way, so that they can permit a better insight into the issues which affect profitability.

2.3.2 Local studies

The recent financial crisis brought to the fore the increase in significance of the financial organizations and financial instruments in helping in the reduction of information and transaction cost in the general economy, moreover it has posed challenges. In more recent times, there have been numerous literatures which has led to evidence which is convincing on the existence of a positive correlation between economic growth and

financial deepening by increasing economic efficiency, investment and growth (Ndege, 2012).

Odhiambo (2009) studied on the possible effect of the reforms of interest rates on the rate of financial deepening and the rate of economic progress in Kenya. The paper considered financial depth as a extent of financial deepening and it was using the ration of broad money to gross domestic products. The annual time series data was used from 1968 to 2004. Co-integration and correlation models were applied. The study finding showed a positive effect of interest rates reforms on financial deepening in Kenya.

Kenyoru (2013) studied on the effect of finance innovations on the finance sector expansion. The financial deepening while being measured, the number depositors with commercial banks and other institutions per 1000 adults were considered. Financial innovation being measured considering the number of mobile money transactions, number of agency banking and value of m-banking sector. The data was collected for the period 2007-2012. The results showed the mobile money transactions had a negative effect on financial deepening while value of m-banking transactions had an effect on financial deepening that was positive. The effect of agency transactions was not shown. The study concluded that none of the effects were significant suggesting no significant effect of financial innovations on financial deepening.

Ochanda (2014) studied on the effect of financial deepening on the small and medium sized enterprises in Nairobi County, Kenya. The survey data was collected from 100 SMEs. The financial deepening was measured using financial innovation and credit access. The findings show that both credit accessibility and financial innovation had

positive effects on the growth of SMEs. The study concluded that financial deepening has a positive effect on the growth of SMEs in Nairobi County in Kenya.

2.3.3 Summary of Literature Review

The reviewed literature highlighted the connection that occurs between the rate of economic growth and financial deepening. Caporale et al, (2009) found out that there existed and encouraging between financial deepening with economic progress in ten countries among the European Union members. Saltz (1999) found that for most countries in his study connection ran from economic rate of growth to the increase in the rates of saving.

Ayadi, Ben-Naceur, and De Groen (2013) established that the lending rates in comparison to the private sector and the bank deposits were undesirably associated with economic growth. While these studies highlighted the impact of financial deepening on the economic progress, most of these studies were done in the developed countries. In Kenya Andele (2013) did a study on the financial deepening and the productivity of those banks that are located in Kenya where he found that financial deepening affect bank profitability positively? Another study was by Mukundi (2013) who observed the link between financial deepening and advance in GDP of listed firms at Nairobi Securities Exchange (NSE).

A study by Ambunya (2003) traced the effect of financial liberalization on levels of financial deepening and the rate of economic progress through increasing the channels of credit to the private institutions. Following financial deregulation. In another study in Kenya Muli (2008) empirically explored the causal link between the level of financial

development and economic growth in Kenya for the period to 2006. However, these studies fall short of linking financial deepening to the economic growth, hence motivation for this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter discusses the research methodology that this study has used. The areas covered are population design, sample descriptions and population design, data ways in which data has been collected and analyses have similarly been discussed.

3.2 Research Design

Research design in this study is a causal study design it involves an analysis on the causes considering the other factors of the different variables (Chandran, 2004) this study has adopted both descriptive and explanatory designs. Causality in this study is the most preferred because the study has endeavored to investigate what outcome financial deepening has on the commercial banks financial performance in Kenya. First the study has described the trend in both financial deepening and profitability of banks. Secondly, an explanatory approach to explain whether financial deepening has any effect on profitability and carefully test causal research objective of the study.

The presumed causal factor is the independent variable, whereas the dependent variable is represented by the potential effects. According to this study, profitability of commercial banks is the dependent variable while proxy measures of financial deepening form independent variables. The design involved philosophical assumptions that guide the economic direction of the collection and analysis of microeconomic data and quantitative approach in research (Creswell and Plano, 2007). This has given insight into

complex economic phenomena by producing findings that elucidate the correlation complexity of variables used in the study.

3.3 Target Population

The study considered a set of Commercial banks in a period whereby there were financial reforms which heightened the financial depth, the study examined whether banks profitability is affected by financial deepening. The population that was used in this undertaking included all the commercial banks in Kenya (Appendix 1).

3.5 Data Collection

The study used secondary data covering a period of five years (January 2013 to December 2017) on an annual basis. In this period there was financial liberalization and the development of the financial institutions in Kenya. The data used was collected from CBK website, websites of licensed Commercial banks in Kenya, Kenyan Capital Markets Authority and Nairobi Securities Exchange. All the variables on financial deepening and financial performance have been extracted. With the use of data collection guide, the researcher extracted secondary data that was relevant to the study.

3.6 Data Analysis

The data was being collected from the financial institutions operating in Kenya and data analysis was undertaken through the use of descriptive statistics which included mean and standard deviation by use of the relevant computer packages such as Microsoft Office Excel and Statistical Package for Social Sciences (SPSS) program. For comprehensive analysis to be undertaken there has been the adoption of two data analysis methods. Regression analysis has been used for the objective.

To display the information derived from the analysis the usage of graphs, bar charts, tables and pie charts were being adopted in order to determine any connection between financial deepening and performance of the financial institutions.

The following regression equation was being used to show the link between financial deepening and the performance of Kenyan commercial banks.

$$y = \alpha + \beta 1X1 + \beta 2X2 + \beta 3X3 + E$$

Where: y = Financial performance indicated by the rate of Return on Asset

Return on asset= banks net income / total assets

α = it is a constant which the y intercept. It denotes the value of y when the value of x is zero

$\beta 1 \ldots \beta 4$ = this represents the gradient which is the rate at which the dependent variable changes in response to a single unit of the independent variable

X1= Credit Accessibility measured by the ratio of the loans to the deposit balance. This ratio is also called loan to deposit ratio. It compares the banks total loans for a period to its total deposit balance over the same period.

X_2 = Financial Innovation measured in terms of the natural logarithm of value of transactions through financial innovations

X_3= The total size of the commercial banks which was measured by the natural log of total assets of the banks

E = error term

3.7 Diagnostic Tests

A test was first being undertaken to establish and validate the most appropriate research model which is designed for the study. It was essential in order to sustain the realistic results and obtain precise policy approvals and conclusions for the study.

The advantage of the secondary data it considered both path and space which makes the process of performing tests easier and has the ability to have a heterogeneity effect.

The Haussmann specification test has been performed for it to decide on whether to use the random effect model or fixed effect model. The Haussmann specification test is based on the hypothesis of no correlation between the financial deepening and financial performance of financial institutions.

3.7.1 Statistical Test of Significance

Correlation analysis was employed to establish the connection that exists between the independent and the dependent varriables. The Spearman's Correlation Coefficient (Rsp) is being employed to determine the strength of the connection between the variables, and the linearity of relationships. The Spearman's Correlation Coefficient is using correlation coefficient (r) the measure of the extent of relationships between the two variables and therefore ranges from 0 up to +1 in case of a positive correlation and when there's a negative correlation it ranges from 0 to-1.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND INTERPRETATION

4.1 Introduction

The chapter focused on the analysis of the collected data to establish the impact of financial deepening on Kenyan commercial banks performance. Using regression analysis, descriptive statistics and correlation analysis the results of the study were presented in table forms as shown in the following sections.

4.2 Diagnostic Tests

The researcher carried out diagnostic tests on the collected data. Multicollenearity test analysis was done. Tolerance test of the independent variables and the VIF value was used. In cases where tolerance was less than 0.2 and VIF values less than 10 meant that multicollenearity did not exist.. Multiple regressions is applicable if strong relationship among variables doesn't exist. As shown in the table below that is table 4. All those variable under consideration had tolerance values less than 0.2 and VIF values less than 10. This meant that there was no multicollenearity among the dependent variables

Table 4.1: Multicollinearity Test for Tolerance and VIF

	Collinearity Statistics	
Variable	**Tolerance**	**VIF**
Credit accessibility	0.352	1.356
Financial innovations	0.360	1.382
Bank size	0.392	1.463

Source: Research Findings (2018)

Shapiro-walk test and Kolmogorov-Smirnov test was used to test for normality. The null hypothesis for the test was that the secondary data was not normal. If the p-value recorded was more than 0.05, the researcher would reject it. The results of the test are as shown below

Table 4.2: Normality Test

ROA	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Credit accessibility	.176	205	.300	.892	205	.784
Financial innovations	.175	205	.300	.874	205	.812
Bank size	.176	205	.300	.892	205	.784
a. Lilliefors Significance Correction						

Source: Research Findings (2018)

The Kolmogorov – Smirnova and the Shapiro – Walk test indicated the 0 values that were more than 0.05 which indicated that there was a normal distribution in the research data which made the null hypothesis to be rejected. This data was right for the parametric analytic tests which includes regression analysis, Pearson’s correlation analysis and the analysis of variance.

Autocorrelation analytic tests were run to check if there existed error tirms across the time periods. Autocorrelation was done using the Durbin Watson test. A durbin-watson statistic of +1.903 showed that these varriables were not correlated serially since these values are within the range of 1.5-2.5

Table 4.3: Autocorrelation Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.550[a]	.303	.293	.016257	1.903

a. Predictors: (Constant), Bank size, Credit accessibility, Financial innovations

b. Dependent Variable: ROA

Source: Research Findings (2018)

4.4 Descriptive Analysis

Descriptive statistics gives a presentation of the average, maximum and minimum values of variables applied together with their standard deviations in this study.

Table 4.4 shows the descriptive statistics for the variables applied in the study. An analysis of all the variables was acquired using SPSS software for the period of five years (2013 to 2017) for all the 41 banks that provided data for this study. The mean, standard deviation, minimum and maximum for all the variables selected for this study are as shown in the table below.

Table 4.4: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	205	-.053	.067	.02389	.019329
Credit accessibility	205	.025	.969	.46090	.217898
Financial innovations	205	4.323	5.588	5.08245	.326780
Bank size	205	6.794	8.703	7.68560	.534062
Valid N (listwise)	205				

Source: Research Findings (2018)

4.5 Correlation Analysis

The association between any two variables used in the study is established using correlation analysis. This relationship ranges between (-) strong negative correlation and (+) perfect positive correlation. Pearson correlation was employed to analyze the level of association between the commercial banks' financial performance and the independent variables for this study (Credit accessibility, financial innovations and bank size).

The study found out that credit accessibility and bank size have a positive and statistically significant correlation with the commercial banks' financial performance as shown by (r =. 167, p = .017; r = .530, p = .000) respectively. Financial innovations therefore found to be have an insignificant correlation although it was positive with the rate of financial performance as shown by (r =. 008, p = .915).

Table 4.5: Correlation Analysis

		ROA	Credit accessibility	Financial innovations	Bank size
ROA	Pearson Correlation	1	.167*	.008	.530**
	Sig. (2-tailed)		.017	.915	.000
Credit accessibility	Pearson Correlation	.167*	1	.237**	.032
	Sig. (2-tailed)	.017		.001	.644
Financial innovations	Pearson Correlation	.008	.237**	1	.069
	Sig. (2-tailed)	.915	.001		.323
Bank size	Pearson Correlation	.530**	.032	.069	1
	Sig. (2-tailed)	.000	.644	.323	

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

c. Listwise N=205

Source: Research Findings (2018)

4.6 Regression Analysis

Financial performance was regressed against four predictor variables; Credit accessibility, bank liquidity, bank size and bank financial innovations. The analysis of regression was done considering a level of significance of 5%. The critical value obtained from the F – table was measured against the one acquired from the regression analysis.

The study obtained the model summary statistics as shown in table 4.6 below.

Table 4.6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.550[a]	.303	.293	.016257	1.903

a. Predictors: (Constant), Bank size, Credit accessibility, Financial innovations

b. Dependent Variable: ROA

Source: Research Findings (2018)

R squared, being the coefficient of determination shows the deviations in the response variable that's as a result of changes in the predictor variables. From the outcome in table 4.6 above, the value of R square was 0.303, a discovery that 30.3 percent of the deviations in financial performance of commercial banks is caused by changes in Credit accessibility, bank size and bank financial innovations. Other variables not included in the model justify for 69.7 percent of the variations in financial performance of the Kenyan commercial banks. Also, the results revealed that there exists a strong relationship among the selected independent variables and the financial performance as shown by the correlation coefficient (R) equal to 0.550. A durbin-watson statistic of 1.903 indicated that there was no serial correlation between the residuals of the varriables since the value was more than 1.5 and less than 2.5

Table 4.7: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.023	3	.008	29.129	.000[b]
	Residual	.053	201	.000		
	Total	.076	204			

a. Dependent Variable: ROA

b. Predictors: (Constant), Bank size, Credit accessibility, Financial innovations

Source: Research Findings (2018)

The value of significance is 0.000 which is below the value of p=0.05. This evidenced that it was statistically significant while forecasting how Credit accessibility, bank size and bank financial innovations affects the Kenyan commercial banks' financial performance.

Coefficients of determination were used as indicators of the trend of the association between the independent variables and the commercial banks' financial performance. The p-value under sig. column was used as an indicator of the significance of the association between the dependent and the independent variables. At 95% confidence level, a p-value of less than 0.05 was interpreted as a measure of statistical significance. As such, a p-value above 0.05 indicates that the dependent variables have a statistically insignificant association with the independent variables. The results are indicated in table 4.5

Table 4.8: Model Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.126	.024		-5.208	.000
	Credit accessibility	.013	.005	.148	2.437	.016
	Financial innovations	.001	.004	.009	.148	.883
	Bank size	.019	.002	.525	8.889	.000

a. Dependent Variable: ROA

Source: Research Findings (2018)

From the results stated above, it is seen that apart from financial innovations, the other two independent variables produced positive and value for this study that were statistically significant (high t-values, $p < 0.05$). Financial innovation produced positive but statistically insignificant values for this study.

The following regression equation was estimated:

$Y = -0.126 + 0.013X_1 + 0.019X_2$

Where,

Y = Financial performance

X_1= Credit accessibility

X_2= Bank size

On this approximated regression model , the constant = -0.126 shows that if selected dependent variables (Credit accessibility, bank size and bank financial innovations) were rated zero, the commercial banks' financial performance would be -0.126.A unit increase

in credit accessibility or bank size will result in an increase in financial performance by 0.013 and 0.019 respectively. Financial innovations were found to be insignificant determiners of financial performance.

4.7 Discussion of Research Findings

The aim of the study was to find out the association between financial deepening and the Kenyan commercial banks performance. The independent variables for this study were credit accessibility as measured by the ratio of gross loans and advances to total customer deposits, financial innovations as which was measured by the natural log of the total transactions through financial innovations and firm size as measured by natural log of the total assets. Financial performance was the dependent variable which the study sought to explain and it was being measured by the return on assets.

The Pearson correlation coefficients between the variables revealed that financial innovations have a positive but statistically insignificant correlation with the commercial banks' financial performance. It also revealed that a correlation that was positive and significant existed between credit accessibility and the financial performance of the commercial banks. Bank size exhibited a strong positive and significant association with financial performance of Kenyan commercial banks.

In the model summary it was revealed that the independent variables which includes Credit accessibility, bank size and bank financial innovations explains 30.3% of changes in the dependent variable as depicted by R^2 value meaning this model doesn't include other factors that account for 69.7% of changes in the commercial banks' financial performance. The model is fit at 95% level of confidence since the F-value is 29.129.

This shows that the overall multiple regression model is statistically significant and is an adequate model for predicting and explaining the influence of the selected independent variables on the Kenyan commercial banks' financial performance.

The results concur with Smirlock (1995) who has gone ahead to find a positive and a relationship which is significant between bank profitability and size. The study is also in agreement with Ochanda (2014) who studied on the effect of financial deepening on the small and medium sized enterprises in Nairobi County, Kenya. The survey data was collected from 100 SMEs. The financial deepening was measured using financial innovation and credit access. The findings show that both credit accessibility and financial innovation had positive effects on the growth of SMEs. The study concluded that financial deepening has a positive effect on the growth of SMEs in Nairobi County in Kenya.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

In chapter four, the data used has been presented by the researcher, analysed and the necessary insights drawn. A summary of the findings have been presented in this chapter and conclusions drawn. Recommendations for the improvement of the financial performance of banks are also presented.

5.2 Summary

The objective of this study was to determine effect of financial deepening on Kenyan commercial banks performance. According to the findings, credit accessibility, the banks size and innovation explain a big section of the variation in the commercial banks return on assets. The variables explain up to 30.3 % of the variations in financial performance of commercial banks. Considering the many factors that might impact on the return on assets, 30.3% is a significant proportion to be accounted for by three variables. This shows the importance of credit access and financial innovation to the commercial banks. The test of significance of the regression model has shown that the regression model is a significant predictor of the dependent variable.

From the findings it is clear that credit accessibility and financial innovation are important in determining the efficiency and effectiveness of the commercial banks. However financial innovation had positive but statistically insignificant impact on the banks performance. This is because most of the banks in Kenya have not utilized

technology to the fullest hence the transactions from the new technology are minimal. The tests of significance of the regression coefficients indicate that the independent variables are significant predictors of the dependent variable. The significance of the regression coefficients affirms the significance of the regression model. Overall, the data affirms theoretical propositions on the interplay between innovation, organizational efficiency and effectiveness. Financial institutions that invest more on innovation and credit accessibility are more efficient and effective compared to those that invest less, and this difference is manifest in their return on assets.

5.3 Conclusion

Credit accessibility and financial innovation have a significant impact on the return on assets of commercial banks. Those banks that invest more on innovation are able to increase their customer base and increase the amount of transactions with the clients due to the increased ease in doing business. This is evidenced by the overall reduction in cost of operation, new products which are sold to the customers to meet emerging needs and higher tapping of new markets. The findings of this study therefore concludes that financial innovation and the resulting increase in credit access enables firms to earn more income from their assets. The findings from the study was consistent with Goddard et al (2004), who established that financial deepening improves the accessibility of the financial services, increase in the customer base and reduction in the risks.

Since financial innovation is useful in lowering operating costs, this means that those financial institutions that has embraced more technology ends up being more profitable, as indicated by Bikker and Hu (2002) that financial deepening increases the credit

facilities and expansion of the financial services, also leads to reduction of operational cost and increase in the profitability of the firm. Commercial banks that innovate become more accessible to customers. Innovation therefore leads to higher credit access to customers.

5.4 Recommendations

The impact of technological innovation was insignificant however considering the importance of credit accessibility and its link to financial innovation, this study therefore recommends that commercial banks should increase their spending on research and development activities that would lead to more financial innovation and credit accessibility. This is because the banking industry has increasingly become competitive and the banks should operate with high levels of efficiency and effectiveness and financial innovation encourages this. With high levels of financial innovation, commercial banks will reduce their operating costs and this means that they will be able to offer their products at more competitive prices. When the costs of operation are low, the banks will be able to maintain adequate cash reserves which can be used in making other necessary changes that are needed in the banking industry. This in turn will lead to increased credit accessibility.

With increased innovation activities, the commercial banks will be able to serve their customers better and also be able to tap into new markets. When the customer base and market share is expanded, the commercial banks will have a better financial performance.

5.5 Limitations of the Study

Most commercial banks do not have a clear record on the expenditure on financial innovation. The study would have considered a comparison of the financial input on innovation to the outputs which is the money generated form the innovation projects. However this data was not available.

The analytical model of this study did not allow the examination of insights on how various approaches to innovation influence the outcomes in terms of financial performance, meaning that, from the findings, it is not clear if different innovation strategies would yield the same outcome.

The study did not consider how organizational factors influence the relationship between the study's variables. Large financial institutions have more resources than the medium and small institutions do, meaning their approach to financial innovation will not be the same. With their enormous resources, large financial institutions can develop innovative products that span a wide spectrum, and this means these institutions can appeal to a wider segment of new markets than smaller institutions can do.

The efficiency of investments in financial innovation, therefore, differs in large financial institutions and small financial institutions because such an investment in a large institution earns more than the one in a smaller institution does. Thus, it is important to examine if organizational factors influence the relationship between financial innovation, credit access and financial performance.

The study also faced the time constraints, it is suggested that the future study should consider more periods since my study only focused on the 5 year period of the study variables.

5.6 Suggestions for Further Research

This study should be replicated but the analytical model should include a variable that measures the organizational factors that influence the strategy for financial innovation in a financial institution. Delineating the factors that shape how financial institutions undertake financial innovation would help provide insight on the elements that affect the link between financial innovation, credit access and financial performance. As financial institutions turn to innovation as a strategy that helps them acquire and sustain competitiveness, it is important that they understand the factors that influence the effectiveness of financial innovation in helping them improve their financial performance, and finding out the moderating variables is one way to find such insights.

REFERENCES

Arellano, M., and Bover, O. (1995). Another look at the instrumental-variable estimation of error component models. *Journal of Econometrics* 68, no. 1: 29–52.

Aizenman, J. (2005). *Financial liberalizations in Latin America in the 1990s: a reassessment.* The World Economy 28, no. 7: 959–83.

Arestis, P., Chortareas, G. and Desli, E. (2006). *Financial development and productive efficiency in OECD countries: An exploratory analysis.* The Manchester School 74, no. 4: 417–40.

Arestis, P., and Demetriades, P. (1997). Financial development and economic growth: Assessing the evidence. *The Economic Journal* 107, no. 442: 783–99.

Arestis, P., P. Demetriades, and Fattouh, B. (2003). Financial policies and the aggregate productivity of the capital stock. *Eastern Economic Journal* 29, no. 2: 217–42.

Barajas, A., Steiner, R., Salazar, N., (1999). *Interest spreads in banking in Colombia* 1974–1996. IMF Staff Papers 46, 196–224

Barro, R. (1997). *Determinants of economic growth: A cross-country empirical study*. Cambridge, MA: The MIT Press.

Beccalli, E., Casu, B. and Girardone, C. (2006). Efficiency and stock performance in European banking. *Journal of Business, Finance, and Accounting* 33, nos. 1–2: 245–62.

Beck, T., and Levine, R. (2002). Industry growth and capital allocation: Does having a market- or bank-based system matter? *Journal of Financial Economics* 58, nos. 1–2: 147–80.

Beck, T., Levine, R. and Loayza, N. (2000). Finance and the sources of growth. *Journal of Financial Economics* 58, nos. 1–2: 261–310.

Bencivenga, V., and Smith, B. (1991).*Financial intermediation and endogenous growth*. Review of Economic Studies 58, no. 2: 195–209.

Benhabib, J., and Spiegel, M. (1994). The role of human capital in economic development: Evidence from aggregate cross-country data. *Journal of Monetary Economics* 34, no. 2: 143–74.

Berger, A.N., Hanweck, G.A., Humphrey, D.B., (1987). Competitive viability in banking: scale, scope and product mix economies. *Journal of Monetary Economics;* 20, 501–520.

Bikker, J.A., Hu, H., (2002). *Cyclical patterns in profits, provisioning and lending of banks and procyclicality of the new Basel capital requirements*. BNL Quarterly Review 221, 143–175.

Blundell, R., and Bond, S.R. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics* 87, no. 1: 115–43.

Boyd, J., and Prescott, E. (1986). Financial intermediary-coalitions. *Journal of Economic Theory* 38, no. 2: 211–32.

Demirguc-Kunt, A., Huizinga, H., (2000). Financial structure and bank profitability. Policy Research Working Paper Series 2430.The World Bank.

Diamond, D.W. (1984). *Financial intermediation and delegated monitoring*. Review of Economic Studies 51, no. 3: 393–414.

Felix, Ndege. (2012). *The impact of financial sector deepening on economic growth in Kenya*. University of Nairobi.

Fisman, R., and Love.I. (2003). Trade Credit, financial intermediary development, and industry growth. *Journal of Finance* 58, no. 1: 353–74.

Georgios E. Chortareas, Jess G. Garza-Garca & Claudia G. (2011). Financial deepening and bank productivity in Latin America, *The European Journal of Finance*, 17:9-10, 811827, DOI:10.1080/1351847X.2010.538512

Goddard et al., (2004). *The profitability of European banks: a cross-sectional and dynamic panel analysis*. Manchester School 72, 363–381.

Guillaumont Jeanneney, S., Hua, P. and Liang, Z. (2006). *Financial development, economic efficiency, and productivity growth: Evidence from China*. The Developing Economies 44, no. 1: 27–52.

Hartmann, P., Heider, F. Papaioannou, E. and Duca. M.L. (2007). *The role of financial markets and innovation in productivity and growth in Europe.* ECB Occasional Paper Series 72, European Central Bank, Bonn, Germany.

Herrero, A., Santillan, J. Gallego, S. CuaDomesticfinancialo, L. and Egea.C. (2002). *Latin American financial development in perspective.* Banco de Espana, Document 0216.

Hsieh, C., and Klenow, P. (2007).*Misallocation and manufacturing TFP in China and India.* NBER Working Paper 13290, National Bureau of Economic Research, Cambridge, USA.

King, R., and Levine, R. (1993a). Finance and growth: Schumpeter might be right. *Quarterly Journal of Economics* 108, no. 3: 717–37.

King, R., and Levine ,R. (1993b). *Financial intermediation and economic development. In Financial intermediation in the construction of Europe,* eds. C. Mayer and X. Vives, 156– 89. London: CEPR

King, R., and R. Levine.(1993c). Finance, entrepreneurship and growth: Theory and evidence. *Journal of Monetary Economics* 32, no. 3: 717–37.

Levine, R. (1998). The legal environment, banks, and long-run economic growth. *Journal of Money,* Credit and Banking 30, no. 3: 596–613.

Levine, R. (2004). *Finance and growth: Theory and evidence*. NBER Working Paper Series 10766, National Bureau of Economic Research, Cambridge, MA.

Levine, R., Loayza, N. and Beck, T. (2000). Financial intermediation and growth: Causality and causes. *Journal of Monetary Economics* 46, no. 1: 31–77.

Lozano-Vivas, A. and J.T. Pastor,(2006).*Banking and economic activity performance: An empirical study at the country level.* The Manchester School 74, no. 4: 469–82.

Malmquist, S. (1953).*Index numbers and indifference surfaces*. Trabajos de Estatistica 4, no. 1: 209–42.

McKinnon, R. (1973). *Money and capital in economic development*. Washington, DC: Brookings Institution.

Miller, S.M., Noulas, A.G., (1997). *Portfolio mix and large-bank profitability in the USA*. Applied Economics 29, 505–512.

Molyneux, P., Thornton, J., (1992). Determinants of European bank profitability: a note. *Journal of Banking and Finance* 16, 1173–1178.

Nicholas M. Odhiambo, (2005). *Financial Liberalisation and Financial Deepening: Evidence from three sub-Saharan African (SSA) countries*. African review of money finance and banking, (2005), pp. 5-23.

Panayiotis P. Athanasoglou, et al, (2006). *Bank-specific, industry-specific and macroeconomic determinants of bank profitability.* International Financial Markets, Institutes and Money 18 (2008) 121–136

Restuccia, D., and Rogerson, R. (2007). *Policy distortions and aggregate productivity with heterogeneous plants.* NBER Working Papers 13018, National Bureau of Economic Research, Cambridge, USA

Rioja, F., and Valev. N. (2004). *Finance and the sources of growth at various stages of economic development.* Economic Enquiry 42, no. 1: 127–40.

Rose W. N. and J. W. Kabubo, (1998).*Financial sector reforms and interest rate liberalization: the Kenyan experience*. University of Nairobi.

Samuel Mbadike Nzotta & Emeka, J. Okereke Financial deepening and economic development of Nigeria: An empirical investigation. *African Journal of Accounting*, Economics, Finance and Banking Research Vol. 5.No. 5.

Schumpeter, J. (1934). *The theory of economic* development: An inquiry into profits, capital, credit, interest, and the business cycle. Cambridge, MA: Harvard University Press.

Shaw, E. (1973). *Financial deepening in economic development*. New York: Oxford University Press.

Simar, L., and P.W. Wilson, (1998). *Sensitivity analysis of efficiency scores: How to bootstrap in nonparametric frontier models.* Management Science 44, no. 1: 49–61.

Simar, L., and P.W. Wilson, (1999). Estimating and bootstrapping Malmquist indices. *European Journal of Operational Research* 115, no. 3: 459–71.

Short, B.K., 1979.The relation between commercial bank profit rates and banking concentration in Canada, Western Europe and Japan. *Journal of Banking and Finance* 3, 209–219.

Stiglitz, J.E., and B. Greenwald, (2003). *Towards a new paradigm in monetary economics.* Cambridge: Cambridge University Press.

Tortosa-Ausina, E., E. Grifell-Tatje, C. Armero, and D. Conesa,(2008). Sensitivity analysis of efficiency and Malmquist productivity indices: An application to Spanish savings banks. *European Journal of Operational Research* 184, no. 3: 1062–84.

APPENDIX I: LIST OF COMMERCIAL BANKS IN KENYA

1. ABC
2. Bank of Africa
3. Bank of Baroda
4. Bank of India
5. Barclays
6. CFC Stanbic Holdings
7. Citi bank
8. CBA
9. Consolidated bank
10. Cooperative
11. Credit bank
12. Development Bank of Kenya
13. Diamond Trust Bank
14. Eco Bank
15. Equatorial Commercial bank
16. Equity Bank
17. Family Bank
18. Fidelity Bank
19. First Community Bank
20. Giro Commercial Bank
21. Guaranty Trust Bank Kenya
22. Guardian Bank
23. Gulf African Bank
24. Habib Bank
25. Habib Bank AG Zurich
26. Housing finance
27. I&M Bank
28. KCB
29. Middle East Bank Kenya Ltd
30. National Bank of Kenya
31. Oriental Commercial Bank
32. Paramount Universal Bank
33. Prime Bank Limited
34. Standard Chartered Bank
35. Trans National Bank
36. NIC Bank
37. Oriental Commercial Bank
38. Sidian Bank
39. Standard Chartered Kenya
40. United Bank for Africa
41. Victoria Commercial Bank