THE EFFECT OF FIRM SIZE ON EFFICIENCY OF MICROFINANCE BANKS IN KENYA

MONICAH WAMBUI NG'ANG'A

D61/77336/2015

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION, SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI

NOVEMBER 2016

DECLARATION

I hereby declare that this is my original work and has not been submitted for examination in any other university or institution of higher learning for any academic award of credit.

Signed …….. Date……

Monicah Wambui Ng'ang'a

D61/77336/2015

This research project has been submitted for examination with my approval as the University Supervisor

Signed …….. Date……

Mr. James Ng'ang'a

Lecturer

Department of Finance and Accounting

School of Business, University of Nairobi

ACKNOWLEDGEMENTS

This research project could not have been a reality without the invaluable input of a number of groups and individuals whom I sincerely wish to recognize. Special thanks to my supervisor, Mr. Ng'ang'a for his professional guidance and advice when I was undertaking the project. I also thank the entire staff of the School of Business for their contribution in one way or the other. Lastly, I wish to thank God for good health when I was pursuing my studies.

DEDICATION

The project is devoted to my husband, Hezekiah Muchanga my kids, Fyne and Fedian for their moral support, sacrifice plus guidance when I was pursing the research project.

ABSTRACT

Banking sector in Kenya is facing rapid competition which is attributable to a number of factors such as adoption of modern technologies and evolving customer needs. This kind of competition has necessitated the need for Microfinance banks to improve efficiency of their services in order to serve more customers and enhance sales growth. The research wants to establish the effects of on efficiency of microfinance banks in Kenya. A descriptive research design was utilized to find out the hypothetical relationships between variables. Population for the study included 13 Microfinance banks that were licensed to work and operate in Kenya. The sample size for the study included 9 Microfinance banks that were operational in the study period that was between 2011-2015. Secondary sources of data were collected from annual reports of Central Bank of Kenya. The results were presented in form of descriptive and inferential statistics. The results of the study indicate that there is a significant link between the size of the bank, liquidity and capital adequacy and efficiency of microfinance bank. Independent variables explained 22.8% of the variability of efficiency of Microfinance banks. Analysis of variance found that F was statistically insignificant since its probability value was more than 5%, p=.063. There lacked a link between bank size and efficiency. Bank size was significant while customer deposits, asset quality and liquidity were seen to be statistically insignificant. The study recommends that Microfinance banks should invest in modern technologies to effectively integrate all the banks functions and activities to boost efficiency of banking operations. This will minimize supervision and communication costs and impact positive on bank performance. The study was limited to time and cost which necessitated a study of Microfinance banks only. The results obtained in this study are distinctive and cannot therefore be utilized for either direct application in another sector or to make generalization of the banking sector in Kenya. Future researchers can consider investigating this study in other sectors such as listed firms and manufacturing firms which are similar in terms of size and areas of intervention. This will allow the researchers to increase the wide scope of their study whereby findings can be compared and a more reliable conclusion can be drawn. Due to macroeconomic factors such as technological changes, regulations and legal framework among others, it is preferable that a parallel study should be conducted after a period of like fifteen years to find out whether this relationship will still hold.

TABLE OF CONTENTS

DECLARATION ..... **ii**
ACKNOWLEDGEMENTS ..... **iii**
DEDICATION ..... **iv**
ABSTRACT ..... **v**
LIST OF TABLES ..... **viii**
ABBREVIATIONS AND ACRONYMS ..... **ix**

CHAPTER ONE: INTRODUCTION **1**
1.1 Background of the Study 1
1.1.1 Firm Size 2
1.1.2 Concept of Efficiency 3
1.1.3 The Relationship between Bank Size and Efficiency 4
1.1.4 Microfinance Banks in Kenya 5
1.2 Research Problem 6
1.3 Research Objective 8
1.4 Value of the Study 8

CHAPTER TWO: LITERATURE REVIEW **9**
2.1 Introduction 9
2.2 Theoretical Framework 9
2.2.1 Agency Theory 9
2.2.2 Transaction Cost Theory 10
2.2.3 Stakeholder Theory 11
2.3 Determinants of a Bank's Efficiency 12
2.3.1 Customer Deposits 13
2.3.2 Asset Quality 13
2.3.3 Liquidity 14
2.3.4 Capital Adequacy 14
2.4 Empirical Studies 15
2.4.1 International Studies 15
2.4.2 Local Studies 16
2.5 Conceptual Framework 18
2.6 Summary of the Literature Review 19

CHAPTER THREE: RESEARCH METHODOLOGY 20
3.1 Introduction 20
3.2 Research design 20
3.3 Study Population 20
3.4 Sample Size 20
3.5 Data Collection 21
3.6 Data Analysis 21
3.6.1 Analytical Model 22
3.6.2 Tests of Significance 23

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION 24
4.1 Introduction 24
4.2 Response Rate 24
4.3 Descriptive Statistics 24
4.4 Pearson Correlation Coefficient 25
4.5 Regression Analysis 26
4.5.1 Model Summary 27
4.5.2 Analysis of Variance 27
4.5.3 Model Coefficient 28
4.6 Chapter Summary and Interpretation of Findings 29

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS 31
5.1 Introduction 31
5.2 Summary of Findings 31
5.3 Conclusion 32
5.4 Recommendations 33
5.5 Limitations for the Study 34
5.6 Suggestion for Further Studies 35
RFERENCES 36
APPENDICES 42
APPENDIX I: LETTER OF INTRODUCTION 42
APPENDIX II: COMPUTED MEASUREMENTS OF THE STUDY VARIABLES 43
APPENDIX III: LIST OF MICROFINANCE BANKS IN KENYA 45

LIST OF TABLES

Table 4.1 Descriptive Statistics..... 25

Table 4.2 Pearson Correlation Coefficient..... 26

Table 4.3 Model Summary 27

Table 4.4 Analysis of Variance..... 27

Table 4.5 Model Coefficients 28

ABBREVIATIONS AND ACRONYMS

AMFI Association of Microfinance Institutions

ANOVA Analysis of Variance

CBK Central Bank of Kenya

DEA Data Envelopment Analysis

DEA Data Envelopment Approach

IT Information Technology

SPSS Statistical Package for Social Sciences

UK United Kingdom

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Banks are key players in economic development; they provide credit facilities and deposit services that facilitate business transactions. The banking sector has experienced a rapid growth owing to the introduction of use of diversified product or services from traditional loans and deposit services. These entail global banking services, credit card services, and payroll accounting, and data processing (Srivastava, 2009). Although banks of all size offer credit services to customers and small businesses, large banks possess more capital to cater for the credit needs of large firms while they operate at a scale that allows for more specialized banking services which are provided in an efficient manner.

While conducting a study that involved a comparison of smaller banks and big banks in United States, Allen and Rai (2009) found that, local economic factors favoured smaller banks; larger banks were less affected by conditions in their immediate area because legal restrictions and efforts to spread the risk of loan portfolios were limited by the size of loans. Customers who got loans from small banks were within the neighborhoods. In contrast, large banks extended huge loans to large companies in distant locations who used the bank services that were located in wide geographical areas. Large banks considered customers across the nation and other foreign countries; this was because growth of such banks was partially determined by performance of local economy. Larger banks have an increased access to resources such as information communication technology and research and development. These resources play an important role in enabling banking innovations such as new

products or services that aim at meeting diverse customer needs such as improved accessibility, flexibility and convenience and reduced cost.

One of the main explanation why large banks make investment in technology and research and development is that they are keen in ensuring that they offer superior products or services in the most efficient and effective way. This contributes to sales growth and reduced operational costs (Goldberg and Lai, 1996).

1.1.1 Firm Size

Pandey (2005) defines the size of the organisation in form that assets that it holds. Large firms are less disposed to insolvency; this is because such firms have diversified their investment segments and hence lower their risks. Low levels of bankruptcy allow larger firms to access high amounts of debt. Large firms may reduce the level of information asymmetry in the market by taking advantage of opportunities in the market that enhances performance. Large firms are more stable as compared to smaller firms they have capacity to satisfy their financial duties and hence have a high degree of information exposure (Deis and Guffey, 2005).

Large banks meet the customers' financial demands as a result of their wide network of branches; this has a greater impact on large banks as compared to small banks that do not service these markets. Willison, Dimitris & Hong (2013) argue that efficiencies induced by bank growth are determined by bank size because economies of scale differ based on a range of possible sizes of bank operations. Larger firms have better market experiences and well defined networks and hence stand a better chance as compared to younger that are still struggling to establish themselves in the market.

Ammar and Russell (2003) assessed the factors that affected profitability of a bank prior and during the financial crisis that faced Switzerland. The results found that both large and small banks were positively related to profitability. Further, it was unravelled that big and smaller banks were profitable compared to medium-sized banks prior the crises. One of the reasons given why larger banks were profitable was because they had more efficient services since they adopted modern technologies. The banks had diversified their products and services to minimize risks, by handling bulky products and services and having complex systems and processes enabled the banks to enjoy economies of scale.

1.1.2 Concept of Efficiency

Berger and De Young (201) define efficiency as a level of performance that is achieved through use of low amount of input to generate output. It involves use of inputs to earn a specific output that is time and energy also included. Efficiency as a concept can be evaluated by determining the ratio of useful output to total input while reducing wastage of materials for instance, physical materials, energy and time in an attempt to realize the expected output.

The soundness of the banking sector impacts on financial system stability of a country and the economic activities because banks are vital in managing the flow of funds in an economy. Thus, continuous functioning of banks with a high level of efficiency is critical. In view of this, efficiency is how a firm utilizes its costs or effort to obtain maximum output. Efficiency involves obtaining the maximum output using the minimum input, financial institutions and the financial sector operate in an environment that is dynamic hence efficiency is a key component in achieving a stability of the financial system.

Drake and Hall (2013) note that bank's efficiency increases profitability because more sales are processed and many customers are served. The information got from assessing the performance of a bank can be used to enhance overall efficiency of operations while contributing to competitiveness (Hasan and Marton, 2009). Cost efficiency view banks' cost expenditure (sum of non interest expenses) as a function of selected variables believed to affect banks cost structure and cost residual, which reflect the cost whose explanation is not provided for by the banking variables. The cost whose explanation is not provided for are believed to be a measure of bank's cost inefficiency. The study will measure efficiency using cost efficiency that will be computed by dividing total operating expenses by total income.

1.1.3 The Relationship between Bank Size and Efficiency

Berger and De Young (2010) explanation on efficiency is evident in large banks as compared to small banks while viewing efficiency from a cost perspective. However, in terms of efficiency, smaller banks are more efficient. This is an indication that when banks increase in size, they can easily manage their cost however, been efficient in income generation is sometimes a challenge to them. A study by Srivastava (2009) on Indians banks found that a high efficiency for medium-sized and large banks. Small banks were found to be less efficient an evident that the relationship between efficiency and size was not positively monotonic. Small banks were less efficient an evident that the relationship between efficiency and size of bank was not monotonic.

Contrasting this finding, a research by Allen and Rai (2009) found that larger banks showed a higher level of inefficiency for most of the countries studied. A study done by Goldberg and Rai (1996) which sampled from 11 countries from Europe revealed that larger banks showed less inefficiency. However, there lacked a clear evident that

established an apparent relationship between estimated efficiencies and size of the bank as demonstrated in various studies (Fukuyama, 2007; Altumbas and Seth, 2000) for Japanese bank and yet another study (Lang and Wezel, 1996) for German cooperative bank. Hasan and Marton (2009) in their study on Hungarian bank found out that large bank were relatively efficient unlike small banks. Sathye (2011) on his study on Australian banks unearthed existence of a positive link between size and efficiency. Further, it was established that technical inefficiency highly contributed to inefficiency. Isik and Hassan (2002) assessed the link between efficiency and size of an organisation in Turkish banks, a negative connection was found between efficiency and bank size.

1.1.4 Microfinance Banks in Kenya

Microfinance Act of 2006 gives an outline of the supervisory and regulatory structure of Microfinance banks in Kenya. The Microfinance Act was postulated on 22nd May, 2008, it key main functions include licensing and supervision to regulate its establishment. This Acts allows Microfinance banks to mobilize customer deposits from the customers and to enhance access to credit, this enables Microfinance banks to easily lend and money and gain from an interest income which the banks source of revenue.

Microfinance Act of 2006 was revised by deleting the term institution that was submitted to Microfinance bank licensed under this Act. Microfinance bank is a firm which is licensed to carry out business within the confines of micro financing. Microfinance banks are supervised and regulated by the Central Bank of Kenya (CBK) (McIntosh, De Janvry & Sadoulet, 2005).

AMFI is a member-based institution which is registered under the Societies Act through lending MFIs in Kenya, this institution is primary charged with the responsibility of increasing the capacity of Microfinance industry to enhance access to deposits to low income earners. The reason for the establishment of this institution was the need to have a biding voice to lobby Kenya government and to negotiate for better policy formulation to enhance information access and experiences as well as to create a network with both local and global actors. Presently, AMFI consists of 62 members' institutions that offer services to more than 6.5 million middle and poor class families with financial solutions (AMFI, 2014).

Past the last decade, banking industry in Kenya has faced tremendous Increase especially Microfinance banks, this has been as a result of competition, adoption of modern technology and financial innovation as well as the changing needs of the customers, the had forced banks to integrate their systems and adopt more efficient and effective strategies to boost efficiency in banking operations and reduced cost. These strategies are meant to ensure that the bank offers superior quality products and services in manner that is flexible and efficient. Financial liberalization is a regulatory change that has created a favourable environment to conduct Microfinance business in a free and fair manner. It has increased access to banking products and services to lower class of customers who could not afford banking services previously hence created an opportunity for access of banking services to a wide customer segment (Mwangi, 2014).

1.2 Research Problem

Large firms enjoy economies of scale from average costs of production which is low while operational activities are efficient. Abel (2008) posits that large firms easily

access credit facilities from financial institutions for investing; such firms attract competent and efficient employees who make invaluable input. Larger firms also have the advantage of more efficient production and a high bargaining power over suppliers, distributors and market experience and perfect marketing and distribution systems. Hence such firma can set prices above a competitive level (Feng and Serlitis, 2010).

Banking sector in Kenya is facing rapid competition which is attributable to a number of factors such as adoption of modern technologies and evolving customer needs. This kind of competition has necessitated the need for Microfinance banks to improve efficiency of their services in order to serve more customers and enhance sales growth. In view of this, Mwangi (2014) argued that it was still a challenge for Microfinance banks to achieve efficiency because of most of them could not afford modern technologies to integrate their systems and boost their efficiency.

Other studies revealed existence of economies of scale in American banks (Feng and Serlitis, 2010; Wheelock and Wilson, 2009). Further, a study by Drake and Hall (2013) on Japanese banks found empirical proof on existence of significant relationship between size of bank and efficiency in both technical and scale areas. In yet another study, Mitchell and Onvural (2014) found a statistically significant relationship between large American banks and efficiency. Kimani (2014) found that firm size was negatively related to profitability of manufacturing firms in Kenya. Kithuka (2013) determined the nexus among firm size and asset growth in firms listed at the NSE. The results found absence of a significant difference between firm size and asset growth. Kariuki (2012) findings indicated a negative relationship between growth and profitability of listed firms in Kenya. Studies by Kimani (2014), Kithuka (2013) and Kariuki (2012) have concentrated on the link between bank size and

profitability, the link bank size and asset growth and the link growth and profitability. Limited focus has been given on the link between efficiency and firm size in the banking sector in particular Microfinance banks in Kenya. The study therefore sought to find an answer to the question: What could be the effect of bank size on efficiency of Microfinance banks in Kenya?

1.3 Research Objective

The main reason of the study was to establish the effect of size of bank on efficiency of Microfinance banks in Kenya.

1.4 Value of the Study

CBK might use empirical findings of this study to formulate policies that will provide a platform for Microfinance banks to grow and increase in size to gain efficiency and competitiveness.

Microfinance banks will understand how bank size contributes to efficiency and the appropriate measure to use when measuring the size of a bank and its efficiency. The banking industry will learn the contribution of bank size in enhancing efficiency and ways of increasing efficiency of a bank to minimize costs. Finance Practioners will improve their understanding concerning bank size and cost efficiency and the most appropriate indicators to measure these variables.

Students will increase their knowledge and understanding on how bank size leads to efficiency and the theories that support this relationship, their application and relevance. Further, the researchers interested in this field of research might utilize suggestions for this study to help do more research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Comprised here in is a conceptual and empirical discussion of arguments from different scholars in relation to size and efficiency of firms. The chapter discusses the theoretical framework, bank efficiency determinants, empirical review and chapter summary.

2.2 Theoretical Framework

Under this section, the study has provided a discussion of the theories that support this study which includes: Agency Theory, Transaction Cost Theory and the Stakeholder Theory. These theories are discussed based on the study objective which is the link between bank size and efficiency.

2.2.1 Agency Theory

This theory was proposed by Jensen and Meckling (1976) it explains that decisions made by the top management affects the performance of the bank including the owners and the stakeholders. Agency theory posits that management of a bank is expected to ensure that the goals of the stakeholders are achieved. The management of a bank should set achievable goals and targets and make investment decisions that lead the bank to improved performance hence creating an opportunity for the bank to engage in efficient investments. This enhances growth and contributes to an increase in the size of the bank. The decisions made by the top management should put the priorities of the stakeholders first; the firm's resources' should be put into productive use to enable the bank to realize its corporate goals (Laffort & Martimost, 2008).

The management should invest in modern technologies to integrate their systems to enhance efficiency, improve the quality of their services and minimize costs. Employees of a firm are human capital assets that perform an a significant role in contributing towards the realization of set goals and objectives. An efficient and lean staff enables the firm to offer quality services; this improves customer satisfaction and attracts new customers resulting into sales growth. Growth in sales results into an increase in sales turnover that impact positively on efficiency and growth of a firm. Growth is part of the overall goal of the bank which increases its size (Laffort et al., 2008).

Maksimovic & Phillips (2002), the greater number of administrative layers in the organization, the greater the transactional cost and agency cost. A common proxy for the number of administrative layers is the number of employees. Lamont & Polk (2002) posit that the management of the firm has control over the resources which can be effectively utilized to achieve efficiency of the firm. These resources include assets, technology and intellectual property. Jensen (1976) contends that when a firm has a low level of leverage (high capital ratio), its debt increases, this motivates the top management to minimize the agency debt cost and thus increases the debt of the firm.

2.2.2 Transaction Cost Theory

This theory was first described in the work of Coase (1937), he explained why companies exist, expand or outsource activities from external environment. Boerner and Macher (2002) argued that costs theory proposes that apart from banks attempting to reduce costs of exchanging resources with external environment, they also make an effort to avoid needless bureaucratic internal cost of exchange. Banks are making a

comparison of exchanging resources with the environment with bureaucratic costs of doing activities internally. When the bank grows in size it aims at minimizing its bureaucratic costs through integration to achieve decentralization of systems, this creates a platform for efficient investment decisions and a high return for investment (Brouthers and Brouthers, 2004).

Firms and markets have different ways of organizing economic activities. In a case where bank's in-house bureaucratic costs is lower than external transaction costs, the bank will experience growth since it will be in position to conduct its activities cheaply. However if in house bureaucratic cost is higher than the external transaction the bank may downsize in order to minimize its external transactions. It is can be argued that the bank will expand as long as its activities can be done more cheaply as compared to outsourcing those activities to external providers in the banking industry. This will enable the bank to save huge operational costs hence invest in modern technologies to improved efficiency. Banks are devising ways to enhance their technological capabilities in order to minimize their internal operational costs; this allows the banks to save huge costs while providing value adding products and services that meet the needs of their customers (Dutta & John, 1995).

2.2.3 Stakeholder Theory

This theory was put forward by Freeman (1984), Friedman & Miles (2002) contends that "the firm is a system of stakeholders that operate within the larger systems of the host society which provides legal and market infrastructure for the activities of the firm". The goal of any organization is maximization of the wealth of the shareholders by converting their stakes into products and services.

This is also supported by Blair (2005) who argues that manager should make decisions that consider the interest of all the stakeholders of the firm. Stakeholder theory is derived from sociology, organisational behaviour and the policies of special interest. This theory considers a wider group of constituents unlike focusing on shareholders.

The result of concentrating on shareholders is ensuring that shareholder value is achieved while a wide group of stakeholders such as employee, providers of credit, customers, suppliers, government and the local authority is taken into account, the main motivation on shareholder value is less evident. This implies that the shareholders have a conferred interest in ensuring that the resources are effectively utilized for the benefit of the whole society (Duckworth & Moore, 2010).

The supporters of this theory, Donaldson & Preston (1995) argue that stakeholder theory fails to provide a single corporate objective, but directs managers to serve the interest of many stakeholders. They further argue that without a clear mission and vision, it might lead to loss of focus and inefficiency hence competitive failure. It is was argued that multiple objectives are no objective at all. In view of this, the management should represent the interest of all the stakeholders by meeting bank's goals and set targets in the most efficient and effective way, this enhances bank growth resulting to increased size.

2.3 Determinants of a Bank's Efficiency

Efficiency is important for banks considering the nature of their operations, with a high efficiency a bank can serve more customers and minimize their operational costs. Large banks opt to invest in modern technologies to minimize costs and improved

speed in delivery of products and services. The determinants of a bank's efficiency include: Customer Deposits, Asset Quality, Liquidity and Capital Adequacy.

2.3.1 Customer Deposits

Scholterns (2000) notes that customer deposits are amounts give to the bank by a customer before getting any form of service. The bank is expected to ensure safe customer of the money until when the customer is in need of the money. It is the obligation of the bank to ensure safe customer of the depositors' money. Increase in customer deposits is achieved through use of modern technologies that improve access to banking services. This provides a platform where more customers can deposit their money. This is supported by a study by Mendes & Reblo (2009) who argued that use of banking technologies enhanced customer access to banking services which resulted to an increase in customer deposits. Customer deposits will be measured by the percentage increase in bank deposits annually.

2.3.2 Asset Quality

Banks give loans to borrowers to enable them to make investments that can promise better returns to be able to pay back the principle amount and interest. Loan is a primary source of income for banks. Therefore, the manner in which these loans are managed highly depends on a bank's efficiency. A bank that has an efficiency business processes and systems can easily process loans and advances to customers. Rasiah (2010) argue that banks should follow credit policies and regulations when giving out loans and credit because the more they provide loans to their customers the more they get exposed to default that might expose them to financial loss. Chan (2009) studied the effect of interest margin on loans offered by banks in Jordan as an important driver efficiency.

. The findings revealed a positive relationship between interest margin on loans and efficiency. This conforms to a citation made by Abreu & Mendes (2003) that showed a strong link between loan ratio and efficiency. In measuring the loans quality, Rasiah (2010) recommended the use of non-performing loans as an indicator of the loan quality. He argued that banks that had less non-performing loans were more efficient as compared to banks that recorded huge amounts of non-performing loans. Vong & Chan (2009) utilized the loan-loss provision to total loans as a proxy to non-performing loans. To include loans and advances (interest income) as a variable to determine efficiency, Vong et al (2009) adopted loans as a proportion of total assets this was measured using total gross loans divided by total assets.

2.3.3 Liquidity

Liquidity means the ability of a firm to be able to pay its short-term and long-term financial obligation. A firm should be able to maintain an optimal liquidity in order to retain the confidence of its suppliers and to take advantage of viable investments. This is consistent with a study by Eljelly (2004) who conducted a study to a sample of 45 companies in Saudi Arabia in joint stock, on the link between profitability and liquidity, as determined by current cash gap and current ratio. The Link between firm's efficiency and its level of liquidity was calculated using current ratio.

Singh (2008) assessed the association of working capital management and efficiency of banks in Europe. The research found a positive link between working capital components and efficiency. Further, the results found that banks that effectively managed their liquidity were efficient in their operations. Further, Chakraborty (2008) found a strong correlation between liquidity and bank's efficiency.

2.3.4 Capital Adequacy

Banks require a strong capital base in the developing countries to cope with the financial crises and protect depositors when a bank goes bankruptcy and distress. Commercial banks that hold a high level of equity can easily mitigate affect profitability positively. In reference to Basel II and III accord, many banks become insolvent as a result of credit losses and thus it is advisable for commercial banks to maintain a high standard capital to take in loss and cope with stress period (Rasiah, 2010).

2.4 Empirical Studies

This section of the study covers both international and local studies in relation to the link between bank size and efficiency. These studies consist of divergent and convergent views of different scholars in connection to this subject.

2.4.1 International Studies

Saliha & Abdessatar (2011) studies the factors that affect size of 40 firms in Tunisia. The study used a longitudinal research design to establish key factors that affected the firm's size. Panel data was utilized for duration of five years. The research found that there the factors that affected the size of the firm include efficiency and liquidity. Larger firms adopted modern technologies which enhanced efficiency in their operations.

Tanna, Pasiouras and Nnadi (2011) using a sample of 17 banks in UK performed a study on the effects of board size on efficiency of banks in UK from 2001 to 2006. Their study intended to show empirical evidence on the relationship between efficiency of UK banks and board structure in terms of board composition and board

size. The study established that board size was positively related to efficiency. Board composition was found to a significance influence on all measures of efficiency.

On assessment of the effects of firm size and profitability of the firms operating in Thailand, Archarungroj & Hoshino (2012) found that there was a significant relationship between firm size and profitability. It was also revealed that large firms were more efficient as compared to smaller firms.

Banchuenvijit (2012) evaluated the factors that affected performance of firm that operated in Vietnam. The study used an explorative research design. A positive association between total sales and efficiency was found to exist in firm. An insignificant relationship was found between the number of employees, efficiency and profitability of firms.

Karray and Chichti (2013) studied the link bank size and efficiency in developing economies. Data Envelopment Approach was used to examine the effect on outcome of choice to measure operations of banking using a value added approach. Used panel data of four hundred and two commercial banks selected from fifteen developing countries from 2000 to 2003. The found that banks faced technical inefficiency that comprised a number regular waste of materials that surpassed forty six percent of the real levels.

2.4.2 Local Studies

Babalola (2014) tested the link between bank size and financial performance of commercial banks. The target population involved 20 commercial banks. Data was obtained from secondary sources for a period of five years. Data was analysed using Stata software. The findings revealed that bank size and change in net assets has a significant positive relationship with financial performance.

Salim (2014) examined the connection between size and money wise performance of local banks in Kenya. The study used a descriptive research design to establish the relationship between variables. Secondary data sources of data for a five-year period were used. The results found that size impacted positively on financial performance. Further, it was concluded that large-sized banks were further efficient and profitable as compared to smaller banks. On the contrary, there was no link between bank branches and financial performance.

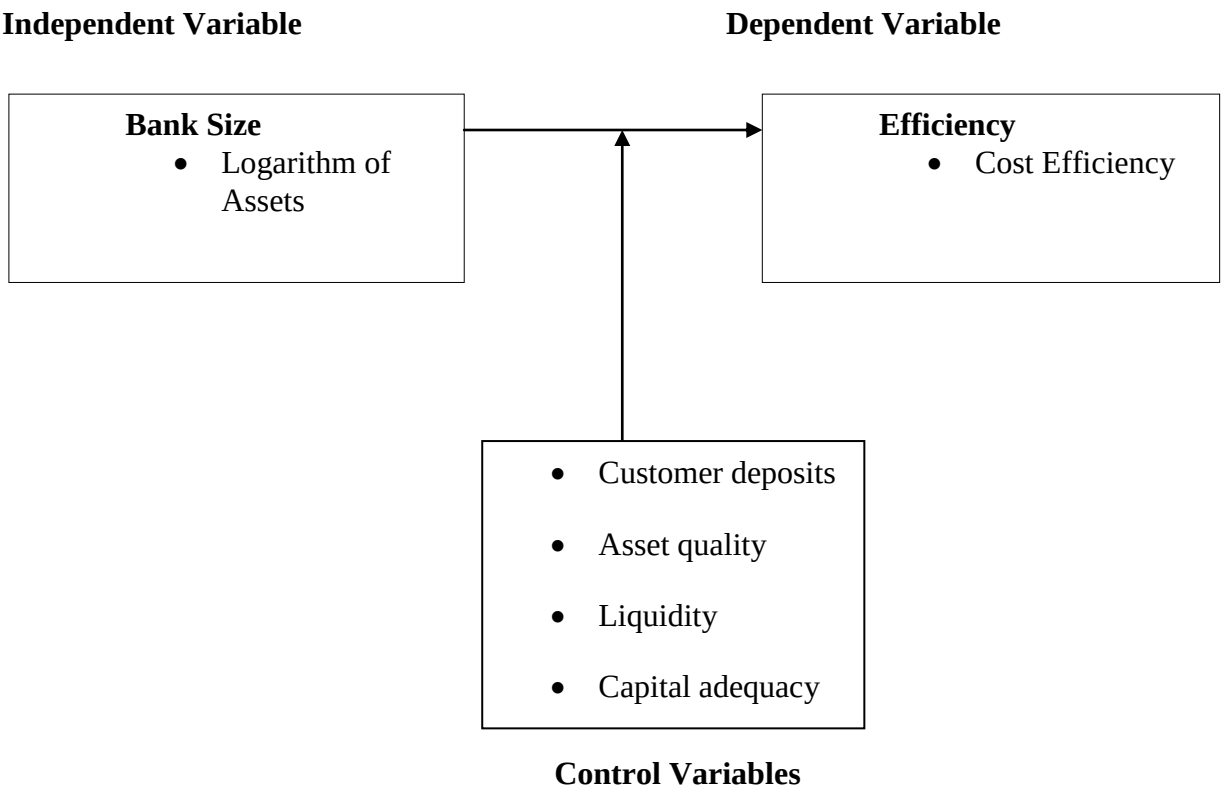
Mehrjardi (2014) tested the link between size and profitability of banks in Kenya. A descriptive research design was utilized to find out whether there were any relationships between variables. The study population involved all the 43 commercial banks where a sample of 20 banks was used. The study used secondary sources of data for a five-year period which was obtained from Central bank reports. A positive relationship existed between profitability, deposit liabilities, customer base, number of branches and market share.

Muhammad (2015) studied the effect of bank size and money wise performance of commercial banks in Dar es Salaam. The research covered a period of five years and secondary sources of data were obtained from annual reports. No relationship was found to exist between bank size and financial performance.

Gatete (2015) studied the effect of bank size on well doing of commercial banks in Kenya. A cross-sectional research design was utilized. The research population constituted 43 commercial banks. Secondary sources of data were gathered from CBK reports. Data analysis was done with the help of a regression model. Capital adequacy, efficiency and solvency variables were found to be statistically significant.

2.5 Conceptual Framework

Figure 2.1 depicts the nexus between bank size and efficiency of Microfinance banks. The control variables include: customer deposits, asset quality, liquidity and capital adequacy. A positive relationship is expected between bank size and efficiency of Microfinance banks in Kenya.



2.6 Summary of the Literature Review

It was observed that larger banks are slightly efficient than small ones especially when efficiency is looked at in view of cost. Nonetheless, when it comes to profit, smaller banks are efficient. This outcome showed that an increase in the size of a bank enables them to take care of their expenses but it difficult for the banks to gain efficiency in generating income and generating profits. Studies have drawn mixed reactions on the link between bank size and efficiency, Altunbas and Seth (2000) observed that big banks to be efficient while smaller banks were less efficient. Srivastava (1999) findings indicted that higher average efficiency was recorded by medium-sized banks; large banks came second while smaller banks were found to be less efficient therefore providing evidence that the relationship between size and efficiency is not positively monotonic.

Contradicting this, Allen and Rai (1996) findings indicated that largest banks portrayed higher levels of inefficiency for most cases of the 15 countries studied. In the local setting, studies such as Babalola (2014), Salim (2014), Mehrjardi (2014), Muhammad (2015) and Gatete (2015) have are limited the link between financial performance and size of the bank. Limited focus has been accorded on the effect of bank size on efficiency in the banking industry particularly Microfinance banks.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In the chapter, a research methodology was utilized to effectively tackle the research problem and compare findings to achieve accurate results.

3.2 Research design

Sekaran (2008) defines a research design as a guiding framework that defines how the study will address the research problem. This study adopted a descriptive research design. Frankfort-Nachmias (2008) contends that a descriptive research design appropriate for establishing hypothetical relationships between variables. This design was chosen because it assisted in establish the relationship that existed between bank size and efficiency of Microfinance banks. Microfinance banks were chosen because of their rapid growth and use of modern technologies.

3.3 Study Population

Kothari (2006) defines a population is a set of units of objects in a given population that possess similar traits. The population for the study included 13 Microfinance banks that were licensed to work and operate in Kenya (as represented in Appendix I).

3.4 Sample Size

The sample size for the study included Microfinance banks that were operational in the study period that was between 2011-2015. Kothari (2006) posits that a sample is a subset which comprises the traits of a large population. Samples were employed for statistical testing when population sizes are big for the test to accommodate all possible outcomes.

3.5 Data Collection

Sekaran (2008) note that the process of data collection involves putting together and measuring information based on all variables of interest in an established systematic manner which allows the study to adequately answer the research query, test hypothesis and conduct an evaluation of the outcome. The reseacher collected secondary data from annual reports of Central Bank of Kenya. The study covered a period of five years (2011-2015) that was considered sufficient for establishing the relationship between the study variables. To enhance accuracy and accessibility of data, the study reviewed all the Microfinance banks that were active for the five years.

3.6 Data Analysis

According to Kothari (2006) indicate that data analysis is the process of evaluating data with the help of analytical and logical reasoning to assess data from each study variables. Collected data will be cleaned, sorted and coded using Statistical Package for Social Sciences (SPSS, version 23). Inferential statistics was used for data analysis. Frankfort-Nachmias (2008) posits that inferential statistics is a form of statistics that enables testing reliability of the study findings through use of inferences to make interpretation. Inferential statistics included Pearson's Correlation Coefficient and Regression Analysis. Mean and standard deviation were used to summarize data inform of reports for easy interpretation. Regression analysis was performed to establish the link between bank size and efficiency of Microfinance banks in Kenya.

3.6.1 Analytical Model

Regression model that was adopted for this study comprised of five independent variables (bank size, customer deposits, asset quality, liquidity and capital adequacy) which affected the bank's efficiency. The dependent variable was efficiency which was measured using operating expenses divided by total income. The regression model was as follows:

$$Y=\alpha+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+ \beta_5X_5+ \varepsilon$$

Where:

Y= efficiency which was measured using costs efficiency which will be computed by dividing total operating expenses divided by total income.

X_1= Bank size which was measured using the logarithm of total assets

Control Variables

X_2= Customer deposits which was measured by the percentage increase in customer deposits.

X_3= Asset quality that was measured by dividing the total number of non-performing loans divided by total gross loans and advances.

X_4= Liquidity which was measured by dividing current assets and current liabilities.

X_5 = Capital adequacy which was measured using the ratio of capital to total weighted Assets

α = Regression constant

ε = Standard error term (distributed about the mean of zero).

$\beta_1\beta_{2\ldots}\ \beta_n$ = Model coefficients

3.6.2 Tests of Significance

This study tested the level of statistical significance of the findings at 95% to determine whether the model was a good predictor using the Analysis of Variance (ANOVA). The ANOVA was utelized to examine the significance of the study with the help of either z-test or t-test, if the results of the test were below 5 percent; this meant that the study (variables being tested) were statistically significant.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

In the chapter we have a data analysis that was taken with regard to the main aim of the research which is determining the effect of firm size on efficiency of Microfinance banks in Kenya. Inferential statistics that have been used are: Descriptive Statistics, Pearson Correlation Coefficient and Regression Analysis.

4.2 Response Rate

The researcher targeted to collect secondary sources of data from all Microfinance banks that were operational in the study period (2011-2015) however; all secondary sources of data were collected and the measurements computed for all the study variables. This kind of response was considered adequate for enhancing the accuracy of the findings.

4.3 Descriptive Statistics

Descriptive statistics was utilized to provide out inform of mean and standard deviation of the study variables as per the objective of the research which is to find out the effect of bank size on efficiency of Microfinance banks. The outcome are shown in Table 4.1

Table 4.1 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Operating Efficiency	45	.00	3.71	.9919	.69047
Bank Size	45	.00	4.50	2.6569	1.33083
Customer Deposits	45	.00	17806.00	2389.8444	4709.51554
Asset Quality	45	-.11	7.86	.6267	1.14499
Liquidity	45	.00	2.98	.4583	.55665
Capital Adequacy	45	.00	3.10	.4813	.53703
Valid N (listwise)	45				

Source: Research data (2016)

The outcome in Table 4.1 show that operating efficiency of Microfinance banks ranged between .00 to 3.71. This implied that operating efficiency increased with a margin of 3.71 and its average was .9919. Bank size increased to 4.50 (.00 to 4.50) with an average of 2.66, which was an indication that assets increased in the study period. Customer deposits increased rapidly from .00 to KES 17,806 (million) with a mean of KES. 2,389. Asset quality increased from -.11 to 7.86, with an average of .63. Liquidity increase from .00 to 2.98, with an average of .46 and Capital adequacy increased from .00 to 3.10, with an average of .48. It was concluded that the bank's operating efficiency, size, customer deposits, asset quality, liquidity and capital adequacy increased rapidly in the period of study. However, asset quality recorded the highest level of increase estimated at 72%. This increase was due to a rapid growth in the amount of non-performing loans.

4.4 Pearson Correlation Coefficient

To get the association between bank size and efficiency, the study carried out a correlation analysis. The outcome are presented in Table 4.2 as shown below

Table 4.2 Pearson Correlation Coefficient

	Operating efficiency	Bank Size	Customer Deposits	Asset quality	Liquidity	Capital Adequacy
Operating efficiency	1					
Bank size	.215	1				
Customer deposits	-.105	.607**	1			
Asset quality	-.008	.246	.059	1		
Liquidity	.348*	.075	-.149	.037	1	
Capital adequacy	.267	-.078	-.246	-.022	.452**	1

Source: Research data (2016)

The outcome in Table 4.2 portrays no correlation between bank size, customer deposits, asset quality and capital adequacy with efficiency of Microfinance banks. The correlation scores were as follows: .215, -.105 -.008 and .267. On the other-hand, the outcome showed a weak correlation between liquidity and efficiency of Microfinance banks. The correlation score is .348*. This was an indication that there was no correlation between bank size and efficiency of microfinance banks.

4.5 Regression Analysis

To find out the hypothesis of the study which predicted a strong linkage between bank size and efficiency of Microfinance banks, the researcher conducted a regression analysis. The results are tabled in Table 4.3

4.5.1 Model Summary

Model summary illustrated the percentage of variation of the dependent variable that was explained by the regression equation. The results are shown in Table 4.3.

Table 4.3 Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.477[a]	.228	.129	.64450

a. Predictors: (Constant), Capital Adequacy, Asset Quality, Customer Deposits, Liquidity, Bank Size

Source: Research data (2016)

The outcome in Table 4.3 showed that R^2, which in this case was the coefficient of determination, was a part of the variance in the dependent variable which was described by the independent variables in the regression equation. The findings showed a value of 0.228, which indicated that the independent variables explained 22.8% of the variability of efficiency of Microfinance banks.

4.5.2 Analysis of Variance

Analysis of variance was done to establish whether the regression model adopted for the study was statistically significant. The results are tabled in Table 4.4.

Table 4.4 Analysis of Variance

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.777	5	.955	2.300	.063[b]
	Residual	16.200	39	.415		
	Total	20.977	44			

a. Dependent Variable: Operating Efficiency

b. Predictors: (Constant), Capital Adequacy, Asset Quality, Customer Deposits, Liquidity, Bank Size

Source: Research data (2016)

The results found that F was statistically insignificant because its probability value was more than 5%, p=.063 that implied lack of there been a linear relationship between bank size and efficiency of Microfinance banks. This indicated that 95% chance of association between the study variables was not due to chance.

4.5.3 Model Coefficient

The result in Table 4.5 depicts the direction of the study variables on the left-hand side and the level of significance between the variables on the right-hand side. The outcome is shown in Table 4.5.

Table 4.5 Model Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.368	.248		1.484	.146
	Bank Size	.208	.097	.401	2.137	.039
	Customer Deposits	-4.080E-5	.000	-.278	-1.494	.143
	Asset Quality	-.058	.088	-.095	-.653	.518
	Liquidity	.275	.200	.222	1.380	.176
	Capital Adequacy	.164	.207	.128	.794	.432

a. Dependent Variable: Operating Efficiency

The regression equation obtained in this study was as follows:

$OE=.368+.208X_1-+.275X_2+.164\ X_3+\varepsilon$

Regression equation showed presence of a strong relationship between bank size, liquidity and capital adequacy with operating efficiency of Microfinance banks. This was an indication that when all factors were held constant a unit increase in these variables (bank size, liquidity and capital adequacy) resulted into a corresponding increase in operating efficiency of Microfinance banks. Customer deposits and asset

quality variables were excluded from the regression equation because they depicted a negative link with operating efficiency; this contracted the study hypothesis which had predicted a strong link between bank size and efficiency of Microfinance banks.

Bank size was statistically significance because its probability value in the regression equation was below 5%, p=.039. However, customer deposits, asset quality, liquidity and capital adequacy were statistically insignificant because their p-values were more than 5%, p=.143, p=.518, p=.176 and p=.432 respectively.

4.6 Chapter Summary and Interpretation of Findings

Descriptive results concluded that the bank's operating efficiency, size, customer deposits, asset quality, liquidity and capital adequacy increased tremendously in the study period. Asset quality has the highest increase estimated at 72%, which was attributed to the rapid increase in non-performing loans. These results are consistent to Mehrjardi (2014) whose descriptive results showed that bank size and customer deposits increased progressively in the study period.

Pearson correlation results found a weak correlation between liquidity and efficiency of Microfinance banks. The correlation score is .348*. Further, there was no correlation between, size, customer deposits, asset quality and capital adequacy with operating efficiency. The correlation scores were as follows: .215, -.105 -.008 and .267. These findings are consistent to Gatete (2015) who found no correlation between customer deposits, asset quality and capital adequacy with money wise performance of commercial banks.

Regression outcome found that bank size was statistically significance because its probability value in the regression equation was below 5%, p=.039. These results are consistent to Gatete (2014) who found that bank size was statistically significant in telling the effect of bank size on financial performance of commercial banks. However, customer deposits, asset quality, liquidity and capital adequacy were statistically insignificant because their p-values were more than 5%, p=.143, p=.518, p=.176 and p=.432 respectively. These findings are consistent to Salim (2014) who found no statistical significant relationship between customer deposits and asset quality.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

In the chapter it covers the summary of outcome and conclusion drawn in this research in line with the objective of the research. The chapter consists of the following sub-heading as follows: Summary of Findings, conclusion, Recommendations, Limitations for the Study and Suggestion for Further Study.

5.2 Summary of Findings

Descriptive results found that bank's operating efficiency, size, customer deposits, asset quality, liquidity and capital adequacy increased in the study period with asset quality having the highest increase that was estimated at 72%. This was an indication of a rapid increase in non-performing loans. The findings are consistent to Mehrjardi (2014) whose descriptive results showed that bank size and customer deposits increased progressively in the study period.

The correlation results found a weak correlation between liquidity and efficiency of Microfinance banks. The correlation attained a score of .348*. There was no correlation between size, customer deposits, asset quality and capital adequacy with efficiency. The correlation scores were as follows: .215, -.105 -.008 and .267. These results conform to the findings of Gatete (2015) concluded that there was no correlation between customer deposits, asset quality and capital adequacy and financial performance of commercial banks.

The coefficient of determination found that the independent variables explained 22.8% of the variability of efficiency of Microfinance banks. Analysis of variance found that the probability value was more than 5%, p=.063 which meant lack of there been a linear relationship between bank size and efficiency of Microfinance banks which meant that 95% chance of association between the study variables was not due to chance. These findings were consistent to Babalola (2014) who found lack of existence of a linear link between bank size and financial performance of commercial banks.

It existed a direct link between bank size, liquidity and capital adequacy with efficiency of Microfinance banks. These results are consistent to Mehrjardi (2014) whose study saw the existence of a strong relationship between bank size, liquidity and financial performance. Bank size was significance since its p-value value was below 5%, p=.039. These results are supported by Gatete (2014) who found that bank size was statistically significant while liquidity and capital adequacy were statistically insignificant.

5.3 Conclusion

Bank's operating efficiency, size, customer deposits, asset quality, liquidity and capital adequacy increased in the study period with asset quality having the highest increase attributed to an increase in non-performing loans. Correlation results found no correlation between size, customer deposits, asset quality and capital adequacy with efficiency. There was a weak correlation between between liquidity and efficiency of Microfinance banks.

The study further concluded existence a direct relationship between bank size, liquidity plus capital adequacy with efficiency of Microfinance banks. Analysis of

variance found no linear link between bank size and efficiency of Microfinance banks. Bank size was statistically significant while customer deposits, asset quality and liquidity were found to be statistically insignificant.

5.4 Recommendations

The study recommends that Microfinance banks should invest in modern technologies to effectively integrate all the banks functions and activities to boost efficiency of banking operations. This will minimize supervision and communication costs and impact positive on bank performance.

Microfinance banks should consider building their capacity to enhance accessibility to customer services and use of banking products and services. Customers will enjoy flexible and convenient services that allow banks to improve efficiency in their services and contribute to improved performance.

Microfinance banks should effectively implement their credit policies and standards to regulate the amount of loans given to customers. Loans and other credit facilities should be given to customers who meet all the credit requirements to minimize the risk of default that might expose Microfinance banks to financial losses.

Microfinance banks should engage their employees constantly in regular training and development programmes to increase their know how and skills in their duties and responsibilities. It will also allow the employees to increase their efficiency and competence in their duties and thus improve on their performance.

Finally, CBK should formulate policies that encourage Microfinance banks to invest more in research and development and innovation. This will enable Microfinance banks to design and develop competitive products or services that add value to the customers.

5.5 Limitations for the Study

Time and cost constraints necessitated a study of Microfinance banks only. The results obtained in this study are distinctive and cannot therefore be utilized for either direct application in another sector or to make generalization of the banking sector in Kenya.

The research was limited to secondary data only. Secondary sources of data are historical and thus not accurate and reliable to reflect the present needs of the study. Secondary data lacks first-hand information which is key in addressing the contemporary issues of a research.

The research was limited to a time frame of five years between (2011-2015); this period is not enough to establish the 'cause and effect' between bank size and efficiency of Microfinance banks. Use of 'cause and effect' relationship between variables enables the researcher to ascertain the exact relationship between variables that is consistent.

The study limited itself to five variables (bank size, customer deposits, asset quality, liquidity and capital adequacy) that were deemed to affect efficiency of Microfinance banks in Kenya. It is imperative to note that there are other factors that affect efficiency of banks apart from these ones discussed in this study.

5.5 Suggestion for Further Studies

Future researchers can consider investigating this study in other sectors such as listed firms and manufacturing firms which are similar in terms of size and areas of intervention. This will allows the researchers to increase the wide scope of their study whereby findings can be compared and a more reliable conclusion can be drawn.

Due to macroeconomic factors such as technological changes, regulations and legal framework among others, the study advises that a similar study should be conducted after a period of like fifteen years to find out whether this relationship will still hold.

A similar study should be conducted using a longitudinal research design to establish the ‘cause and effect’ between bank size and efficiency. This will enable researchers to obtain accurate more findings that will lead to a more reliable conclusion.

RFERENCES

Abel, E. E. (2008). Firm size and corporate financial-leverage choice in a developing economy: Evidence from Nigeria, *The Journal of Risk Finance*, 9, I, 4,351 – 364

Abreu, M. & Mendes, V. (2003). Commercial Bank interest margins and profitability: evidence for some E.U countries; victor Mendes and European integration and banking efficiency,*http://pascal.iseg.utl.pt/~cief/uk/conf/session2_CIEF2.pdf pp. 1-19*

Allen, L. & Rai, A. (2009).Operational efficiency in banking: An international comparison, *Journal of Banking and Finance* 20: 655-672.

Altunbas, Y., & Seth, R.R. (2000). Efficiency and risk in Japanese banking, *Journal of Banking and Finance* 24: 1605-1628.

AMFI (2015). Association of Microfinance institutions in Kenya *http://amfikenya.com/,1458641065626-f130b807-9c2a*

Ammar, A., & Russell, J.S. (2003). Indicator variables model of firm's size-profitability relationship of electrical contractors using financial and economic data, *Journal of Construction Engineering and Management*, 129(2), 192-197

Archarungroj, P. & Hoshino, Y. (2012). The impact of firm size on export performance and attitudes: an empirical study on Thailand exporters, *Japanese Journal of Administrative Science*, 12(2), 79 - 88.

Babalola, Y.A. (2014). The relationship between bank size and financial performance, *Journal of Money Investment and Banking*, 24, 1, 1-5

Babalola, Y.A. (2014). The relationship between bank size and financial performance, *Journal of Money Investment and Banking*, 24, 1, 1-5

Batiz-Lazo, B., & Barrie, A. (2005). The business and technological history of automated teller machines in the UK, 1967-2005, a *Primer. Conference Abstracts, 16-17th June. Queen Mary, University of London*, 567-570.

Berger, A.N. & R. De Young, (2010). Problem loans and cost efficiency in commercial banks. *Journal of Banking and Finance*, 21: 849-870.

Boerner, C. S. & Macher, J. T. (2002). Transaction cost economics: An assessment of empirical research in the social sciences. Working paper, *Haas School of Business*, University of California, Berkeley.

Brouthers, K. D., & Brouthers, L. E. (2004). Transaction costs, risk behaviour, and international entry mode choice. Working paper, Temple University Fox School of Business, Philadelphia

Chakraborty, T. (2008). Working Capital and profitability: an empirical analysis of their relationship with reference of banks, *Journal of Management Research*, 3(4),1-2

Coase, R. H. (1937). *The nature of the firm, Economica*, N.S., 4: 386 – 405.

Deis, D., & Guffey, W. (2005). Further Evidence on the Relationship between Bankruptcy Costs and Firm Size, *Quarterly Journal of Business & Economics*, 69-79.

Donaldson, T. J., & L. E. Preston. (1995). The Stakeholder Theory and the Corporation: Concepts, Evidence, and Implications, *Academy of Management Review*, 20 (1995).

Drake, L. & Hall, M.J.B (2013). Efficiency in Japanese banking: An empirical analysis, *Journal of Banking and Finance*, 27: 891–917.

Duckworth, H. A. & Moore, R. A. (2010). *Social responsibility: failure mode effects and analysis*, 10. ISBN, 1439803749.

Dutta, S., & John, G. (1995). Combining lab experiments and industry data in transaction cost analysis: The case of competition as a safeguard, *Journal of Law, Economics, and Organization*, 11: 87–111.

Dyer, J. H., & Chu, W. (2003). The role of trustworthiness in reducing transaction costs and improving performance: Empirical evidence from the United States, *Japan, and Korea, Organization Science*, 14: 57– 68.

Eljelly, A. (2004). Liquidity-Profitability Trade-off, an empirical investigation in an emerging market, *International Journal of Commerce & Management*, 14(2), 48-61

Emery, T. (1991). The link between bank growth and profitability of Pakistanian banks, *Journal of finance risk,* 1(5), 19-21

Feng, G. & A. Serlitis, (2010). Efficiency, technical change and returns to scale in large U.S. Banks: Panel data evidence from an output distance function satisfying theoretical regularity'. *Journal of Banking and Finance*, 34: 127-138.

Frankfort-Nachmias, C., & Nachmias, D. (2008). *Research methods in the social sciences*, London. u.a., Arnold.

Friedman, A. L., & Miles, S. (2002). Developing stakeholder theory, Journal of *Management Studies*, 39 (1), 1–21.

Fukuyama, W., (2007). Technical and scale efficiency of Japanese commercial banks: A non-parametric approach, *Applied Economics,* 25, 1101-1112.

Gatete A. (2015). Effect of bank size on profitability of commercial banks in Kenya, *Unpublished MBA Project*, University of Nairobi

Goldberg, L.G. & Rai, A. A. (1996). The structure-performance relationship for European banking, *Journal of Banking and Finance* 20 745-771

Hasan, I., & Marton, K. (2009). Development and efficiency of the banking sector in a transitional economy: Hungarian experience, *Journal of Banking and Finance* 27: 2249-2271.

Isik, I. & M.K. Hassan, (2002). Technical, scale and allocative efficiencies of Turkish banking industry, *Journal of Banking and Finance*, 26: 719-766.

Jensen, M. & Meckling, W. (1976). Theory of the firm, managerial behaviour, agency costs and ownership structure, *Journal of Financial Economics*, 3, 305–360.

Jensen, M. (1976), Agency costs of free cash flow, corporate finance and takeovers, *American Economic Review*, 76(2), 323-329

Kariuki, A. (2012). The relationship between bank size, growth and profitability of listed firms in NSE, *Unpublished MBA Project*, Kenyatta University

Karray, S.C. & Chichti, J.E. (2013). Bank size and efficiency in developing countries: intermediation approach versus value added approach and impact of Non-Traditional Activities, *Asian Economic and Financial Review*, 3, 5,519-613

Kimani, A. (2014). The relationship between firm size and profitability of manufacturing firms in Kenya, *Unpublished MBA Project*, Kenyatta University

Kithuka, M. (2013). The link between organisational size and asset growth of firms listed at the Nairobi Securities Exchange, *Unpublished MBA Project*, University of Nairobi

Kothari, C. R. (2006). *Research methodology: techniques and methods.* New Delhi: New Age International (P) Ltd.

Laffont, J., & David, M. (2008). *The theory of incentives, the principal Agent Model* Princeton, Princeton University Press

Lamont, O.A. & Polk, C. (2002). Does diversification destroy value, evidence from the industry shocks, *Journal of Financial Economics* 63, 51-77

Lang, G. & P. Welzel, (1996). Efficiency and technical progress in banking: Empirical results for a panel of German cooperative banks, *Journal of Banking and Finance*, 20: 1003-1023.

Maksimovic, V. & Phillips, G. (2002). Do conglomerate firms allocate resources inefficiently across Indus- tries, *Theory and Evidence*, *the Journal of Finance*, 57, 721-767.

McIntosh, C., A. De Janvry, T., & Sadoulet, E. (2005). Rising competition among microfinance institutions affects incumbent lenders, *Economic Journal*, 115: 987-1004

Mehrjardi, M.S. (2014). Size and profitability of banks in Kenya, *Unpublished MBA Project*, University of Nairobi

Mendes, V. & Rebelo, J. (1999). Productive efficiency, technological change and productivity in Portuguese banking, applied financial economics. 1999, (9), 513-521, *Retrieved on 19th of March, 2016. Http. Web.ebscohost.com*

Mitchell, K. & Onvural, N.M. (2014). Economies of scale and scope at large commercial banks: Evidence from the Fourier flexible form, *Journal of Money, Credit and Banking*, 28: 178-199.

Muhammad, A.M. (2015). The effect of bank size and financial performance of commercial banks in Dar es Salaam, *published thesis*, University of Dar es Salaam

Mwangi, A. (2014). Factors affecting growth of commercial banks in Kenya, *Unpublished MBA Projects*, Kenyatta University

Olatokun, W. M. & Igbinedion, L. J. (2009). *The Adoption of Automatic Teller Machines JIBC*, 2013, 18, 3 – 21

Pandey, M. (2005). Capital structure, profitability and market structure: evidence from Malaysia, *Asia Pacific Journal of Economics and Business*, 8, 2

Rasiah, D. (2010). Theoretical Framework of Profitability as Applied to Commercial Banks in Malaysia written by *published in European Journal of Economics, http://www.eurojournals.com*

Saliha, T. & Abdessatar, A. (2011). The Determinants of financial performance: an empirical test using the simultaneous equations method, *Economics and Finance Review* 10(1), 0-19.

Salim, S. B. (2012). The relationship between size and financial performance of commercial banks in Kenya, *Unpublished MBA Project*, University of Nairobi

Scholterns, Bert. (2000). Competition, growth, and performance in the banking industry, applied financial economics, *Feb, 254-275. Retrieved September, 2016. http://web.ebscohost.com/ehost/pdf viewer.*

Sekaran, U. (2008). *Research methods for business: a skill building approach. (4thEd.).* London: John Wiley & Sons.

Singh, J. P. (2008). Impact of working capital management and profitability of banks, *Journal of Financial Economics*, 3(6), 1-2

Srivastava, P., (1999). Size, *efficiency and financial reforms in Indian banking.*

Tanna, S., Pasiouras, F. & Nnadi, M. (2011). The effect of board size and composition on the efficiency of UK banks, *International Journal of the Economics of Business,* volume 18, 3, 441-462

Vong, P.I. & Chan, H.S. (2009). Determinants of Bank Profitability in Macao, published by Macao monetary research bulletin available at:*http://www.amcm.gov.mo/publication/quarterly/July2009/macaoprof_en.pdf*

Willison, J., Dimitris, K. & Hong, L. (2013). The dynamics of US bank profitability, *the responsible of banking and finance*, University of St Andrews retrieved on September, 2016

APPENDICES

APPENDIX I: LETTER OF INTRODUCTION

UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS

Telephone: 020-2059162
Telegrams: "Varsity", Nairobi
Telex: 22095 Varsity

P.O. Box 30197
Nairobi, Kenya

DATE 01/10/2016

TO WHOM IT MAY CONCERN

The bearer of this letter Monicah Wambui Nganga

Registration No. D61/77336/2015

is a bona fide continuing student in the Master of Business Administration (MBA) degree program in this University.

He/she is required to submit as part of his/her coursework assessment a research project report on a management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would, therefore, appreciate your assistance to enable him/her collect data in your organization.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organizations on request.

Thank you.

UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS
04 OCT 2016
P.O. Box 30197 – 00100, NAIROBI

PATRICK NYABUTO
SENIOR ADMINISTRATIVE ASSISTANT
SCHOOL OF BUSINESS

APPENDIX II: COMPUTED MEASUREMENTS OF THE STUDY VARIABLES

	Year	Capital Adequacy	Liquidity	Asset Quality	Operating Efficiency	Ln of Assets	Customer Deposits shs. M
FAULU	**2015**	0.23	0.28	0.926505	0.829282	4.503259	17806
KWFT		0.21	0.31	0.821895	0.897359	4.403532	16690
SMEP		0.21	0.53	0.978599	0.884173	3.888123	4191
REMU		0.30	0.24	0.911042	0.94822	3.413635	1287
RAFIKI		0.59	0.4	0.8082191	1.276316	2.598791	158
UWEZO		0.36	0.4	0.7674419	0.748148	2.783904	135
CENTURY		0.276	0.334	0.7291667	2.348837	2.294466	105
SUMAC		1.25	2.17	1	0.96	2.354108	42
U&I		0.79	0.28	0.8181818	0.714286	2.264818	59
FAULU	**2014**	0.25	0.24	0.63	0.823	4.431122	17119
KWFT		0.23	0.24	0.567657	0.807	4.307924	12646
SMEP		0.24	0.35	0.752443	0.885	3.776338	2873
REMU		0.31	0.29	-0.10757	1.1147	3.376212	1325
RAFIKI		0.79	0.81	0.608696	0.942	2.596597	166
UWEZO		0.51	0.27	0.630435	0.888	2.591065	128
CENTURY		0.384	0.261	0.15	2.219	2.363612	127
SUMAC		0.53	0.15	0.65625	0.9459	2.20412	64
U&I		1.45	0.57	0.285714	0.852	2.136721	36
FAULU	**2013**	0.10	0.23	0.41	0.8074	4.094610863	7198
KWFT		0.198	0.27	0.5427	0.774	4.337499195	5456
SMEP		0.41	0.26	0.219178	0.851	3.396199347	1253
REMU		0.60	0.67	0.727273	1.174	2.527629901	174
RAFIKI		0.27	0.42	7.860963	0.8252	3.565729788	1412

UWEZO		0.66	0.25	0.636364	1.125	2.029383778	24
CENTURY		0.60	0.244	0.1666667	3.714	2.214843848	55
SUMAC		0.62	0.21	0.285714	1.0125	2.487138375	99
U&I		3.10	0.634	0.333333	0.875	1.903089987	34
FAULU	**2012**	0.17	0.24	0.33	0.7855	3.88298	2,949
KWFT		0.17	0.40	0.33	0.747	4.309289	2,493
SMEP		0.56	0.28	0.56	0.7195	3.359835	1,014
REMU		0.81	0.80	0.53	1.4615	2.257679	61
RAFIKI		0.15	1.17	0.58	0.9646	3.264346	468
UWEZO		0.88	0.52	0.71	1.08333	1.892095	18
CENTURY		-	-	-	-	-	-
SUMAC		-	-	-	-	-	-
U&I		-	-	-	-	-	-
FAULU	**2011**	0.27	0.21	0.46	0.8295	3.711048	1955
KWFT		0.17	0.39	0.574194	0.9376	4.231368	7011
SMEP		0.3	0.24	0.34507	0.7769	3.300595	792
REMU		1.41	2.98	0.333333	1.9286	2.093422	14
RAFIKI		0.36	1.60	0	2.05	2.644439	98
UWEZO		0.94	0.48	0.333333	2.111	1.770852	8
CENTURY		-	-	-	-	-	-
SUMAC		-	-	-	-	-	-
U&I		-	-	-	-	-	-

Source: CBK, (2016)

APPENDIX III: LIST OF MICROFINANCE BANKS IN KENYA

1. Choice Microfinance Bank Limited
2. Faulu Microfinance Bank Ltd
3. Kenya Women Microfinance Bank Ltd
4. SMEP Microfinance Bank Ltd
5. Remu Microfinance Bank Ltd
6. Rafiki Microfinance Bank Ltd
7. Uwezo Microfinance Bank Ltd
8. Century Microfinance Bank Ltd
9. Sumac Microfinance Bank Ltd
10. U&I Microfinance Bank Ltd
11. Daraja Microfinance Bank Ltd
12. Caritas Microfinance Bank Ltd
13. Maisha Microfinance Bank Limited

Source: CBK, 2015