

**PRUDENTIAL REGULATIONS AND FINANCIAL PERFORMANCE OF
COMMERCIAL BANKS IN KENYA**

MUGO HANNAH WANGARI

D53/OL/CTY/32701/2016

**A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS FOR
PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD
MASTERS DEGREE OF BUSINESS ADMINISTRATION OF KENYATTA
UNIVERSITY**

NOVEMBER, 2020

DECLARATION

Declaration by the Student

I declare that this project is my original work and has not been submitted for an award of a degree in any other University for examination purposes.

Signature.....

Date.....

MUGO HANNAH WANGARI

D53/OL/CTY/32701/2016

Declaration by the Supervisor

Signature.....

Date.....

DR. SHIUNDU V. MUTSWENJE

Department of Accounting and Finance

School of Business, Kenyatta University

DEDICATION

This work is devoted to dad Daniel Mugo, my mother Jane Mugo alongside my brothers Boniface and John. Your love, encouragement and support have enabled me to complete this project.

ACKNOWLEDGEMENT

I'm thankful to God for giving me potency and fine health for purpose of conducting this research. Secondly, I appreciate my supervisor, Dr. Vincent Shiundu Mutswenje for his exemplary guidance, monitoring and constant encouragement all the way through the whole process. In addition, I'm appreciative to the lecturers at Kenyatta University, Department of Business Studies for the indelible mark they have imprinted in my academic life. I sincerely do not know what I would have done without you. Equally I am very much appreciative for my parents for granting me a chance and encouraging me to do the research.

TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS	v
LIST OF TABLES	ix
LIST OF FIGURES	x
ABBREVIATIONS AND ACRONYMS	xi
OPERATIONAL DEFINITION OF TERMS	xii
ABSTRACT	xiii
CHAPTER ONE:INTRODUCTION	1
1.1 Background of the Study.....	1
1.1.1 Prudential Regulations.....	3
1.1.2 Financial Performance.....	5
1.1.3 Bank size.....	7
1.1.4 Prudential regulations and bank performance.....	8
1.1.5 Commercial Banks in Kenya.....	8
1.2 Statement of the Problem.....	9
1.3 study objectives.....	10
1.3.1 Main Objective.....	10
1.3.2 Specific Objectives.....	10
1.4 Research Hypotheses.....	11
1.5 Significance of the Study.....	11
1.6 Scope of the Study.....	12
1.7 Limitations of the study.....	12
1.8 Organization of the study.....	13

CHAPTER TWO:LITERATUREREVIEW	14
2.1 Introduction	14
2.2 Theoretical Review	14
2.2.1 Stakeholder Theory.....	14
2.2.2 Liquidity Preference Theory	15
2.2.3 The theory of Market Power.....	16
2.3 Empirical Review	18
2.3.1 Capital Adequacy Regulations and Financial Performance of Commercial Banks	18
2.3.2 Liquidity Regulations and Financial Performance of Commercial Banks	19
2.2.3 Credit Risk Regulations and Financial Performance of Commercial Banks.....	21
2.3.4 Bank Size and Financial performance	22
2.3.5 Commercial Banks Financial Performance	23
2.4 Summary of the Reviewed Literature and Gaps	24
2.5 Conceptual Framework.....	27
CHAPTER THREE:RESEARCH METHODOLOGY	28
3.1 Introduction	28
3.2 Research Design	28
3.3 Target Population	28
3.4 Sampling Design	28
3.5 Empirical Model	29
3.6 Operationalization and measurement of variables.....	30
3.7 Data Collection Instrument.....	31
3.8 Data Analysis and Presentation	31
3.9 Diagnostic test	31
3.9.1 Test for normality	32
3.9.2 Multicollinearity Test	32

3.9.3 Heteroskedasticity Test.....	32
3.9.4 Autocorrelation.....	33
3.9.5 Stationarity test.....	33
3.9.6 Model specification	34
3.10 Ethical Considerations.....	34
CHAPTER FOUR:RESEARCH FINDINGS AND DISCUSSIONS	35
4.1 Introduction	35
4.2 Descriptive Statistics	35
4.3 Diagnostic tests.....	36
4.3.1 Normality test.....	37
4.3.2 Multicollinearity test.....	37
4.3.3 Heteroscedasticity test.....	38
4.3.4 Autocorrelation test	39
4.3.5 Stationarity test.....	40
4.3.6 Model specification	42
4.4 Regression analysis.....	43
4.4.1 Panel regression without a moderator	43
4.4.2 Panel regression with a moderator.....	46
4.4.3 Panel regression under interactions	47
CHAPTER FIVE:SUMMARY, CONCLUSION AND RECOMMENDATIONS	50
5.1 Introduction	50
5.2 Summary.....	50
5.3 Conclusion.....	51
5.4 Recommendations	52
5.5 Suggestion for further studies.....	52
REFERENCES.....	54

APPENDICES	58
Appendix I Secondary Data Collection Tool.....	58
Appendix II List of Commercial Banks In Kenya.....	59
Appendix II Research Authorization Documents.....	61

LIST OF TABLES

Table 1.1 Banking sector profitability 2013-2017	6
Table 2.1: summary	25
Table 3.1: Variable measurements and operationalization	30
Table 4.1 Descriptive statistics	35
Table 4.2 Normality test results	37
Table 4.3 Multicollinearity test results	38
Table 4.4 Heteroscedasticity test results	38
Table 4.5 Durbin Watson test	40
Table 4.6 Augmented Dickey-Fuller test.....	41
Table 4.7 Hausman Test	42
Table 4.8 Panel regression without a moderator.....	43
Table 4.9 Panel regression with a moderator.....	46
Table 4.10 Panel regression under interactions with moderator.....	47
Table 4.11 Summary of hypothesis testing.....	49

LIST OF FIGURES

Fig 2.1: The Conceptual Framework	27
Figure 4.1 Residuals.....	39
Figure 4.2 Unit root curve.....	41

ABBREVIATIONS AND ACRONYMS

CAR	Capital Adequacy Ratio
GDP	Gross Domestic Product
KCB	Kenya Commercial Bank
KNBS	Kenya National Bureau of Statistics
NPL	Non-Performing Loans
ROE	Return on Equity

OPERATIONAL DEFINITION OF TERMS

Capital Adequacy	It entails the amount of capitalization necessary to be held by commercial banks as stipulated or advocated by the monetary authority.
Credit Risk	This refers to the uncertainty regarding repayments of loans. Credit risk is measured using nonperforming loans to entire loans ratio.
Financial performance	It is the measure of banks' capability to function profitably while sustaining competitive advantage in the business environment.
Liquidity	This is the ability of banking institutions to clear up obligations as they become due in the short run.
Prudential regulations	These are set of guidelines set and implemented by the Central Banks which guide the operations of banks.
Return on Equity	It explains the income raised from the funds invested by shareholders.
Size of Bank	Regarded as the entire assets of commercial banks which was evaluated using natural log

ABSTRACT

Banks are the primary intermediaries for the reason that in various countries of the world, they carry out financial intermediation. Through the years, different countries have gone through an unprecedented number of failures in the commercial banks internationally. These failures have prompted the need for a more serious focus on suitable methods of improving the financial performance of national financial systems. Further than the intermediation task, the banks' financial performance of banks carries a huge implication to expansion of an economy. The fall down in banks' financial performance has been worrying. The study examined the consequence of prudential regulations on financial performance of Kenyan banks. The explicit goal was to examine the effect of capital adequacy, liquidity and credit risk regulation on financial performance of Kenyan banks. Finally, the study examined the moderating effect bank size on the interlink between prudential regulations and financial performance of banks. Stakeholder Theory, Liquidity Preference and Market Power theory was of guidance. Causal design of research was utilized in the study. The population target was 42 banks operational from 2013 up to 2018. Census was the approach of gathering data. The data to be collected was secondary in nature. The analysis involved the application of both descriptive and panel regression analysis. In analyzing, STATA software was used. The findings revealed regulation of capital adequacy had a statistically significant influence on the financial performance of banks at p value ($p=0.000<0.05$). The analysis further revealed that regulation of liquidity had a statistically significant influence on financial performance of the commercial banks ($p=0.035<0.05$). On average non-performing loans stood at Ksh. 2496.78 million over the five-year period. Results further show that credit risk was a significant determiner of financial performance of commercial banks in Kenya ($p=0.014<0.05$). When it comes to bank size, the findings showed that the Kenyan banks averaged at 4.29 Billion. As a moderator, it was found that bank size did not significantly influence the relationship between prudential regulations and financial performance ($p=0.289>0.05$) and its interaction with capital adequacy, liquidity and credit risk did not have any significant effect on ROE. The study recommends that Central Bank of Kenya should tighten regulation on capital adequacy, to create more balance in the core capital and total assets of banks. This would bridge the huge gap identified between banks with high capital and total assets and those with minimum core capital and total assets. The Central Bank of Kenya should also put more effort to regulate the liquidity of the industry to ensure that the huge gap in liquidity is minimized to promote equal growth in the industry. Tight regulations on credit risks should be put into effect to ensure that banks bear less risks.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Abera (2012) suggests that profit-making banks are the principal intermediaries for the reason that in various countries of the world, they carry out financial intermediation. Through the years, different countries have gone through an unprecedented number of failures in the commercial banks internationally. These failures have prompted the need for a more serious focus on suitable methods of improving the outcomes of national system of finance (Dang, 2011). Without a doubt, an extensive literature is by now up-and-coming on the grounds and end result of banking crises alongside diverse improvements that can aid in curbing potential crises. While the wished-for reforms vary in significant respects, practically almost all these reforms embrace improvements in the already in place regulations and managerial principles. This foundation of conformity is without doubt explicable in the fiscal crises in nations have been traced to poor guidelines and administration (Ongore & Kusa, 2013)

Basel Committee is a global body responsible in setting standards for the prudential regulations for the banking institutions. It ensures effective and efficiency in both regulation and supervision practices for worldwide banks to accomplish its foremost purpose which is to enhance financial stability in banks. According to Muiruri (2015), the fact that Kenya isn't an associate of Basel Committee does not necessarily mean Kenya does not require its regulation and supervision. Central Bank of Kenya picks some Basel committee standard and implements them. Central bank of Kenya ensures all licensed financial institution comply with rule and regulations

governing them which are based on the international standards of Basel Committee (Richard, Devinney, Yip, & Johnson, 2009).

Good performance of banks in terms of finance, according to Ongore and Kusa (2013), leads to a stable and gainful banking sector in addition to having a stable financial system which stands the best chance of bearing unfavorable shocks. Reduced performance result in bank runs, crises and major financial crisis (Molefe & Muzindutsi, 2015). The essence of bank regulations is to therefore ensure a profitable and sound banking sector. Regulations are set of commands which every individual or an organization has to adhere with, failure to that, negative consequence will follow while guidelines are practices which have been proposed as the best in yielding high returns leading to improvement in future firm's performance (Sangmi & Nazir, 2010). The regulation of banks is new concept in the context of financial institution (Dang, 2011). Bank rules area form of government commands that subjects banking sectors into requirements, restrictions and guidelines as formulated by their Regulators such as Central Bank in order to ensure market transparency between banking industry and individuals or among banking institution or other corporation that do business with them. Banks' regulators keep on revising Banks' regulations and guidelines for it to respond effective to the adverse dynamics in business environment, which if not properly dealt with, it may lead to financial problems (Ibe, 2013).

The banks' performance is influence by the size of assets which range from little banks, average banks and large banks. The at hand study will look into the extent and nature of the consequence of prudential regulations on performance. It also scrutinizes the size of bank as a moderator in the linkage of the prudential system and performance of banks in Kenya.

1.1.1 Prudential Regulations

Prudential regulations are a type of government commands that place banking sectors into some requirements, precincts and guidelines as formulated by their Regulators such as Central Bank in order to ensure market transparency between banking industry and individuals or among banking institution or other corporation that they do business with (Abera, 2012). These regulations include adequacy of capital, liquidity, credit risk and investment regulations. The at hand study shall be anchored on adequacy of capital, liquidity and credit risk as they are the most key components of prudential regulations. While there are many prudential regulations adopted by several central banks to regulate their banking industry, researchers have often dwelt on capital adequacy, credit risk and liquidity management. For instance, the Central Bank of Kenya (CBK) has listed a total of 22 prudential regulations (CBK, 2019). The current study focused on capital adequacy, credit risk and liquidity due to the strong evidence available in literature showing that commercial banks that have not paid much attention to these have either performed poorly or ended up in mergers and acquisition.

Capital adequacy explains the amount that a commercial bank need as capital for it to be in a position tom grapple with risks which mainly include; operational, marketing and credit risks. The essence of this is for them to be able to deal with the possible losses and shield the company's debtors. Capital the most vital variables within a bank that have a direct influence on the profitability levels. It entails amount of finances owned by a bank for the business to be effectively sustained. The capital of a bank cushions it whenever unfavorable situations happen. Moreover, capital ensures liquidity of a bank for the reason that deposits are most brittle and susceptible to bank runs (Abera, 2012). Excellent capital amount lessens the room for failures in

a banking body. World Bank (2017) indicated the capital adequacy of banks in Kenya to 21%, 20% and 19% in the years 2013, 2014 and 2015 respectively. Furthermore, the years 2016 and 2017 had capital adequacy levels of 19.8% and 18.8% respectively. The study will make use of the ratio of customer deposits to entire assets ratio as a gauge of adequacy of capital.

Liquidity explains capability of a bank to settle its commitments, above all that of depositors. The substantial liquidity levels are straightforwardly proportional to the profitability of a bank. To gauge liquidity, the executives should make use of the fraction of assets that are liquid which include; cash and outstanding cash from banks, securities accessible for-trade, and securities of government to the entire assets (Ongore & Kusa, 2013). Profit-making banks having a diminished amount of -assets that are liquid have the prospect of not being able to finance their daily business activities. The measure of liquidity is determined by the use of the universal financial ratios that depicts the situation of liquidity in a bank. These ratios comprise ratio of client deposit to entire asset alongside entire loan-to-client deposits and cash-to-deposit ratio (Nyanga, 2012). IMF (2017) reported that liquidity for Kenya banks to be 17.88% in the year 2013, 16.97% in 2014 which indicates a decrease in the liquidity levels of banks. However, the subsequent years 2015 and 2016, the liquidity of Kenyan banks was reported at 18.32% and 18.15% respectively. In the case of this study, liquid assets to entire assets was a stand-in for liquidity.

Credit risk explains an assessment of the possibility of loan default coupled with an assessment of its marketability (Molefe & Muzindutsi, 2015). Therefore, the quality of asset evaluates the prices through which bank can trade a loan to a different party as the borrower determines. Assets of a bank comprise long term and short-term assets, credit assortment alongside additional

investments. The biggest component of bank assets is loans and makes up the utmost degree of threat to their capital (Nyanga, 2012). Real estates, off-balance sheet components, outstanding cash from accounts and premises represent other components having a likely influence on the worth of asset. Quality of asset is determined by CBK using the ratio of net loans that aren't performing and gross loans and this was used in this study. World Bank (2017) reported an increasing level of NPLs among Kenya commercial banks. The NPL level for Kenyan banks was 4.43 of 2011 which increased to 4.59% in 2012. The trend in non-performing loans continued to increase from 2012 to 2015, where it was reported at 11.66% in 2016.

1.1.2 Financial Performance

Performance of banks refers to profitability of banks and how efficient are they in harmonizing economic resources, minimization of costs and maximization of profits (Sangmi & Nazir, 2010). The ultimate aim of profit-making banks is profit. The modalities designed alongside the activities carried out by banks are aimed at making sure that this noble goal is attained. Nonetheless, the pursuit of this goal doesn't imply that banks do not have other objectives. Profit making banks happens to have extra social and economic goals (Ongore & Kusa, 2013). Nevertheless, the meaning of the present research has connection to the former objective. ROA and ROE are broadly employed in assessing bank's performance

ROA and ROE have been used by regulators of banks to evaluate performance in an industry and predict trends in the structure of market. They are also used to predict failures of banks in case of mergers. Commercial banks' profitability is determined from the interest spreads between loans and deposits, as majority of its income is from interest income. Since profitability is known from revenue and costs, it is essential that banks strongly evaluate the variables that affect ROA and

ROE (Bennaceur & Goaid, 2008). ROA; this is considered by the net profits prior to tax divided by the entire assets of bank. It measures overall effectiveness in generating profits with available assets.

According to Ongore and Kusa (2013) ROE assesses what the shareholders expect as return for their investment. It measures the total profit of a company in relation to the entire sum of equity that a shareholder has invested. A business that has the ability to internally generate cash has a big ROE. In this case if the ROE is higher, the better the picture of a company in terms of profits. Commercial banks' 2016 financial statements provided evidence of prominent banks having a decline in their profitability as per the analysis presented in Table 1.1

Table 1.1 Banking sector profitability 2013-2017

BANKING SECTOR PROFITABILITY- DECEMBER (2013 -2017) %						
No	BANK NAME	2013 ROE	2014 ROE	2015 ROE	2016 ROE	2017 ROE
1	Equity Bank Ltd	36.00%	49.40%	47.20%	43.50%	37.30%
2	Barclays Bank of Kenya Ltd	36.80%	32.30%	30.40%	24.80%	23.00%
3	CFC Stanbic Bank (K) Ltd	31.30%	27.70%	25.10%	22.90%	16.90%
4	Diamond Trust Bank (K) Ltd	30.00%	24.50%	23.50%	24.40%	19.10%
5	NIC Bank Ltd	29.60%	26.90%	23.70%	19.60%	19.60%

Source: CBK reports (2013-2017)

Based on table 1.1 the trend indicates a declining performance of Kenyan banks financially, and this trend is been attributed to prudential regulations (Muiruri, 2015). The study therefore, sought to ascertain how prudential regulations affect financial performance. It also evaluated on the size of the bank as a moderator on the Link of prudential regulations and performance of banks

1.1.3 Bank size

The subject of the magnitude of a firm is critical in making sure that the financial sector is relatively stable within an economy. Consequently, this has time and again been the core of most discussions. Its prominence can be traced back to the 2007/2008 worldwide fiscal turmoil. During the crisis, it became apparent that banks that are large in size represented a bigger fraction of harm in the economy relative to banks smaller in size (Nzioki, 2011).

The bank size covers the level of capability in terms of production and quantity of services that can be presented to customers. Simply put, it is the size of the group of management that a company possesses in comparison to others in an industry (Sritharan, 2015). It is the magnitude of growth that is appropriate for a business. The economies and diseconomies of scale is determined using the bank size, whereby bank large in size is able to reduce cost due to economies of scale. The study will use total asset as an indicator for bank size.

Empirical evidence have shown that bank size has had implications on the way banks develop their prudential regulations. For instance, Aladwan (2015) reported that in Jordan, banks with higher asset base were more likely to diversify their products and open more branches hence performing better their peers. Moreover, such banks attracted more customers and reported better ROE. Petria et al., (2015) also found bank size to be a significant moderator of bank regulations and financial performance, hence the current study used the variable as moderator.

The study sought to ascertain how bank size moderates on connection between prudential regulations and performance Kenyan banks. In this study, total assets was adopted as the measure of banks size since CBK requires the banking industry to report their size based on total assets.

1.1.4 Prudential regulations and bank performance

Various studies have shown varying evidence linking prudential regulations to banks' financial performance. For instance, Olivier (2017) found that the Return on Equity of the Bank of Kigali had 75.6% variation based on the changes of the prudential regulations, which indicates that financial performance of banks is affected by their state of prudential regulations some of the regulations found to affect financial performance include capital adequacy and regulation of non-performing loans.

Mwenda (2018) found that there existed a significant correlation between aspects of prudential regulations such as capital adequacy and the performance of microfinance banks in Kenya. The researcher found that microfinance banks that had higher capital adequacy were also recorded to have performed better in a measure of ROE compared to those with low capital adequacy. Similarly, Wairimu (2017) found that performance of banks was affected negatively by the management regulation relating to restrictions on share capital, credits and credit guarantees as well as imposition of charges and payment of interests.

1.1.5 Commercial Banks in Kenya

Kenya banking is under the Central Bank Prudential Guidelines CBK Act, Companies Act, and Banking Act. 1995 ion and removal of exchange controls in banking (Otuori, 2013). Central Bank is accountable for coming with and implementation of monetary policies among other functions of fostering the liquidity of the financial system (Chepkoech, 2015). The reporting and publishing of information regarding Kenya's banking sector are one of the sole responsibilities of CBK (Otuori, 2013). Also, the umbrella body for banking institutions in Kenya is known as

Kenya Bankers Association which seeks to protect the interest of member institutions by addressing issues affecting banks.

The CBK enforces set of laws as guided by Banking Act-(cap 488). The essence of guidelines as per CBK is to guard the depositors while reducing the risk of interruption of banking activities owing to a harsh operating environment for the banks that can result in massive bank failures (CBK, 2015). The regulations are also aimed at shielding banks from criminals who engage in the laundering of money. They also ensure that confidentiality is preserved enabling it to direct its credit to the sectors of interest (Ongore & Kusa, 2013).

1.2 Statement of the Problem

Banks` functions in allocation of resources in an economy cannot be wished away (Dang, 2011). They continuously ensure that funds move from the depositors to the investors. For them to do this, they need to generate income that covers the operational cost. It therefore implies that for banks to carry out its intermediation role, it must be making profits. Further than the intermediation purpose, the financial performance of banks brings with it vital elements for economic prosperity in countries (Faris, 2014). This motivates added investment and cause economic prosperity. On the contrary, deprived banking performance result in failures in the bank that can adversely affect economic prosperity.

The declining performance of Kenyan commercial in banks is worrying. This reduction has been consistent from the year 2013 through to 2017. For instance, the ROE for Equity bank declined from 7.7% to 5.7%, Similarly ROE for Barclays bank declined from 5.8% to 3.7% while that of CFC Stanbic Bank from 4.1% to 2.3%. It is undeniable that performance of banks has enormous

influence on economic expansion of a country (Ongore & Kusa, 2013). Prudential regulations and financial performance has therefore sparked the interest various researchers around the world, as evident from the studies in Sri Lanka, Jordan, Japan, Malawi and Nigeria such as Abera (2012), Olalekan (2013), Faris (2014). Even locally, a number of studies based on the bank's performance have been undertaken. It is, however, necessary to note that each study is independent from the other and that their results will differ according to the context of the country among other factors. Banks in different countries differ in terms of the market conditions, regulatory and the financial systems in which they operate (Olweny & Shipho, 2011). This means that what determines bank performance found in a particular nation may not be relevant in another country or may not apply in a similar way. In line with the above, the study was aimed to discover the effect of prudential regulations and performance and impact of bank size as a moderator on link between prudential regulations and banks' performance in Kenya.

1.3 Study objectives

1.3.1 Main Objective

To ascertain the effect of prudential regulations on Kenyan commercial banks financial performance.

1.3.2 Specific Objectives

The precise goals of the researcher incorporated:

- i.** To assess the influence of capital adequacy regulation on financial performance of banks' in Kenya.
- ii.** To determine the influence of regulation of liquidity management on financial performance of banks' in Kenya.

- iii. To investigate the impact of the credit risk management on financial performance of banks' in Kenya.
- iv. To establish the moderating effect of bank size on the interaction between prudential regulations and financial performance of banks' in Kenya

1.4 Research Hypotheses

The null hypotheses of the study were:

H₀₁: Capital Adequacy regulation has no significant effect on financial performance of commercial banks in Kenya.

H₀₂: Liquidity regulation has no significant effect on financial performance commercial banks in Kenya.

H₀₃: there is no significant effect of Credit risk regulation on financial performance of banks in Kenya

H₀₄: there is no significant effect of Bank size on the relationship of financial bank performance and prudential regulations.

1.5 Significance of the Study

The research may be useful to various stakeholders ranging from policy makers to researchers. From the policy perspective, the study may provide important policy recommendations which when implemented will enhance the banks' performance. It may fill the information gap regarding prudential regulations and banks' performance and also on the moderating consequence of bank size on link of prudential regulations and performance of banks financially.

The academicians may also be beneficiaries of this research as it has established solid groundwork for prospect researchers who wish to do extra enquiries on the topic. It has provided suggestions for further research for such scholars to concentrate on.

1.6 Scope of the Study

The examination was based on the time scope of 5 years from 2013 to 2018. The choice of the period was informed by the need to control bias associated with change of banking policies that can be attributed to observed differences as opposed to the causal effect envisaged among the variables under study. The period 2013 to 2018 is within the same political regime and also is the period the new constitution 2010 came fully into effect. The predictor variable is prudential regulations which are liquidity, adequacy of capital and credit risk regulations. The performance of banks which was assessed using banks' ROE denotes the dependent variable, bank size constitutes the research moderating variable. The study was dependent on panel regression.

1.7 Limitations of the study

The drawback arose from the sort of research data to be utilized i.e. secondary data. The variables were based on various ratios, and these ratios were computed as they are not in the financial statements of banks as proposed in this study. In such a scenario, the measures of each ratios was gathered through a guide on data review and computed so as to arrive at the preferred ratios as indicated in the study. The researcher encountered challenges in extracting data since CBK does not publish data on specific banks. Moreover, lack of standardization in the banks' annual reports proved hectic when extracting data since the researcher had to review bulky reports published by some of the banks such KCB and Corporative Bank

1.8 Organization of the study

The study is divided into five sections: the first part explains the research background, the aims, and the importance of the study, extent and drawbacks of the study. The next chapter presents the review of literature from empirical and theoretical perspectives. Chapter three discusses the method, design, population target, design of sampling and empirical approach. Chapter four presents the analysis of the data and discussion while chapter five presents the summary, conclusions and the recommendations arising from the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The current section brings out details concerning the review of literature which span from theoretical to empirical review.

2.2 Theoretical Review

Stakeholders Theory, Liquidity Preference and Market Power Theory was utilized. These theories were used to underpin the study as it supports the link between the predictor, moderating and dependent variables.

2.2.1 Stakeholder Theory

Stakeholder concept was advanced by Ian Mitroff in 1983. In operation of any business, shareholders and management are not only the important ones in the running of business. Miles (2012), Stakeholders theory considers wider group which affects the organizational objectives and policies as compared to agency theory which consider only two groups, shareholders and management. This theory recognizes both the internal and external stakeholders. Internal stakeholders is composed of employees, executives and owners while outside stakeholders are composed of suppliers, government, creditors, customers, society and environment from which the business is operating in. Other stakeholder involvement in organizational decision making can help to reduce conflict hence smooth business operation (Turnbull, 1994). There are three important approaches in stakeholders' theory, descriptive, instrumental and normative approach. Descriptive approach is used to show characteristics and behavior on how firm is managed.

Instrumental approach shows connection that exists between stakeholder's management group and the organizational goals. Normative approach identifies morals for good organizational operation and management (Donaldson & Preston, 1995).

Banks regulation recognizes all the above stakeholders as they play a central role in banks' performance. McDonald and Puxty (1979) states, company's no longer concentrates with shareholders only, this is because every business operates within a society which it has to be recognized. The issue of social and environment accounting has been for the last few years gaining an important in the modern business world. Starik and Rands (1995) suggested environment as key important stakeholder in the running of a business. Information about business operating environment is becoming important to both the business and information users as it provides information which helps to discharge accountability to the society. It also helps in demonstrating responsiveness of the firm to certain ethical issues in that community. some business which supports the issue of community environment are becoming 'greener' in their business operation (Gray, Collison & Bebbington, 1997). The postulates of Stakeholders Theory support the variable performance of banks which is a function of various stakeholders.

2.2.2 Liquidity Preference Theory

This idea was advocated by Keynes (1936). It rests on the idea that institutions just like individuals desire to for different reasons hold money. Liquidity is any form of an asset which is easily converted in to cash, money is considered as the most liquid in all assets. Commercial banks deal with mostly liquid assets which can be demanded anytime by the investors. Interest rate is a reward for not holding liquid asset for specified period which it is calculated by the demand and supply of money. According to Keynes, demand for money is categorized in three

motives; firstly, transaction motive which is desire to have cash for basic transaction such as for transport, wages or raw material payment. Secondly, precautionary motive which is holding cash to cater for any unexpected expenses if happens such as; accident or illness. Thirdly, speculative motive which is to hold cash and anticipate future changes in order to exercise your rights in stock buying. If stock price is expected to rise then interest rate is expected to fall so, investors will buy and wait until price rises. Supply of money of money is the entire amount of money in a country (Keynes 1936).

Different investors have different taste in liquidity where some may prefer illiquid assets. The more illiquid an asset is the more the interest rate. Liquidity in banks can be affected by several factors such as political instability in a country, like in the case of what happened in Kenya in 2007 and 2008 post-election violence, every investor from the affected area rushed to the bank with the desire to have his cash in the pocket. Argument by Keynes was criticized by other authors such as Rothbard (1962), argued that, interest rate is influenced by other factors not liquidity preference only as Keynes suggested. Keynesian theory of interest considers short-run interest with no explanation on long run interest. The postulates of Liquidity Preference Theory provide theoretical support for the linkage between liquidity regulation and banks' performance.

2.2.3 The theory of Market Power

The presumption originated in 1965 by Bhagwati. It suggests that the arrangement of the market in an industry has a momentous consequence on the banks' performance. According to Olweny and Shipho (2011) SCP (Structure Conduct Performance) and the RMP (Relative Market Power) hypotheses are two suggestions under this theory.

The SCP hypothesis explains the association between the arrangement of market, behavior of firm and performance. Baye (2010) put forward that the industry's structure comprises concentration, conditions of the market and technology whereas the conduct comprises decisions on pricing, advertising and R&D. Athanasoglou (2008) proposes a boost in power in the market leads to monopoly in profits. In addition, Olweny and Shipho (2011) suggest that market concentration in banking sector can result in power in market that ensures high profits.

The hurdles towards an entry to a particular industry can change the profitability of a firm for the reason that increased entry costs aid existing firms in sustaining profit monopoly since new entrants can reduce the profit share (Berger, 1995). Concentration in the Market therefore leads to a reduction in the cost of consent between available banks resulting in profits. Olweny and Shipho (2011) opines that banks operating in markets that are concentrated can join together and charge superior rates in loan concurrent with the payment of rates of deposit that are low. The end result is abnormal profits superior to those that operate in markets that are concentrated less, not considering their effectiveness.

The RMP, submits that bank's profitability is impacted by market share and suggests that merely large banks having differentiated products have the capacity to manage prices and make their profits rise. They have the ability to exercise power in the market thus gaining profit monopoly unlike smaller firms in terms of market share which operate like they are under ideal competition (Berger, 1995). The prepositions of Market Power Theory reinforce the variable bank size. Market Power reinforces the moderating variable as it links size of banks which translates into their market share/market power.

2.3 Empirical Review

In this section, other scholars' work has been reviewed by reporting what they did, the methods they used as well as their findings. The researcher also provides a critique that justifies the value of the current study.

2.3.1 Capital Adequacy Regulations and Financial Performance of Commercial Banks

Sangmi & Nazir (2010) concentrated on performance of banks in India and reported that, adequacy of capital (CAR) has direct effect on the bank's profitability in India because they have managed their capital adequacy ratio well by keeping it higher than the least standard of 10% as it is fixed by RBI (Reserve Bank of India). However, this study only focused on Indian banks, whereas the current study explored the Kenyan situation.

Nzioki (2011) investigated on impact of adequacy of capital on performance of banks in NSE. He found that, capital adequacy influences performance Kenyan bank positively. In his conclusion he proposes that, the larger the bank capital adequacy the smaller the probability of financial distress and liquidity creation. The study however did not mull over the bank size as a moderator on the link between adequacy of capital and performance.

Olalekan (2013) conducted a study on adequacy of capital and banks' profitability: empirical proof from Nigeria. The purpose was to appraise the consequence of adequacy of capital of both domestic and foreign banks in Nigeria and their profitability. The findings revealed that, adequacy of capital relates positively to profitability of Nigerian banks because it is an assurance boost to public, depositors and regulatory body in Nigeria. He concluded by suggesting capital adequacy as the most important factor in determining profit ability for Nigerian banks. Unlike

the study by Olalekan which focused on Nigeria, the present study was focusing on banks in Kenya.

A positive noteworthy connection between capitalization and profitability in Nigeria was also established by Obamuyi (2013). He submits that banks having much capital have an easy access to funds at a cheaper rate and boost their capacity to deal with risk while investing in improved quality assets. The positive relationship reflects the statements found in the anticipated bankruptcy costs hypothesis and the signaling hypothesis according to Obamuyi (2013). Similarly, the study was done in the perspective of Nigerian banks, but the current study was in the context of Kenya.

2.3.2 Liquidity Regulations and Financial Performance of Commercial Banks

Lamberg and Valming (2009) explored the implications of managing liquidity on profitability. The study was done in Sweden and revolved around the use of liquidity strategies. The reason of the study was to recognize if any variation in liquidity strategies is connected to profitability which can be examined by ROA. They found that, firms which had tightened there liquidity management strategies had good financial benefits of their commitment. This shows that, there is an evidence of strong link between liquidity management and firm's performance. They concluded there study by encouraging companies to ensure good focus on liquidity management in order to achieve good financial performance. The study was done for Sweden banks, therefore due to different economic conditions of countries, the findings aren't applicable to Kenyan banks.

Dang (2011) did a study on CAMEL system of rating in banking control and concluded that, there is strong bond between adequate liquidity level with banks' performance in terms of

profitability. Similarly, Demirgunes (2016) did on consequence of liquidity on performance for retail industry in Turkey and found existence of strong association between liquidity and performance for Turkish retail industry. The study was done for banks in Turkey and the moderating impact of the size of the bank on the link between liquidity and banks` performance was not considered.

In another study by Abera (2012) the variables that determine profitability in Ethiopian banks were analysed. The analysis revolved around bank and industry-specific and macro-economic dynamics that had an influence on the profitability. The period of study was 2000-2011 and used mixed methods research approach. The method brought together analysis of documents and interviews to gather important data for the study. The population target was commercial banks registered by NBE. A sample of 8 banks was considered. The regression analysis showed the negligible effect that liquidity had on the profitability. On the contrary, the in-depth interviews depicted that banks` liquidity was the most important variable and had momentous impact on the profitability of banks in Ethiopia. Nonetheless, the regression investigation and the interviews indicated that an inverse relationship exist between liquidity and profitability. The study concentrated on commercial banks in Ethiopia. In the current study, secondary data was used as against primary data and will center on Kenyan banks.

Faris (2014) researched on the efficiency of liquidity management in two Islamic banks; Islamic International Arab Bank and Islamic Bank and found that, the issue of liquidity management efficiency is not as it is supposed to be in those two Islamic banks thus the reason for not well financially performing. Also, the results indicated liquidity problem in long term. He concluded that, there is risky of equity capital and reserves because Return on Asset (ROA) was not

efficient during the study period. The study however centered on Jordan Islamic banks unlike the present study which concentrated on banks in Kenya.

Ibe (2013) examined the consequence of liquidity, management on profitability of banks in Nigeria. It concentrated on three banks in Nigeria and found crucial problem with Nigerian banks where the selected variables performed poorly in terms of profitability. This revealed that, banks in Nigeria have poor liquidity management. He concluded by stating that, each bank in Nigeria should determine optimal liquidity position which will enable achievement of good financial performance. The present study was on Kenyan banks, thereby dealing with research gaps.

Molefe and Muzindutsi (2015) did a study on effect of capital and liquidity management on profitability of main South African Banks. The study covered five leading banks in South Africa for a time between 2004 to 2014. The study showed capital adequacy is the mainly effective tool for soundness of financial institutions in South Africa. There was weak connection between liquidity and profitability for those five leading banks South African banks. The study concluded that, banks should revise the liquidity management guideline to determine optimal liquidity level in order to improve performance. The present study however, focused on Kenyan banks.

2.2.3 Credit Risk Regulations and Financial Performance of Commercial Banks

Olweny and Shipho (2011), did a study on Kenya's banking sector on the effects of bank-specific factors on the performance. An explanatory approach through the use of panel design research was used. Yearly financials of 38 banks through the period 2002 to 2008 were accessed

from the CBK and banking assessment 2009 for scrutiny purpose. The analysis of data was done using multiple linear regression. The outcome showed that banks can realize profitability through improvement of quality of asset by cutting on the rate of non-performing loans.

Demirgunes (2016) did a study on credit risk and performance for Turkish retail industry. Using regression analysis, the results indicate that credit risk negatively impact on financial performance for Turkish retail industry. The study was done for banks in Turkey and the moderating effect of bank size on association between credit risk and performance of banks was not considered. The present study will focus on Kenyan banks where the moderating influence of the size of on the connection between credit risk and bank`s performance was examined.

In another study by Abera (2012) the variables that determine profitability in Ethiopian banks were analysed. The analysis revolved around bank and industry-specific and macro-economic dynamics that had an influence on the profitability. The period of study was 2000-2011 and used mixed methods research approach. The method brought together analysis of documents and interviews to gather important data for the study. According to the findings, credit risk has a negative effect on the profitability of the banks. The present study was based on secondary data as against primary data and focused on Kenyan banks.

2.3.4 Bank Size and Financial performance

In a study relating to the sizer of a bank and its financial performance, Ezra (2013) focused on the variables influencing the profitability Sub-Sahara Africa banks. The time scale was 1999 - 2006 where it was based on an unbalanced panel of 216 for 42 countries in SSA. The variables used in the research were size of the bank, adequate capital, inflation and operational efficiency. Based on the findings, bank size was revealed to significantly impact on Sub-Sahara Africa

banks profitability. The study notably was based on a countryside level scrutiny unlike the current which was focusing on banks in the Kenyan perspective.

Kwakwa (2014) explored factors that determine bank`s performance, singling out the Ghanaian situation for his study. Bank size was one of the independent variables of the study whereas performance which was assessed using ROA and ROE was the dependent variable. In the case of ROA, a positive and noteworthy effect of bank size on ROA was established. In the case of ROE, a positive and non-significant impact on Return on equity was found. However, the researcher focused on banks in the context of Ghana which though a developing country, it is characterized by varying regulatory framework when compared to Kenya. In sealing this background gap, the study centered on profit-making Kenyan banks.

2.3.5 Commercial Banks Financial Performance

Aladwan (2015) conducted a study among Jordan Commercial Banks and found that there was a general improvement in their profitability occasioned by their continued adoption of technology in management and proper adoption of updated credit risk management. The researcher used secondary methods to collect a two-decade data on banks financial performance, which proved that over time, the decisions made by management have either paid off or led to collapse of some banks as evidenced from increased mergers, acquisition and well as receivership. This implied that banks` prudential regulations influenced their financial performance over time.

In South Africa, Kumbirai and Webb (2010) conducted a study to ascertain the reason why commercial banks performed so badly in 2007. The researchers established that many banks adopted unregulated and very unfair competition, which also swept across the banking industry

in the world. Commercial bank managements concentrated on market share and advanced bad debts which led to recession. All the major financial regulations such as liquidity, capital and credit risks were reported to be in distress, but rebounded from 2008 when sweeping changes were made to regulate the banking industry.

In Kenya, Kamau and Uluoch (2016) conducted a timeseries data covering 2012 to 2015. The researchers aimed at establishing how bank innovations had influenced their financial performance. From the findings, average bank performance was quoted at 23.7%. However, the large differences established in performance of various tiers of the banks was attributed to innovations related to prudential regulations such as credit risk management. The researcher found that while some banks continued to make profit over the period under study, others faced turbulence due to poor financial decisions that led them to perpetual losses. However, the researchers do not explain the kind of performance they were referring to in their study. they also did not justify the time-series period chosen.

2.4 Summary of the Reviewed Literature and Gaps

Various research gaps exist in literature regarding prudential regulations and financial performance as observed. Most researches were done in the context of other countries. Due to the diverging regulatory and market systems of countries, the findings of such studies aren't applicable to the context of Kenya. Also bank size as a moderator on the link between prudential regulations and performance was not examined.

Table 2.1: summary

Researcher	Objectives	Results	Gaps	Proposed Study Focus
Lamberg & Valming (2009)	Impacts of managing liquidity on the Swedish bank profits.	Liquidity management has a positive influence on profitability	Done in Nigerian banks whose market conditions may not apply to Kenyan banks	Consider the impact of liquidity regulation on Kenyan banks
Sangmi & Nazir (2010)	Assessing performance of banks in India	CAR has direct consequence on banks profitability	centered on Indian banks whose market conditions may not apply to Kenyan banks	Analyze the impact of adequacy of capital guideline on performance of Kenyan banks
Nzioki (2011)	Influence of capital adequacy on performance of banks quoted in NSE	There is a positive relation between adequate capital and bank performance.	Failed to address other prudential regulations.	Consider the role played by liquidity restrictions and credit risk and on bank's performance.
Dang (2011)	Evaluation of the CAMEL rating system in Ethiopian supervision of banking	Strong relationship between adequate liquidity level and bank's performance	Research was centered on Ethiopian banks whose market conditions may not apply to Kenyan banks	Consider the impact of liquidity regulation on Kenyan banks
Olweny & Shipho (2011)	Investigation on the influence of bank specific factors on performance of Kenyan banks	Improving profitability can be done through reduction of non-performing loans	Moderating effect of bank size was not considered.	bank size on the is examined as a moderator on the link between prudential regulations and performance of banks in Kenya
Abera (2012)	Factors affecting profitability in Ethiopian banking industry	Credit risk has a negative effect on profitability of commercial banks	Study failed to address other prudential regulations	Consider other prudential regulations such as adequacy of capital and liquidity
Olalekan & Obamuyi (2013)	Assess the impact of adequacy of capital and banks' profitability in Nigeria.	Capital adequacy	Was carried out for Nigerian banks whose market conditions may not apply to Kenyan banks	Consider other prudential regulations such as credit risk and liquidity

Faris (2014)	Efficiency of liquidity management in two Islamic banks	Lack of efficiency in liquidity management lead to poor financial performance.	Centered on Islamic banks.	present study was centered on Kenyan banks
Molefe and Muzindutsi (2015)	Consequence of profit management and liquidity on profitability of five banks in South African banks	South African banks should revise liquidity management guideline to determine optimal liquidity level in order to improve financial performance	The researcher explored 5 South African banks.	The present study will explore banks in Kenya
Demirgunes (2016)	Influence of liquidity on performance on Turkish banks	Credit risk regulations has a negative impact on banks financial performance	Moderating effect of bank size was not considered.	Explore the role of the size of banks.

Source: Researcher (2019)

2.5 Conceptual Framework

This framework will provide the proposed relationship of the research variables in diagrammatic form. In this case, Prudential regulations denote the predictor variables, bank size represents the moderating variable and the dependent variable is represented by performance as Evaluated by ROE.

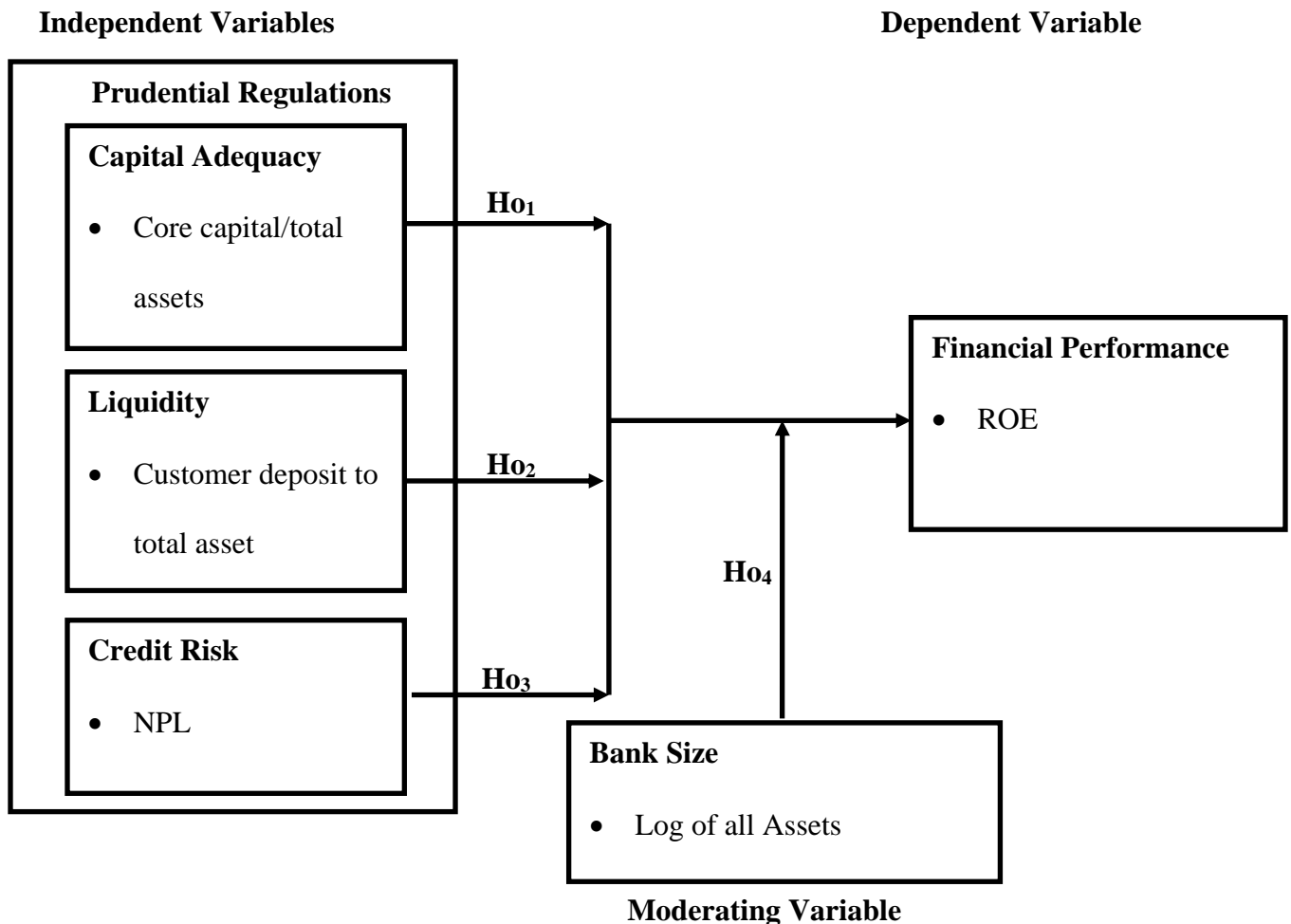


Fig 2.1: The Conceptual Framework

Source: Researcher (2019)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In this section, the researcher describes the methodology that was employed to achieve the objectives of the proposed study. These span from the design of research, empirical model, the study population, sampling technique, data collect and data analysis.

3.2 Research Design

Research design forms an approach for making inquiries or investigations to ascertain the relationship among research variables. A causal design of research was the basis of the study. Causal design is ideal for researches which seek to ascertain the effect and cause relationship existing between research variables. This therefore, becomes appropriate for this study.

3.3 Target Population

The study population comprised of the 42 banks that were in operation from 2013 to 2018 which is the time scale.

3.4 Sampling Design

Sampling involves choosing or selecting a subset or component of a population which can be used for generalization. The researcher used a census approach, due to the fact that the population is not large. As explained by Mugenda and Mugenda (2013), a census is used in a research when the target population is relatively small or when it is reasonable to do so. Additionally, census studies enhance the validity of research data and findings.

3.5 Empirical Model

The study employed a panel regression model, which is considered appropriate for time series data as expressed below:

$$B = f(\text{Capital adequacy, Liquidity, credit risk}) \dots\dots\dots (\text{Eq 1})$$

$$B_{it} = \beta_0 + \beta_1 A_{1it} + \beta_2 A_{2it} + \beta_3 A_{3it} + \epsilon_{it} \dots\dots\dots (\text{Eq 2})$$

Where:

B_{it} – Financial performance

β_0 - Constant

A_{1it} – CAR (capital adequacy regulation)

A_{2it} – Liquidity Regulation

A_{3it} – Regulation of risk

$\beta_1 - \beta_3$ = Regression coefficient

ϵ_{it} = term of error

Moderation Test

Moderation effect was tested using an approach developed by Whisman and McClelland (2005).

The test is based on two steps where in the initial step, the moderating variable is expressed as an independent variable and the subsequent step the moderating variable is also expressed as an

independent variable but further interacted with the independent variables as depicted in equations 1 and 2.

$$B_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 MV_{it} + \varepsilon \dots \dots \dots (Eq$$

3)

$$B_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 MV_{it} + \beta_3 X_{it} * MV_{it} + \varepsilon \dots \dots \dots (Eq$$

4)

Where:

X_{it} = composite of the independent variables

M_{it} = Moderating Variable

$X_{it} * M_{it}$ = Interaction of the independent and intervening variable

3.6 Operationalization and measurement of variables

This section contains the operation of variables and also the various measures which was used.

Table 3.1: Variable measurements and operationalization

Variables	Role	Operationalization	Measurement
Capital adequacy	Independent	Adequate capital	Core capital to total assets
Liquidity	Independent	Ratio of Liquidity	deposit to assets
Risk of credit	Independent	NPL ratio	NPL/Total Loans
Size of the bank	Moderating	Total assets	Logarithm of assets value (Ksh)
Performance	Dependent factor	ROE	-Net income -Equity

Source: Researcher (2019)

3.7 Data Collection Instrument

This secondary data was used for the period 2013 to 2018 and was extracted from the commercial banks' annual financials. The data collected for each variable include; in the case of the dependent variable (financial performance), the data was return of equity; for capital adequacy, the data was core capital to entire assets, for liquidity regulation the data collected was liquid assets to total assets, for credit risk, the data to be retrieved was total loans and non-performing loans. However, for the moderating variable which is bank size, the data collected was bank size (total assets).

3.8 Data Analysis and Presentation

This study used panel data which ensured sufficient data was available to the researcher because it contains both time series and cross-sectional dimensions thus, minimal biasness in parameter estimators (Baltagi, 2005). Data was gathered for a period of five (5) years from 43 banks in Kenya. Descriptive analysis (mean and standard deviations) was carried out. Panel regression was used for inferential analysis to establish the effect of the independent variables (prudential regulations) on the dependent variable (financial performance). STATA software was used where the regression results was presented through the use of graphs and tables.

3.9 Diagnostic test

The test was performed to establish existence of: normal distribution, Heteroscedasticity, and multicollinearity. These was necessary since they are important assumptions that must be achieved for a regression model to be deemed fit.

3.9.1 Test for normality

The data for regression analysis is desired to have a normal distribution, as such the test for normality is performed to determine whether the distribution of data meets the expected criteria. Jacque-Bera test was used in testing the distribution of research data in line with Chris (2008). The test is based on a null hypothesis of a non-normal distribution and a normal distribution as the alternative hypothesis which is ascertained at 5 % level of significance. A non-parametric test would be used in case of a non-normal distribution of data. However, all the data for the variables used in this study were normally distributed since the non-normal distribution hypothesis was rejected ($p=0.21>0.05$) through Jacque-Bera test.

3.9.2 Multicollinearity Test

Multicollinearity is whereby the independent variables have some degree of correlation (Wooldridge, 2013). Presence of multicollinearity among the independent variables leads to wrong estimates, which in turn increases the p-values in a regression model. To test for multicollinearity, the researcher will employ the variable inflation factor (VIF) procedure. VIFs of between 1 to 10 are considered safe for absence of multicollinearity while other values signal the presence of multicollinearity. To cure the problem of multicollinearity, the researcher will use factor analysis, where variables found to be highly correlated was merged or removed from the model. From the findings, none of the variables studied exhibited collinearity since all VIFs were between 1 and 10 as required for panel regression analysis.

3.9.3 Heteroskedasticity Test

Heteroscedasticity is whereby the residual variances are constant in different observations (Verbeek, 2012). Breusch Pagan test was utilized in assessing heteroscedasticity. The hypothesis

tested was 'presence of heteroscedasticity, hence p-value below 5 percent implies that the hypothesis is rejected and the model does not suffer from heteroscedasticity, meaning it is homoscedastic. If heteroscedasticity situation arises, the researcher could use the generalized least squares (GLS) model instead. The findings of the study showed in all the variables, the problem of heteroscedasticity did not exist since the p-values were statistically significant ($p < 0.05$)

3.9.4 Autocorrelation

Autocorrelation/serial correlation situation results when error terms in a time series regression model, correlate over time in the series or becomes dependent on each other, and indicates presence of non-randomness in a dataset, hence disqualifying a usual OLS estimator model. In this study, the researcher conducted a Durbin Watson test where a value that is not significantly different from 2, indicates lack of serial correlation. In this study the researcher tested hypothesis of zero autocorrelation, where calculated value must be greater than lower critical value (DL). In this study, there was no serial correlation problem ($D = 2.704526 > 1.718$)

3.9.5 Stationarity test

Stationarity situation happens when statistical properties of a time series data or the processes generating the data do not change over time. As such, stationary data is easier to model and can be used for predictions. If a time series data is found to be non-stationary, it possesses a unit root, hence becomes impractical to model and may result to poor conclusions. To test for stationarity, this study carried out a unit root test using Augmented Dickey–Fuller (ADF) test. The findings revealed that the hypothesis was rejected (test statistic -4.703 was lower than DL -3.431) and the difference was statistically significant ($p = 0.0007 < 0.05$) at 95% confidence interval, hence the

data collected in this study was stationary. This meant that the data was valid for regression modelling.

3.9.6 Model specification

The study employed Hausman Specification Test to determine whether the suitable model was Random Effect or Fixed Effect. The null hypothesis tested was ‘the preferred model was random effect’. From the findings, the null hypothesis was rejected ($p=0.000<0.05$), hence the Fixed Effect Model was the most suitable for this study, hence adopted for analysis.

3.10 Ethical Considerations

Ethical concerns are key when carrying out a research. The ethical considerations which include guidelines governing research in Kenya was duly followed before, during and after the research study. first, permission to collect data was obtained from Kenyatta University Graduate School, followed by another permission from National Commission for Science, Technology and Innovation (NACOSTI).

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter will cover the data analysis, presentation as well as the discussion. The chapter is pegged on the study's objectives presented in chapter one of this study. The chapter is subdivided into two sections. The first section covers the descriptive statistics while the second part covers the inferential statistics used to test the study's hypothesis.

4.2 Descriptive Statistics

The study had 5 variables, each of them with 240 observations representing 6 observations for each bank. The summary of descriptive statistics is displayed in table 4.1

Table 4.1 Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
CapitalAde~y	240	2.270042	12.38476	0	84.36
Liquidity	240	3.035083	6.702491	.01	47.74
Creditrisk	240	2496.779	5212.795	60	45654
Banksize	240	4.296667	.8476819	1.93	5.85
ROE	240	31.1465	184.6178	.04	1234.86

Source: Researcher (2020)

The findings show that the mean capital adequacy among the banks was 2.27 with a minimum of 0 and a maximum of 84.36. A standard deviation of 12.38 was high, and indication that there was a large dispersion among the bank themselves, where some had high capital adequacy while others had very low. The mean liquidity was found to be 3.04 with a minimum of 0.01 and a

maximum of 47.74. A standard deviation of 6.7 was quite high, which also indicates large disparity where some commercial banks had disproportionately higher liquidity than others. The credit risk, which was assessed through non-performing loans, was high in almost all the banks with a mean of 2496.78, a minimum of 60 and a maximum of 45654. A standard deviation of 5212 was very high, an indication that some banks had very high credit risk compared to others. When it comes to bank size, which was measured through natural logarithm of total assets, a mean of 4.30 was established with a minimum of 1.93 and a maximum of 5.85. A standard deviation of 0.85 was low, an indication that the spread in bank size was low. Financial performance, measured through return on equity had a mean of 31.15 with a minimum of 0.04 and a maximum of 1234.86. A standard deviation of 184.62 meant that the spread among the banks was high, which also means some banks had very high ROE while others had very low. In his study covering 2007 to 2014, Kagecha (2018) reported a capital adequacy ratio of 0.1753, a liquidity ratio of 0.5692, a bank size of 3.6615 and a ROE of 0.0641. Considering the fact that the current study covered the period of 2014 to 2019, the implication is that these ratios have increased over time. Another study by Ongare (2015) involving only large commercial banks found a capital adequacy ratio of 17.23, liquidity of 77.5 and ROE of 14.8. This finding proves the existence of large disparities between small and large commercial banks as depicted in the current study.

4.3 Diagnostic tests

Before the panel regression was conducted, critical diagnostic tests were carried in order to ensure the basic assumptions of a panel regression were upheld. In this study, the researcher

performed: normality, multicollinearity, homoscedasticity, autocorrelation, stationarity and model specification tests.

4.3.1 Normality test

Normality test was done using Jacque-Bera test where test hypothesis was ‘normal distribution was present’. The test was performed at 95% confidence interval. Table 4.2 displays the results

Table 4.2 Normality test results

Skewness/Kurtosis tests for Normality					
Variable	obs	Pr (skewness)	Pr (kurtosis)	joint	
				Adj chi2 (2)	Prob>chi2
CapitalAdequacy	240	0.0144	0.0285	2.19	0.21
Liquidity	240	0.0145	0.0430	2.98	0.21
Creditrisk	240	0.0171	0.0394	2.31	0.33
Banksize	240	0.3395	0.5092	3.62	0.15
ROE	240	0.0031	0.0011	2.92	0.18

Source: Researcher (2020)

4.3.2 Multicollinearity test

Multicollinearity test was performed by establishing the Variance Inflation Factors (VIF), where VIFs of between 1 and 10 were considered ‘no multicollinearity’. Any other result meant multicollinearity existed. Table 4.3 shows the results

Table 4.3 Multicollinearity test results

Variable	VIF	Judgement
Capital adequacy	1.20	No collinearity
Liquidity	1.08	No collinearity
Credit risk	1.17	No collinearity
Bank size	1.30	No collinearity
Average VIF	1.19	No collinearity

Source: Researcher (2020)

From the findings, all the VIFs were between 1 and 10, hence the problem of multicollinearity did not exist from the data used for panel regression in this study.

4.3.3 Heteroscedasticity test

Breusch Pagan Godfrey test was used to determine presence or absence of Heteroscedasticity, where the hypothesis of ‘presence of heteroscedasticity’ was tested. The results were as displayed in table 4.4

Table 4.4 Heteroscedasticity test results

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of ROE

chi2(1)      =   461.01
Prob > chi2  =   0.0000
```

Source: Researcher (2020)

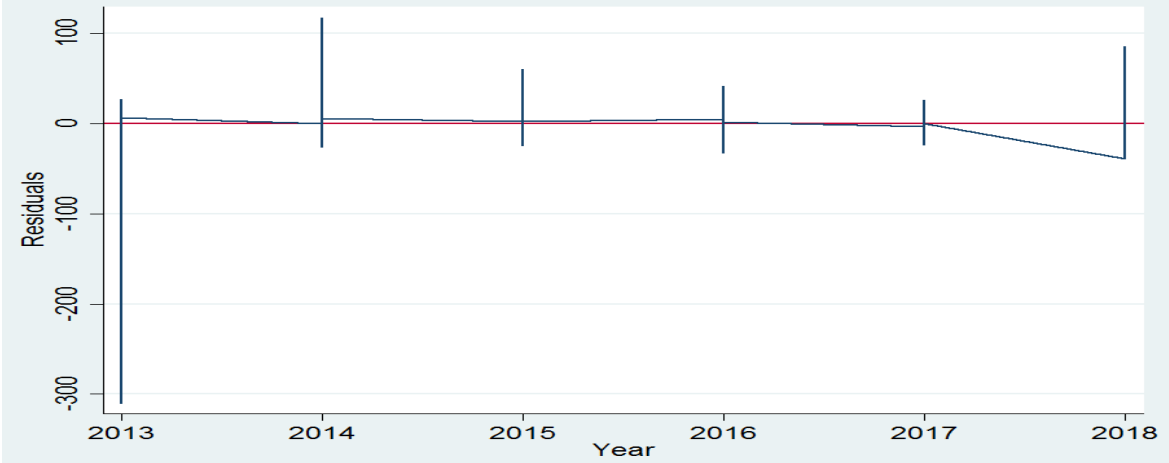
The hypothesis for heteroscedasticity was rejected ($p=0.0000 < 0.05$), and indication that the data was homoscedastic, hence suitable for panel regression.

4.3.4 Autocorrelation test

In this study, the researcher conducted a Durbin Watson test where a value that is not significantly different from 2, indicates lack of serial correlation. A hypothesis of zero autocorrelation was tested, where calculated value must be greater than lower critical value (DL).

Fig 4.1 shows the behavior of residuals for each year while Table 4.5 displays the statistics.

Figure 4.1 Residuals



Source: Researcher (2020)

Table 4.5 Durbin Watson test

Durbin Watson indicators	Finding
N	40
<i>k (regressors)</i>	5
<i>Hypothesis (H0)</i>	Zero autocorrelation
Durbin Watson value	2.704526
Critical value (95%)	1.718 (DL) 1.809 (DU)
Judgement	Hypothesis not rejected

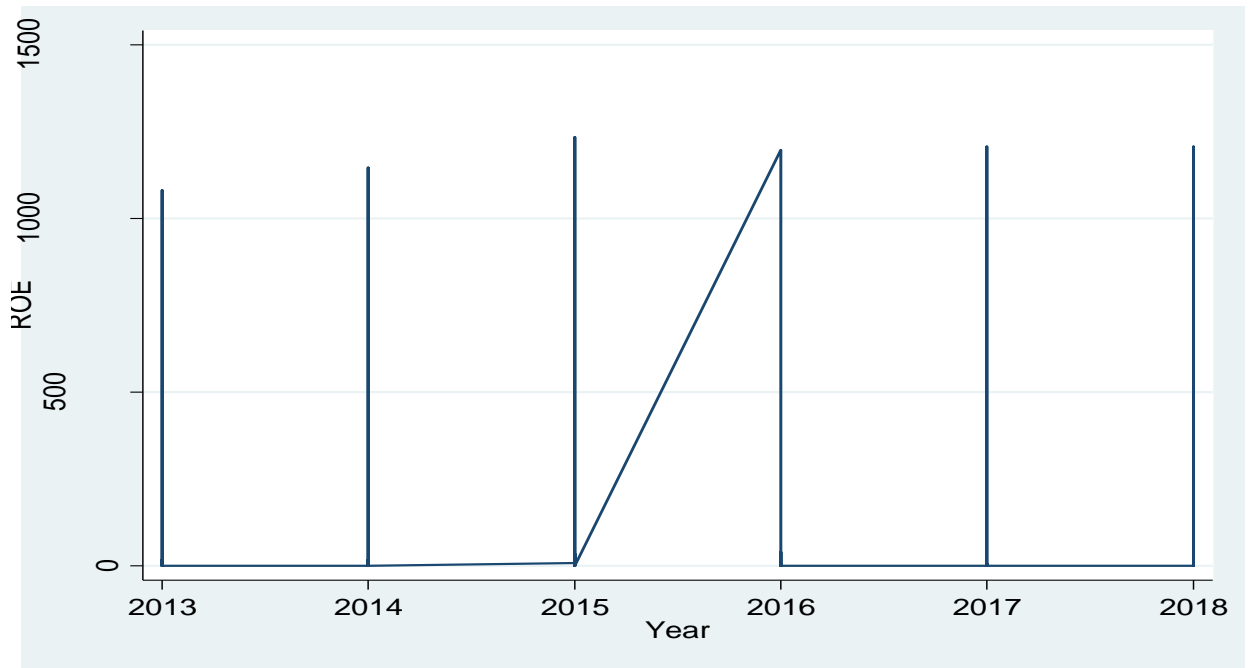
Source: Researcher (2020)

Since Durbin Watson value (D) is greater than lower critical value (DL) ($D=2.704526 > 1.718$), The lags of the data used in this study did not pose the problem of serial correlation.

4.3.5 Stationarity test

To test for stationarity, this study carried out a unit root test using Augmented Dickey–Fuller (ADF) test, under the null hypothesis of ‘there was unit root/data was not stationary’. Since ADF is based on lags (t-1), the first observation is never included in the test. Fig 4.2 displays the unit root curve while table 4.6 displays the ADF test findings.

Figure 4.2 Unit root curve



Source: Researcher (2020)

From the curve, it can be observed that superficially, there were observable trends in the data collected in all the 5 years, an early indication of lack of unit root.

Table 4.6 Augmented Dickey-Fuller test

Dickey-Fuller test for unit root					Number of obs = 239	
Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value	Interpolated Dickey-Fuller		
Z(t)	-4.703	-3.994	-3.431	-3.131		
MacKinnon approximate p-value for Z(t) = 0.0007						
D.ROE	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
ROE						
L1.	-.1707719	.0363107	-4.70	0.000	-.2423064	-.0992374
_trend	-.1149518	.0971581	-1.18	0.238	-.3063598	.0764561
_cons	19.13457	13.63482	1.40	0.162	-7.726945	45.99608

Source: Researcher (2020)

From the findings, the calculated test statistic is less than critical value ($-4.703 < -3.431$) and the difference was statistically significant ($p=0.0007 < 0.05$) at 95% confidence interval, hence the hypothesis that ‘there is unit root’ is rejected and a conclusion that the data used in this study was stationary, hence statistically valid for regression models. Furthermore, the fact that the coefficient of lag 1 (L1) was negative (-0.1707719) makes the model valid.

4.3.6 Model specification

The study employed Hausman Specification Test to determine whether the suitable model was Random Effect or Fixed Effect. The null hypothesis tested was ‘the preferred model was random effect’. A p-value of less than 0.05 leads to rejection of null hypothesis. The results were as displayed in table 4.7

Table 4.7 Hausman Test

	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) fe	(B) re		
CapitalAde~y	2.599285	13.14679	-10.54751	.2027711
Liquidity	.2270135	.1088151	.1181984	.
Creditrisk	.0003731	.0002715	.0001016	.
Banksiz	1.893249	2.89093	-.997681	.

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
 = 2420.38
 Prob>chi2 = 0.0000
 (V_b-V_B is not positive definite)

From the findings, it was clear that the null hypothesis that random effect was the preferred model was hereby rejected ($p= 0.000<0.05$), hence the fixed effect model was the suitable panel regression for this study.

4.4 Regression analysis

The had two sets of models, one without a moderator and the other with a moderator

4.4.1 Panel regression without a moderator

The first regression model involved independent variables without a moderator as shown in table 4.8

Table 4.8 Panel regression without a moderator

Fixed-effects (within) regression				Number of obs	=	240
Group variable: Bank				Number of groups	=	40
R-sq:				Obs per group:		
within	=	0.2373		min	=	6
between	=	0.9949		avg	=	6.0
overall	=	0.9783		max	=	6
corr(u_i, Xb) = 0.9856				F(3,197)	=	20.43
				Prob > F	=	0.0000
CapitalAdequacy	2.532783	.3920799	6.46	0.000	1.75957	3.305995
Liquidity	.229067	.1079551	2.12	0.035	.0161709	.441963
Creditrisk	.0003814	.0001545	2.47	0.014	.0000767	.0006862
_cons	23.74936	1.122798	21.15	0.000	21.53512	25.96361
sigma_u	155.0013					
sigma_e	9.0800855					
rho	.99658004	(fraction of variance due to u_i)				
F test that all u_i=0: F(39, 197) = 37.60				Prob > F = 0.0000		

Source: Rresearcher (2020)

$$ROE_{it}=23.75+ 2.53CapitalAdequacy_{it}+0.23Liquidity_{it}+0.00038Creditrisk_{it} + \varepsilon$$

The findings show that the combined influence of independent variables was determined using the R Square (0.9783) which implies that the independent variables in the model had 97.83 determination of commercial banks' financial performance, which was statistically significant evidence by the p value $0.000 < 0.05$. There was only 2.07% of the outcome of Return on Equity, which could not be explained by the variables in the model, hence could only result from other variables beyond the scope of the study. The findings show that the panel regression model was well defined and the influence of the independent variables on the financial performance of banks was not by chance alone. The findings show that a unit increase in capital adequacy would lead to 2.53 increase in ROE. A p-value of $0.000 < 0.05$ meant that capital adequacy was significant predictor of banks financial performance. Therefore, based on the statistically significant effect of regulation of capital adequacy on the financial performance of banks, the first H_{01} 'Capital Adequacy regulation has no significant effect on financial performance of commercial banks in Kenya' is therefore rejected. The findings show that in the Kenyan Banking industry, adequate capital regulation is an important determinant of the financial performance of banks. These findings corroborate those by Sangmi and Nzir (2010) who found adequacy of capital

(CAR) has direct effect on the bank's profitability in India because they had managed their capital adequacy ratio well by keeping it higher than the least standard of 10% as it is fixed by RBI (Reserve Bank of India). Similar findings were reported in a local study conducted by Nzioki (2011) who investigated on impact of adequacy of capital on performance of banks in NSE. He found that, capital adequacy influences performance Kenyan bank positively. In his conclusion he proposes that, the larger the bank capital adequacy the smaller the probability of

financial distress and liquidity creation. These findings show that adequate regulation of capital adequacy as in the case of India and Kenya have a significant influence on the performance of banks.

A unit increase in liquidity would lead to 0.23 increase in ROE, with a p-value $0.035 < 0.05$, an indication that liquidity had a statistically significant influence on banks financial performance. Therefore, the second H_0 'Liquidity regulation has no significant effect on financial performance of commercial banks in Kenya' is hereby rejected. These findings show that among Kenyan banks, regulation of the liquidity has a significant influence on their financial performance. These findings are similar to the findings by Lamberg and Valming (2009) who found that among Swedish banks, that had tightened their liquidity management strategies had good financial benefits from their commitment. This shows that, there is an evidence of strong link between liquidity management and firm's performance. Similar findings are reached by Demirgunes (2016) in Turkish Banks where a strong association between liquidity and performance for Turkish retail industry was identified.

Furthermore, a unit increase in credit risk 0.00038 change in ROE with a p-value of $0.014 < 0.05$, hence being a significant predictor of commercial banks' financial performance. The third H_{03} : 'there is no significant effect of Credit risk regulation on financial performance of banks in Kenya' was therefore, rejected. These findings are similar to the findings by Abera (2012) who found that in Ethiopian banks, credit risk had a negative effect on the profitability of the banks. Similar findings were reported by Demirgunes (2016) who found that credit risk negatively impacted on financial performance for Turkish retail industry. Furthermore, in a local study done

by Olweny and Shipho (2011), the outcome showed that banks can realize profitability through improvement of quality of asset by cutting on the rate of non-performing loan.

4.4.2 Panel regression with a moderator

The second panel regression model involved the independent variable together with a moderator (table 4.9)

Table 4.9 Panel regression with a moderator

Fixed-effects (within) regression		Number of obs	=	240
Group variable: Bank		Number of groups	=	40
R-sq:		Obs per group:		
within	= 0.2416	min	=	6
between	= 0.9914	avg	=	6.0
overall	= 0.9749	max	=	6
corr(u_i, Xb) = 0.9830		F(4,196)	=	15.61
		Prob > F	=	0.0000

ROE	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
CapitalAdequacy	2.599285	.3969074	6.55	0.000	1.816527 3.382042	
Liquidity	.2270135	.1079366	2.10	0.037	.0141473 .4398796	
Creditrisk	.0003731	.0001547	2.41	0.017	.000068 .0006781	
Banksize	1.893249	1.780376	1.06	0.289	-1.617904 5.404402	
_cons	15.49084	7.846851	1.97	0.050	.0157467 30.96594	
sigma_u	154.79922					
sigma_e	9.0770723					
rho	.9965734	(fraction of variance due to u_i)				

F test that all u_i=0: F(39, 196) = 37.64	Prob > F = 0.0000
---	-------------------

Source: Researcher (2020)

$$ROE_{it} = 15.49 + 2.599 \text{CapitalAdequacy}_{it} + 0.227 \text{Liquidity}_{it} + 0.00037 \text{Creditrisk}_{it} + 1.893 \text{Banksize}_{it} + \varepsilon$$

The model incorporating a moderator shows that a unit increase in capital adequacy increased ROE by 2.6, and this change was statistically significant ($p=0.000 < 0.05$). A unit increase in liquidity increased ROE by 0.23, a change that was statistically significant ($p=0.037 < 0.05$). Moreover, a unit increase in credit risk led to 0.00037 increase in ROE, which was also statistically significant ($p=0.017 < 0.005$). A unit increase in bank size increased ROE by 1.8932

but its influence was not statistically significant ($p=0.289>0.05$). The findings show that when bank size is used as part of independent variables, the general behavior of other variables (capital adequacy, liquidity, credit risk) did not change since their influence on ROE remained positive and statistically significant.

4.4.3 Panel regression under interactions

The third panel regression model involved the interactions between the moderator and the independent variable (table 4.10)

Table 4.10 Panel regression under interactions with moderator

Random-effects GLS regression	Number of obs	=	240
Group variable: Bank	Number of groups	=	40
R-sq:	Obs per group:		
within = 0.1746	min =		6
between = 0.9892	avg =		6.0
overall = 0.9655	max =		6
	Wald chi2(3)	=	385.89
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	0.0000

ROE	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
CapitaladequacyBanksizesize	3.994482	.2039231	19.59	0.000	3.5948 4.394164	
LiquidityBanksizesize	.0344907	.0596489	0.58	0.563	-.0824189 .1514003	
CreditriskBanksizesize	.0000593	.0000779	0.76	0.446	-.0000933 .000212	
_cons	7.111945	7.785441	0.91	0.361	-8.147239 22.37113	
sigma_u	19.193433					
sigma_e	9.1603215					
rho	.81447797	(fraction of variance due to u_i)				

Source: Researcher (2020)

$$ROE_{it} = 7.11 + 3.994 \text{CapitalAdequacyBanksizesize}_{it} + 0.0344 \text{LiquidityBanksizesize}_{it} + 0.00006 \text{CreditriskBanksizesize}_{it} + \varepsilon$$

The interaction between capital adequacy and bank size led to 3.99 increase in ROE, and the effect was statistically significant ($0.00<0.05$). A unit increase in interaction between liquidity and banks size led to 0.034 increase in ROE. A p-value of $0.563>0.05$ meant that the interaction

did not have a significant effect on commercial banks' financial performance. Finally, A unit increase in the interaction between credit risk and bank size led to 0.000059 increase in ROE, a change that was statistically insignificant ($p=0.361>0.05$). The null hypothesis H04: 'there is no significant moderating effect of Bank size on the relationship between banks' financial performance and prudential regulations' is not therefore, rejected. The implication is that Bank size was not a significant moderator in this study, since it did not significantly change the decision rule in the model. While analyzing time series data from EU 27 banking systems, Petriia, Caprarub and Ihnatov (2015) found that the size of the bank did not matter when relating prudential regulations such as capital adequacy and liquidity with ROE. A study by Kagecha (2018) also collected a timeseries data of 2007 to 2013 from Kenyan commercial banks and found banks size not be an important factor when establishing relationship between macroeconomic aspects and bank performance. These studies corroborate well with the findings in this study, underscoring the triviality of banks size in influencing the relationship between prudential regulations and bank performance. The summary of the hypothesis testing is as displayed in table 4.11

Table 4.11 Summary of hypothesis testing

Hypothesis	Verdict
H ₀₁ : Capital Adequacy regulation has no significant effect on financial performance of commercial banks in Kenya.	Rejected
H ₀₂ : Liquidity regulation has no significant effect on financial performance commercial banks in Kenya.	Rejected
H ₀₃ : there is no significant effect of Credit risk regulation on financial performance of banks in Kenya	Rejected
H ₀₄ : there is no significant moderating effect of Bank size on the relationship between banks' financial performance and prudential regulations.	Not rejected

Source: Researcher (2020)

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

In this chapter, the researcher will present the study's summary then draw conclusions based on the study's findings before making recommendations.

5.2 Summary

The first objective of the study purposed to assess the influence of adequate capital regulation on financial performance of banks' in Kenya. Capital adequacy was obtained by using the formula core capital/total assets. In regards to the core capital, it was evident that over the six years, there were large variations in bank's capital adequacy as evidenced from large standard deviations, an indication that some banks held extremely large capital in the industry while others held low capital. The inferential statistics revealed that regulation of capital adequacy has a statistically significant influence on the financial performance of banks ($p=0.000<0.05$).

The second objective of the study sought to determine the influence of regulation of liquidity on financial performance of banks' in Kenya. Liquidity was determined by dividing the customer deposits with the bank's total assets. The findings revealed that regulation of liquidity had a statistically significant influence on bank performance ($p=0.035<0.05$), an indication that banks' liquidity was directly proportional to their Return on Equity.

The third objective sought to establish the effect of credit risk on commercial banks' financial performance. Credit risk was measured using Non-performing loans, which averaged at 2496.7

million. It was established that credit risk had significant influence on Return on Equity ($p=0.014<0.05$).

The fourth objective of the study purposed to determine the effect of bank size on the interaction between prudential regulations and financial performance of banks' in Kenya. Bank size was determined through natural logarithm of total assets. The findings showed that bank size averaged at 4.29. The findings show however, bank size was not a significant moderator ($p=0.289>0.05$) in this study and its interaction with prudential regulations (capital adequacy, liquidity and credit risk) did not change the general behavior of the model, hence the relationship between prudential regulations and commercial bank performance was not significantly affected by the size of the bank.

5.3 Conclusion

The researcher concludes that a few banks hold the bulk of the capital in the banking industry and that the adequate regulation of capital has a significant influence on the financial performance of banks in the country.

In regards to liquidity, the study concludes that liquidity is not well distributed across the banks, with a few banks having high liquidity and the majority not being so. Further, the research concludes that regulation of liquidity has a significant influence on the financial performance of banks in Kenya.

Credit risk was a significant predictor of commercial banks' financial performance, hence the hypothesis that 'there is no significant effect of credit risk on financial performance' was

rejected. It can therefore be concluded that regulation of non-performing loans among commercial banks was an important determiner of their financial performance.

In regards to the bank size, the researcher found that the bank size, as a moderating factor did not have a statistically significant moderating effect on the relationship between prudential regulations and commercial banks' financial performance. Therefore, the study concludes that generally, bank size is not an important factor when establishing the relationship between prudential regulations and ROE.

5.4 Recommendations

The researcher makes the following recommendations;

CBK should tighten regulation on capital adequacy, to create more balance in the core capital and total assets of banks. This would bridge the huge gap identified between banks with high capital and total assets and those with minimum core capital and total assets.

The CBK should also put more effort to regulate the liquidity of the industry to ensure that the huge gap in liquidity is minimized to promote equal growth in the industry.

Tight regulations on credit risks more so on non-performing loans should be put into effect to ensure that banks bear less risks from the NPLs.

5.5 Suggestion for further studies

The study another study to be conducted featuring the same variables, but now using Return on Assets as the dependent variable.

The study further suggests a similar study in other financial sectors such as Saccos and Insurance companies

Another study is also suggested to include other prudential regulation ratios such as working capital.

REFERENCES

- Abera, A.2012. Factors Affecting Profitability: An Empirical Study on Ethiopian Banking Industry. Unpublished master's thesis. Addis Ababa University
- Aladwan, M. S. (2015). The impact of bank size on profitability" an empirical study on listed Jordanian commercial banks". *European Scientific Journal*, 11(34).
- Alkadamani, K. (2015). Capital adequacy, bank behavior and crisis: evidence from emergent economies in italy. *European journal of sustainable development*, 4, 2, 329-338.
- Alshatti, A., S. (2015). The effects of credit risk management on financial performance of commercial banks in Jordan: *investment management and financial innovations*, volume 12
- Athanasoglou, P.P. et al. (2005). Bank specific, Industry and Macroeconomic Determinants of Bank Profitability. *Bank of Greece Working Paper 25*.
- Aymen, B., M. (2013). Impact of capital on financial performance of banks: case study of Tunisia. *Banks and banks systems*, vol. 8.
- Central Bank Kenya, (2015). *Bank supervision Annual report*. [Online] Available: <http://www.centralbank.go.ke>
- Dang, Uyen. (2011). *The CAMEL Rating System in Banking Supervision: a Case Study of* Arcada University of Applied Sciences, International Business.
- Demirgunes K. (2016), the effect of liquidity on financial performance: evidence from Turkish Retail industry. *International journal of economics and finance vol 8 no 4;2016*
E-ISSN 1916-9728

- Faris, J., A.(2014). The efficiency of liquidity management of islamic banks: international *journal of business and social science*, vol. 5, No.5(1).
- Greene, W. H (2012) *Econometric Analysis*.(7thed.) Englewood Cliffs, NJ: Pretence Hall.
- Ibe, S., O. (2013). the impact of liquidity management on profitability of Banks in Nigeria, *journal of finance and bank management*. Pp,37-48 1(1) June 2013
- Kagecha, P.K. (2018). Bank Performance: Does Bank Size Matter? Unpublished Thesis, University of Nairobi.
<https://pdfs.semanticscholar.org/407e/b9a65710d172bbca435e07cb08a2c5bc0bd>.pdf
- Keynes, J. M. (1936). *The general theory of employment. interest and money*. New York: Harcourt Brace and World.
- Kumbirai, M., & Webb, R. (2010). A financial ratio analysis of commercial bank performance in South Africa. *African Review of Economics and Finance*, 2(1), 30-53.
- Kwakwa, O. M (2014) Determinants Of Performance Of Comercial Banks In Ghana. A Thesis Submitted To The Department Of Mathematics Institute Of Distance Learning Kwame Nkrumah University Of Science And Technology
- Lamberg, S. and Valming, S. (2009). *Impact of liquidity management on profitability*. Unpublished thesis, Umea school of business
- Molefe, B. and Mazindutsi P., F (2015), *effect of capital and liquidity management on profitability of Major South African Banks*. Proceeding of the 28th annual

conference of the Southern African Institute of management scientist. ISBN: 978 0-620-71797-7.

- Muiruri, P., M. (2015). *Effects of central bank regulatory requirements of financial performance of commercial banks in kenya*: unpublished thesis, Jomo Kenyatta University of Agriculture and Technology
- Nyanga, O. V. (2012). Determinants of financial performance of commercial Banks in Kenya (Doctoral dissertation).
- Nzioki, S., J. (2011). *The impact of capital adequacy on the financial performance of commercial banks quoted at the Nairobi Stock of Exchange*. Unpublished thesis for the degree of Masters of Business Administration- School of Business, University of Nairobi.
- Olalekan, A. (2013). Capital adequacy and banks' profitability: An empirical evidence from Nigeria. *American international journal of contemporary research*, vol.3 No.10
- Oloo, O. (2011). *Banking Survey Report. The best banks this decade 2001-2010, Think Business Limited, Kenya*, Retrieved from www.bankingsurvey.co.ke
- Olweny, T., & Shipho, T. M. (2011). Effects of banking sectoral factors on the profitability of commercial banks in Kenya. *Economics and Finance Review*, 1(5), 1-30.
- Omondi, J., O (2014). Effect of Central Bank of Kenya Prudential Guidelines and Regulations on the Financial Performance of the commercial banks in Kenya. Unpublished thesis for Degree of Masters of science in Finance from University of Nairobi
- Petriaa, N., Caprarub, B., and Ihnatov, L. (2015). Determinants of banks' profitability: evidence from EU 27 banking systems; 7th International Conference on Globalization and

- Higher Education in Economics and Business Administration, GEBA 2013. *ELSEVIER*, doi: 10.1016/S2212-5671(15)00104-5. (P.518-524).
- Richard, P. J., Devinney, T. M., Yip, G. S., & Johnson, G. (2009). Measuring organizational performance: Towards methodological best practice. *Journal of management*.
- Sangmi, M. and Nazir, T. (2010). Analyzing financial performance of commercial banks in India. *Pak. Commer. Soc. Sci.* vol. 4(1), 40-55
- Sritharan, V., (2015). Does firm size influence on firm's Profitability? Evidence from listed firms of Sri Lankan Hotels and Travels sector. *Research Journal of Finance and Accounting*. ISSN 2222-2847
- Verbeek M. (2012). *A guide to Modern Econometrics*. (4th Ed) West Sussex: John Wiley & Sons.
- Vianney, K., j. (2013). *Relationship between regulations and financial performance of Rwanda commercial banks*: unpublished thesis, University of Nairobi
- Vossen, B., V., D (2010). *Bank liquidity management*: unpublished thesis, university at Albany, State university of New York.
- Wang .W (2013) *credit risk management in Rural Commercial Banks in China*. Unpublished thesis. School of business.
- Whisman, M. A., & McClelland, G. H. (2005). Designing, Testing, and Interpreting Interactions and Moderator Effects in Family Research. *Journal of Family Psychology*, 19(1), 111-120. <http://dx.doi.org/10.1037/0893-3200.19.1.111>
- Wooldridge, J. M. (2013). *Introductory Econometrics: A Modern Approach*, Cincinnati (OH): Thomson South-Western, fifth edition

APPENDICES

Appendix I Secondary Data Collection Tool

YEAR	EAT	Equity	Total assets	Core capital	Liquid assets	NPL	Total loans
2013							
2014							
2015							
2016							
2017							
2018							

Appendix II List of Commercial Banks In Kenya

1. UBA Kenya Bank Ltd
2. The Co-operative Bank
3. Suntra Investment Bank Ltd
4. Sterling Investment Bank
5. Standard Investment Bank
6. Standard Chartered
7. Prime Bank
8. Paramount Bank
9. Oriental Commercial Bank Ltd.
10. NIC Bank
11. ABC Bank
12. National Bank
13. K-Rep Bank
14. Kenya Post Office Savings Bank
15. KCB Bank
16. Investments & Mortgages Bank Limited – I&M Bank
17. Imperial Bank Limited
18. Housing Finance
19. Guardian Bank Ltd.
20. Giro Commercial Bank Ltd
21. Fina Bank
22. Fidelity Bank
23. Faida Investment Bank – FIB
24. Equity Bank
25. Equatorial Investment Bank
26. Equatorial Commercial Bank Limited
27. Dyer & Blair Investment Bank

28. Dubai Bank Kenya Ltd
29. Dry Associates Limited
30. Development Bank Of Kenya Ltd
31. Co-operative Bank
32. Consolidated Bank
33. Commercial Bank of Africa
34. Citibank N A
35. Chase Bank
36. CFC Stanbic Bank Limited
37. Central Bank of Kenya
38. Bank Of Baroda (Kenya) Ltd.
39. Bank of Africa Kenya Ltd
40. Afrika Investment Bank
41. African Development Bank Group
42. African Banking Corporation

Appendix II Research Authorization Documents



KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke

Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 57530

Our Ref: D53/OL/CTY/32701/2016

DATE: 9th September. 2019

Director General,
National Commission for Science, Technology
and Innovation
P.O. Box 30623-00100
NAIROBI

Dear Sir/Madam,


RE: RESEARCH AUTHORIZATION FOR MUGO HANNAH WANGARI – REG. NO.
D53/OL/CTY/32701/2016.

I write to introduce Mugo Hannah Wangari who is a Postgraduate Student of this University. The student is registered for M.B.A degree programme in the Department of Accounting and Finance.

Mugo intends to conduct research for a M.B.A Project Proposal entitled, “**Prudential Regulations and Financial Performance of Commercial Banks in Kenya**”.

Any assistance given will be highly appreciated.

Yours faithfully,


PROF. ELISHIBA KIMANI
AG. DEAN, GRADUATE SCHOOL

AM/lnn



REPUBLIC OF KENYA

Ref No: 730156



NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Date of Issue: 05/November/2019

RESEARCH LICENSE



This is to Certify that Miss. Hannah Mugo of Kenyatta University, has been licensed to conduct research in Nairobi on the topic: PRUDENTIAL REGULATIONS AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA for the period ending : 05/November/2020.

License No: NACOSTI/P/19/2416

730156

Applicant Identification Number

Director General

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Verification QR Code



NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.