

**EFFECT OF SELECTED FIRM CHARACTERISTICS ON FINANCIAL
PERFORMANCE OF COMMERCIAL BANKS IN KENYA**

By

EVANS JUMA

MASTERS OF SCIENCE (FINANCE AND INVESTMENT)

KCA UNIVERSITY

2021

**EFFECT OF SELECTED FIRM CHARACTERISTICS ON FINANCIAL
PERFORMANCE OF COMMERCIAL BANKS IN KENYA**

By

EVANS JUMA

**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTERS OF
SCIENCE (FINANCE AND INVESTMENT OPTION) IN THE SCHOOL OF
BUSINESS AND PUBLIC MANAGEMENT AT KCA UNIVERSITY**


OCTOBER, 2021

DECLARATION

I declare that this dissertation is my original work and has not been previously published or submitted elsewhere for award of a degree. I also declare that this contains no material written or published by other people except where due reference is made, and author duly acknowledged.

Student Name: **Evans Juma**

Reg. No.: **KCA/09/01537**

Sign: _____  _____

Date: 11.11.2021 _____

I do hereby confirm that I have examined the master's dissertation of

Evans Juma

And have certified that all revisions that the dissertation panel and examiners recommended
have been adequately addressed

Sign: _____ Date: _____

Dr. Christine Nanjala

Dissertation Supervisor

ABSTRACT

Commercial banks operate in a turbulent business environment and this calls for an understanding of their internal and external factors to enable them to increase their financial performance. This study's objective was to examine the influence of selected firm characteristics on financial performance of commercial banks in Kenya. Precisely, the study sought to establish the influence of capital adequacy, board composition, management efficiency and working capital on financial performance of commercial banks in Kenya. The study was anchored on the buffer theory of capital adequacy, agency theory, performance theory and the liquidity-profitability trade-off theory. The study was carried out using a longitudinal design. The 42 commercial banks operating in Kenya by December 2019 were the study population. Secondary data from 2015-2019 was collected from Central Bank of Kenya's yearly banking surveys, and the commercial banks' financial statements. To analyse the collected data, the study applied the panel data regression model. The appropriate diagnostic tests were conducted before and after fitting of the model. The study findings established that capital adequacy had a significant and negative influence on financial performance measured through ROA ($\beta = -0.3186$, $t = -5.43$, $p < 0.05$), but had no significant influence on financial performance measured through ROE ($\beta = 0.4091$, $t = 1.29$, $p = 0.200$). The study also determined that board composition had no significant effect on the financial performance of the commercial banks as indicated by ROA ($\beta = -0.2555$, $t = -0.11$, $p = 0.91$) and ROE ($\beta = -1.64$, $t = -0.13$, $p = 0.893$). Moreover, the study findings determined that management efficiency had a significant and negative influence on financial performance measured through ROA ($\beta = -0.2105$, $t = -11.43$, $p < 0.05$) and ROE ($\beta = -0.9342$, $t = -9.37$, $p < 0.05$). The findings also established that working capital had no significant effect on the financial performance of the commercial banks as indicated by ROA ($\beta = -0.7792$, $t = -1.01$, $p = 0.312$) but had a significant and negative influence on the financial performance of the commercial banks as indicated by ROE ($\beta = -8.3384$, $t = -2.00$, $p = 0.047$). The research offers the following recommendations based on its findings. First, the study recommends to Central bank of Kenya to be vigilant to ensure that the minimum CAR for commercial banks in Kenya is met by all banks. Regarding management efficiency, the study recommends to commercial banks in Kenya to have a suitable and organized policy framework to guarantee financial management efficiency. Lastly, the study recommends to commercial banks to carefully balance their working capital to balance the risk and returns that come from holding liquid assets and current liabilities.

Key words: Capital Adequacy, Management Efficiency, Board Composition, Working capital, financial performance.

ACKNOWLEDGEMENT

First and foremost I am extremely grateful to my supervisor, Dr. Christine Nanjala for her invaluable advice, continuous support, and patience during my research work. Her immense knowledge and plentiful experience has encouraged me in all the time of my academic research and daily life. I would also like to express my gratitude to my entire family. Without their tremendous understanding and encouragement in the research period, it would be impossible for me to complete my study.

TABLE OF CONTENTS

DECLARATION	ii
ABSTRACT	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS	v
LIST OF TABLES	vii
LIST OF FIGURES	viii
ACRONYMS AND ABBREVIATIONS	ix
TERMS AND DEFINITION	x
CHAPTER ONE	1
INTRODUCTION	1
1.1 Background of the Study	1
1.2 Statement of the Problem.....	8
1.3 Objectives of the Study.....	9
1.4 Research Questions	10
1.5. Significance of the Study	10
1.6 Scope of the Study	11
CHAPTER TWO	12
LITERATURE REVIEW	12
2.1 Introduction.....	12
2.2 Theoretical framework.....	12
2.3 Empirical Literature	17
2.4 Summary of Literature Review and Research Gaps	29
2.5 Conceptual Framework.....	30
2.6 Operationalization of Variables	32
CHAPTER THREE	33
RESEARCH METHODOLOGY	33
3.1 Introduction.....	33
3.2 Research Design.....	33
3.3 Target Population.....	33
3.4 Sample Size and Sampling Procedure	33
3.5 Data Collection	34
3.6 Data Analysis Procedure.....	34
3.7 Diagnostic Tests.....	36
CHAPTER FOUR	39
FINDINGS AND DISCUSSION	39
4.1 Introduction.....	39
4.2 Descriptive Statistics.....	39
4.3 Exploratory Analysis of the Study Variables.....	41
4.4 Diagnostic Tests.....	47
4.5 Model Fitting	51
4.6 Discussion of the Findings.....	58
CHAPTER FIVE	62
CONCLUSION AND RECOMMENDATIONS	62
5.1 Introduction.....	62
5.2 Summary of Findings.....	62
5.3 Conclusions.....	65
5.4 Recommendations of the Study	66
5.5 Limitations of the Study.....	67

5.5 Recommendations for Future Research	68
REFERENCES.....	70
APPENDICES	75
Appendix 1: List of Listed Commercial Bank in Kenya	75
Appendix II: Data Collection Sheet.....	76

LIST OF TABLES

TABLE 1 Operationalization of Variables	32
TABLE 2 Descriptive Statistics.....	40
TABLE 3 Multicollinearity Test Using Variance Inflation Factors	48
TABLE 4 Test of Autocorrelation Using Woodridge Test.....	49
TABLE 5 Test of Heteroscedasticity	50
TABLE 6 Test of Normality of Residuals Using Shapiro Wilk	50
TABLE 7 Hausman Test.....	51
TABLE 8 Fixed Effects Model on Return on Assets	52
TABLE 9 POLS Model on Return on Assets	54
TABLE 10 Fixed Effects Model on Return on Equity	55
TABLE 11 POLS Model on Return on Equity	57

LIST OF FIGURES

FIGURE 1 Conceptual Framework	31
FIGURE 2 Panel Data Line Plots for Capital Adequacy	42
FIGURE 3 Panel Data Line Plots for Board Composition	43
FIGURE 4 Panel Data Line Plots for Management Efficiency	44
FIGURE 5 Panel Data Line Plots for Working Capital	45
FIGURE 6 Panel Data Overlain Plots for Return on Assets.....	46
FIGURE 7 Panel Data Overlain Plots for Return on Equity	47

ACRONYMS AND ABBREVIATIONS

CAMEL	Capital adequacy, Asset quality, Management efficiency, Earnings and Liquidity
CBK	Central bank of Kenya
CIR	Capital Adequacy Ratio
COVID-19	Corona Virus Disease 2019
KCB	Kenya Commercial Bank
NSE	Nairobi Securities Exchange
ROA	Return on Assets
ROE	Return on equity
ROI	Return on investment
SPSS	Statistical Package for Social Sciences
US	United States
VIF	Variance Inflation Factor
WCM	Working capital management

TERMS AND DEFINITION

Capital Adequacy - The quantity of capital invested to create a dollar of production (Shaheen & Malik, 2012).

Composition of the board - The mix of executive and non-executive members of the board (Ongore, et al., 2015).

Financial Performance - Subjective measure of how successfully a company can utilise assets from its principal method of operation to create income (Gartenberg, Prat & Serafeim, 2019).

Firm factors - Both managerial and demographic characteristics that encompass a firm's internal operating environment (Banerjee & Majumdar, 2018)

Management efficiency - Managers with high integrity, professional competence, and service quality, which can result in consistent profit for commercial banks (Muhmad & Hashim, 2015).

Working capital management - The liquidity management of the commercial banks shown as the ratio of current assets to their current liabilities (Hampton & Wagner, 1989).

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Commercial banks operate in a turbulent business environment and this calls for an understanding of their internal and external factors to enable them to increase their financial performance (Thumbi & Ragui, 2019). The increasing uncertainty and turbulence in the banking environment have forced commercial banks to abandon certain of their structures and strategies in order to remain profitable, while adequately meeting the demands of their stakeholders. According to Ejim (2021), of commercial banks' financial performance has steadily deteriorated over time due to various internal and external factors. Consequently, there is a growing interest among academics and business analysts in determining which specific firm attributes influence commercial banks' financial performance (Sarkar & Rakshit, 2021).

According to Ullah, Pinglu, Ullah, Zaman and Hashmi (2020), various regulatory authorities globally have tightened their prudential guidelines to counter the poor performance, and failure in the banking sector. Managers of commercial banks, on the other hand, have been tasked with guaranteeing that their banks are well-positioned within the financial industry to remain competitive. Since the external environment is similar for commercial banks operating in a certain jurisdiction, managers of commercial banks must capitalize on their bank's internal strengths, allowing them to obtain optimal returns by overcoming internal flaws as well as external threats. Almaqtari et al. (2019) observe that the focus on factors influencing commercial banks' financial performance has gained prominence due to the collapse and placement under receivership of various banks globally, and the resultant adverse effects on the global, regional and local economies.

In the United States (US), though only about 5% of banks nationwide were unprofitable, those that reported a reduction in their profitability were 53%. The reduced profitability of

commercial banks in US over time is due to increasing competition for financial technology firms, volatile operating and legislative environment (Gara, 2021). Internal factors that have been indicated to influence commercial banks' financial performance in US include capital adequacy, liquidity, and overhead expense management. In Europe there have been various bank failures and bankruptcies in the past 20 years and Antoun et al. (2018) indicates that key internal factors influencing of commercial banks' financial performance in the region include capital adequacy, asset quality, and liquidity. In India key internal characteristics that influence commercial banks' financial performance include asset quality, bank size, liquidity, capital adequacy, leverage, and operating efficiency (Ranjee, 2018). Major factors influencing commercial banks' financial performance in Bangladesh include liquidity, governance by the board and capitalization (Kamarudin et al., 2016). Moreover, Robin et al. (2018) indicates that capital adequacy and asset quality were the key internal factors influencing commercial banks' financial performance in Bangladesh.

In Nigeria, commercial banks' financial performance is influenced by management efficiency, liquidity, and capital adequacy (Ebenezer et al., 2017). In Zimbabwe, Abel et al. (2016) indicated that management efficiency, asset composition, liquidity risk, credit risk, and oversight by the board were vital aspects that influenced profitability of commercial banks. Besides, Aluko and Ajayi (2018) observes that liquidity management, the board of directors' oversight over corporate governance, capitalization, and management efficiency are the key internal factors influencing commercial banks' financial performance in Sub Saharan Africa.

The Kenyan commercial banking sector with over 40 commercial banks has experienced mixed success over the past 10 years with some banks such as Kenya Commercial Bank, Standard Chartered bank, Co-operative Bank, and Equity Bank, reporting high financial performance while other banks such as Kingdom Bank, Bank of Africa, National Bank of Kenya, and Ecobank among others reporting poor financial results (CBK, 2017). This has

heightened the focus on the internal factors that drive financial performance in the sector. Marwa (2018) indicated that financial technology, governance by the board of directors, risk management, cost management, and management efficiency were the key factor influencing commercial banks' financial performance in Kenya. This study sought to assess the influence of selected firm characteristics on commercial banks' financial performance in Kenya.

1.1.1 Firm characteristics

Firm characteristics are both managerial, financial and demographic characteristics that encompass a firm's internal operating environment. These include both financial and non-financial characteristics. According to Banerjee and Majumdar (2018), over the last few decades, scholars and analysts have paid close attention to the analysis of firm-specific features as the intense competition facing firms today has resulted in them drifting towards restructuring and re-evaluating their strategies in order to dominate markets, improve the efficiency of the organization, growth in size, and improve their financial performance. By implementing such techniques, a company can easily increase its market share while decreasing its operational expenses.

Capone (2012) indicated firm internal characteristics to include bank ownership, bank size, application of information technology, labour productivity, capitalization, credit portfolio, and state of information technology, risk management, and the quality of the management, among others. In this study, the following financial and non-financial factors will be investigated as independent variables: capital adequacy, board composition, management efficiency, and working capital (Banerjee & Majumdar, 2018). These financial and nonfinancial characteristics were selected since they have been indicated to be vital in various empirical studies such as Chukwu and Egbuhuzor (2017), Marwa (2018), Almaqtari et al. (2019) and Ejim (2021).

The quantity of capital invested to create a dollar of production is the capital adequacy (Shaheen & Malik, 2012). The more capital is necessary for the production of similar output, the higher the capital adequacy of the organization. Managers need to select an appropriate form of funding, in order to enhance both their market share, market value, and to increase the business capital adequacy (Chukwu & Egbuhuzor, 2017). Companies seek to raise their capital and thus improve performance, but the appropriate way of raising capital is vital since some sources can be counterproductive and have an adverse effect on financial performance (GRM & Yogendrarajah, 2013). Capital adequacy is measured through the capital adequacy ratio which is the total equity divided by the risk weighted assets of the organization.

Another important feature of a corporation considered a vital element in the management process is the composition of the board. The size of the board, the mix of nonexecutive and executive members, and other aspects such as gender diversity are all considered as board composition indicators (Ongore, et al., 2015). Board composition can relate to the size of the board, the number of independent directors, diversity of the board in terms of age, education, experience and gender (CBK, 2016). The board composition in this study will be assessed using the gender composition (ratio of female to the board size).

Management efficiency refers to managers with high integrity, professional competence, and service quality, which can result in consistent profit for commercial banks (Muhmad & Hashim, 2015). Although management efficiency is usually expressed qualitatively, financial ratios can be used to analyse it as a proxy for aspects such as resource efficiency, income maximization, and reduced operating expenses (Sangmi & Nazir, 2010). According to Mohiuddin (2014), the operational profit to total income (revenue) ratio is a major statistic that reflects management's income output, as is the ratio of operating expenses to total asset, which is anticipated to have a negative impact on bank profitability. The ratio, according to Sufian and Kamarudin (2012), can provide information on a bank's non-interest expenses

such as the number of employees and salary, as well as the cost of maintaining branch and office facilities. Reduced expenses show effective management and tend to increase firm profitability.

The relationship between current assets of a corporation and the current obligations is called working capital. Working capital management (WCM), which affects liquidity and corporate performance through short-term liabilities and assets, is an important part of financing. Current assets represent a huge proportion of a corporation's assets. Companies with few current assets, on the other hand, may have limits and difficulties running their operations smoothly. Retention of sufficient working capital is vital for the earnings and liquidity of a company (Hampton & Wagner, 1989). Commercial banks should have a policy on working capital prioritizing short-term asset funding sources, while guaranteeing optimum current asset investment.

1.1.2 Financial performance

Financial performance is an independent evaluation of how successfully a company can utilise assets from its principal method of operation to create income. Financial performance is also an indicator of a company's inclusive financial health over a specific time (Gartenberg, Prat & Serafeim, 2019). Typically, financial performance is thought to include three important aspects of business outcomes: market performance, profitability, and return to shareholders. Consequently, financial performance is viewed as the key basis upon which an organization may analyze how well it is advancing toward its planned objectives, identify areas of weaknesses and strength, and plan on future efforts aimed at beginning performance improvement (Shin & Konrad, 2017).

The three common indices used to evaluate financial performance are return on investment (ROI), return on equity (ROE) and return on assets (ROA) (Singh, Darwish &

Potocnik, 2016). However, other traditional measures of financial performance, such as sales revenue and net profit, can also be used to assess financial performance. Mishkin (2004) identified three good financial performance measurements which are ROA, ROE and net interest margin (NIM). ROA is the ratio of the net revenue of a bank to the total assets. ROE is the ratio of net income to total shareholder funds. NIM is the ratio of the difference of total interest revenue to interest expenses, divided by the total value of assets.

1.1.3 Firm characteristics and financial performance

Firm characteristics are the fundamental distinguishing aspects of a firm that aid in distinguishing one firm from another. As a result, firm-specific characteristics tend to influence an organization's competitiveness and overall financial performance results (Ullah et al., 2020). Bank characteristics are recognized by Anachoni and Jagongo (2020) as one of the major determinants impacting bank profitability. There are various characteristics of a company, organization or bank that could influence its financial performance such as its size, diversity of its corporate governance systems, liquidity, leverage, age, experience and efficiency of its management among others (Simionescu et al., 2021).

Robin et al. (2018) also suggest that the corporate governance and ownership of a bank have a significant impact on its success. Moreover, liquidity, according to Sarkar and Rakshit (2021), is likely to impact bank performance, implying that as banks optimize their liquidity management, their profitability increases. One critical aspect influencing performance of commercial banks is capital adequacy (Aluko & Ajayi, 2018). Large commercial banks are well capitalized and have significant assets, allowing them to seize opportunities as they emerge, a condition that may not be obvious in smaller commercial banks (Muhindi & Ngaba, 2018).

Another major aspect affecting the financial performance of a commercial bank is management efficiency. The competence of management would significantly influence the financial success of a bank (Martin & Shalev, 2017). Liquidity is another characteristic that influenced financial performance. A company with high liquidity invests in investment options, takes advantage of cash discounts, and lower interest rates. This allows the company to expand and enhance its operations (Muhindi & Ngaba, 2018). Besides, the composition of the board in regard to gender diversity, ratio of independent directors to board size and technical diversity of the board could influence profitability (O'Neill, Sohal, & Teng, 2016).

1.1.4 Commercial banks in Kenya

Kenya has 42 commercial banks with three publicly controlled institutions, 15 with more than 50% foreign ownership and 24 locally controlled institutions (CBK, 2019). Commercial banks in Kenya are regulated and licensed in accordance with the stipulations in the Banking Act, as well as the associated Prudential and Regulatory Guidelines. Besides, commercial banks are subject to regulatory oversight that governs their prudential status and market conduct in order to safeguard the financial system's overall stability and soundness. Central Bank of Kenya is the major regulatory authority for the commercial banking sector in Kenya.

Commercial banks operating in Kenya have experienced mixed financial success over the past five years with some like Equity Group Holdings, Absa Bank Kenya, KCB Group, Stanbic Holdings, and Co-operative Bank of Kenya reporting above average profitability while others such as Housing Finance Group, Kingdom Bank, UBA Bank, Bank of Africa and National Bank of Kenya have reported poor financial results (NSE, 2019). The banking sector has also experienced fall of the two banks, where many investors lost their investment in the banks since their financial soundness had been undermined and the banks were no longer in a

strong position to pay them (Olawajaju, 2016). Given the current turbulent business environment in the Kenyan banking sector, it is vital to recognize the firm characteristics that influence financial performance so as to inform policymakers and management of the commercial banks.

1.2 Statement of the Problem

The financial sector and specifically the commercial banks are critical in the economy as they enable capital accumulation, savings mobilization, availing of funds, and industry financing (Almaqtari et al., 2019). Therefore, financial performance of individual commercial banks in the sector is essential since it may affect the stability of the sector and the economy as a whole. This is why commercial banks' financial performance has historically received a great deal of attention, remarks, and interest from corporate financial professionals, scholars, and researchers all around the world (Sarkar & Rakshit, 2021). When commercial banks are profitable, this enhances the stability of the financial sector which can drive economic growth.

Commercial banks in Kenya have experienced mixed financial success with some like Co-operative Bank, Equity Bank, and Kenya Commercial Bank have claimed a good growth in profits, whereas other banks, including the Chase Bank, Dubai Bank, Imperial Bank and National Bank of Kenya, have either recorded a decrease in profitability, receivership or bankruptcy (CBK, 2019). In some banks, the board oversight, management and liquidity crises, such as the cases of Chase Bank and Imperial Bank, have resulted to the banks being placed under receivership (Ifionu & Keremah, 2016). Given the competition and the turbulence of the operating environment of commercial banks in Kenya, the knowledge of the firm characteristics that influence commercial banks' financial performance is vital.

There had been several studies to explore how firm factors influence corporate financial performance, which have left several knowledge gaps which this study sought to fill. Antoun

et al. (2018) examined the key internal factors influencing commercial banks' financial performance in the region and established that capital adequacy, asset quality, and liquidity were the key factors. This study left contextual gaps since it was conducted in a different context to the Kenyan commercial banking sector and hence the findings might not be readily applicable to the commercial banks in Kenya. Ranajee (2018) determined that internal characteristics that influence commercial banks' financial performance in India include asset quality, bank size, liquidity, capital adequacy, leverage, and operating efficiency. This study left some conceptual gaps as it did not cover board composition which is a vital factor. Abel et al. (2016) conducted a study in Zimbabwe and established that management efficiency, liquidity, and oversight by the board influenced profitability of commercial banks. This study left some conceptual gaps as it did not include capital adequacy which will be included in the current study. In Kenya, Marwa (2018) indicated that cost management, management efficiency, governance, financial technology and risk management were the key factors influencing commercial banks' financial performance in Kenya, and left some conceptual gaps as it did not include capital adequacy and liquidity. The current study intended to delve on the subject further by investigating the impact of selected firm characteristics on the financial performance of commercial banks in Kenya.

1.3 Objectives of the Study

1.3.1 General objective

To examine the effect of selected firm factors on financial performance of commercial banks in Kenya

1.3.2 Specific objectives

- i. To establish the influence of capital adequacy on financial performance of commercial banks in Kenya.

- ii. To ascertain the influence of board composition on financial performance of commercial banks in Kenya.
- iii. To investigate the influence of management efficiency on financial performance of commercial banks in Kenya.
- iv. To examine the influence of working capital on financial performance of commercial banks in Kenya.

1.4 Research Questions

- i). What is the effect of capital adequacy on financial performance of commercial banks in Kenya?
- ii). What is the influence of board composition on financial performance of commercial banks in Kenya?
- iii). What is the influence of management efficiency on financial performance of commercial banks in Kenya?
- iv). What is the influence of working capital on financial performance of commercial banks in Kenya?

1.5. Significance of the Study

1.5.1 The government

The findings of this study will be very of value to the government as they will enable the Government to determine the internal firm factors that are essential for performance of commercial banks. This will inform their policymaking on these factors as their role is to ensure that every bank in the country performs financially. Besides, the government's policymaking organs can also use the results of the study to draft essential laws and regulations to improve the financial robustness of banks in the country.

1.5.2 Commercial banks

The results of this research might also greatly benefit commercial banks in the country as they can understand the importance of corporate components that could boost their financial performance.

1.5.3 Scholars

Future researchers who may be interested in further research on this topic may benefit greatly from the findings of this study, because they can use the studies as a basis for reference, particularly in empirical assessments. In addition, the study is particularly relevant to researchers as it expands on the concept of financial well-being that in Kenya was never previously addressed.

1.6 Scope of the Study

The overarching goal of this study was to examine the impact of chosen firm characteristics on the financial performance of commercial banks operating the Kenya. The study made use of secondary data from all 42 Kenyan commercial banks. The investigation was completed between July and August 2021 in order to reach an appropriate conclusion and provide conclusive suggestions. In a span of five years from 2015 to 2019, the data was collected to provide a panel data set of 210 observations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter discusses the review of empirical and theoretical literature relating to the effects of certain firm specific characteristics on commercial banks' financial performance. The theoretical review is based on four main theories (buffer theory of capital adequacy, agency theory, performance theory and liquidity – profitability trade-off theory) which are used to anchor the study. Moreover, the chapter provides the empirical studies that relate to the current study's objectives and discusses the gaps that exists in literature which the current study sought to fill. Finally, the conceptual framework and operationalization of the variables are provided.

2.2 Theoretical framework

A theory is usually seen as an abstract generalization that ties one variable to another. The theories discussed hereunder provide a thorough insight into the general explanations of the study objectives for the study's purpose.

2.2.1 Buffer theory of capital adequacy

Calem and Rob (1996) developed the Buffer theory of capital adequacy whose key proposition is that commercial banks have incentives to increase their capital, and reduce risks to attain the minimum regulatory capital ratio. Besides, commercial banks are incentivised to buffer their capital to prevent regulatory sanction in connection with a capital requirement breach and enhance their performance through reduction of cost of capital. Calem and Rob (1996) further suggest that when banks consider that they face market risk, they often utilize buffer capital to limit the chances that regulating authorities will sanction them as operating illegally without the permitted capital requirement. Poorly capitalized banks, on the other hand,

can face higher risks and cost of capital which can be detrimental for their performance (Allen, McAleer, Powell & Singh, 2016).

In some cases, corporations choose to hold their capital way above minimum requirements so that they do not fall prey to minimum capital requirements, which could cause substantial financial strain, especially when they operate with a fluctuating capital ratio, also known as a buffer (Allen et al., 2016). Capital requirements are a key factor in determining the riskiness of the bank which has an effect on the cost of capital of a bank. Having buffer capital therefore ensures that commercial banks keep their capital always above the minimum regulatory requirement to cater for the short term and also for any long-term unforeseen circumstances (Lotto, 2016).

Critics of this idea contend that, while increasing the capital buffer reduces the likelihood of a bank's failure, it raises its operational costs and thus negatively affects its financial performance (Allen et al., 2016). This theory will be applied in this study to link capital adequacy with financial performance of commercial banks. When a commercial bank maintains a certain optimum level of buffer capital, it is expected to reduce its risks and operational costs and this may positively influence the organizational performance of the entity. However, when the commercial bank fails to have the right capital buffer, it may face risks of going below the minimum regulatory capital which may increase its risks, operational costs and thus have an adverse effect on financial performance.

2.2.2 Agency theory

The agency theory whose proponents are Jensen and Meckling (1976) hypothesizes that agency conflicts arise because in contemporary business and corporations, the ownership of the entity is separated from its management and control. The theory's key tenet, according to Johar and Ali (2011), is that because managers (agents) are hired by shareholders (principals)

to run the company on a daily basis, they have more information about it, resulting in information asymmetry. Further, Mohan and Chandramohan (2018), further posit that theory claims that because the owners of the organization have less awareness of its operations than management, managers get an expanded leeway to involve in self-serving activity. The implication of this is that management may pursue investments, interests and aims that are not always aligned with those of shareholders. As a result, shareholders must either spend money punishing and monitoring management or lose money when managers engage in self-serving activity.

Shareholder agency expenses for disciplining and monitoring managers are necessary to improve management efficiency and productivity. One of the most essential instruments applied by shareholders to control managers is the board of directors (Mohan & Chandramohan, 2018). Shareholders elect the board members with their primary job being guaranteeing the interest of other stakeholders and chiefly, the shareholders, by ensuring the sustainability and long term viability of the organization. They do this by overseeing and supervising the management in the day to day running of the corporation. As a result, the board guarantees that the interests of shareholders take precedence over the interest of the management by applying the organization's resources towards maximizing the shareholder value (Kandukuri et al., 2015).

The study used the agency theory to link commercial banks' financial performance with board composition. According to the theory, an organization with an effectively composed board of directors will outperform its peers with a less effectively composed board of directors. The theory has been supported by various empirical studies, such as Ali (2016), which found that corporate financial performance is improved by effective board composition which reduces agency problems.

2.2.3 Performance theory

Campbell, McCloy, Oppler, and Sager (1993) developed the performance theory which proposes that management efficiency creates an atmosphere conducive to increased production and financial performance. According to the theory, effective management allows for specialization and division of labor, which affects employee productivity and, as a result, the overall financial success of the company. Sonnentag and Frese (2005) backed up this theory by claiming that having innovative and knowledgeable management creates clear lines of accountability. This clarifies the organization's authority structure and reporting connections.

Several research, notably Tinggi et al. (2019) and Kamau et al. (2018), have validated this theory by linking management efficiency to financial performance. Elger (2006) also points out that when an organization's management is efficient, employees will be able to comprehend their duties within the broader company as a result of this. Similarly, Campbell et al. (1993) stated that an effective management guarantees effective allocation of resources, management of expenses and risks. This improves individual and unit performance, which in turn improves the overall financial performance of the company.

The theory was used in this study to relate management efficiency to commercial bank performance in Kenya in this research. When employees efficiently manage the operations and processes of the organization, they are able to enhance efficiency by reducing costs of operations and service provision (Elger, 2006). This in turn enables the organization to provide services at lower costs and hence enhancing margins and financial performance. Furthermore, efficiency allows the managers in charge to invest the limited resources to profitable ventures which could enhance financial performance.

2.2.4 Liquidity–profitability trade-off theory

Garcia and Martinez (2007) developed the liquidity–profitability trade-off theory which regards profitability and liquidity as two financial aspects at opposite extremes of a continuum, where shifting in one direction necessarily involves shifting in the other. To put it another way, the two are in a circumstance where they have to make a choice. According to Pourali and Arasteh (2013), the trade-off theory stresses that companies try to strike a balance between their profitability and the cost of keeping liquid assets in order to preserve an optimum level of liquidity. They emphasized that corporations determine the appropriate working capital level by harmonizing the costs of maintaining it with the revenues produced from it. The theory highlights that a continual trade-off between profitability and liquidity must be made.

According to the profitability and liquidity trade-off hypothesis, the costs of maintaining large levels of working capital include the low yield generated by liquid current because of liquidity premium, as well as potential tax penalties. The advantages of maintaining large levels of working capital, on the other hand, are that companies save on exchange costs because when raising resources to settle their obligations, they do not incur additional costs. Furthermore, Orshi (2016) observes that, if alternative sources of funding are restricted, businesses might use liquid resources to support their projects. The profitability and liquidity trade-off hypothesis, further indicates that companies with little working capital incur significant costs in repaying their short-term commitments, putting their financial survival at risk. As a result, obtaining alternative sources of funding becomes too expensive for such businesses (Salaju & Kumar, 2012).

In this study, the liquidity–profitability trade-off theory was used to relate working capital to commercial bank financial performance. the expectation or hypothesis is that commercial banks with the right amount of working capital will be able to have an optimum balance between profitability and liquidity, and so improve their financial performance.

Commercial banks, on the other hand, will suffer financial performance consequences if they have too much or too little working capital. Therefore, having optimum liquidity is key to operational and financial performance of commercial banks.

2.3 Empirical Literature

The review of existing empirical literature relating to effect of certain firm factors on financial performance of organizations is provided in this section. The firm factors considered are capital adequacy, board composition, management efficiency and working capital and how they influence on financial performance. The context of the studies, the methodology applied and their scope is provided to enable a determination of key knowledge, conceptual, contextual and methodological gaps left in the studies which justified the current study.

2.3.1 Capital adequacy and financial performance

The influence of capital adequacy on the success of restaurant businesses in the United States at global level was examined by Lee (2016). The study used the Tobin-Q as the dependent variable to assess the influence of capital adequacy on the value of businesses using regression analysis. The study examined the proposed research problem using two sources: 1) the COMPUSTAT database on the financial information required for sampled restaurant companies, such as total assets, sales, and inventory prices; and 2) the annual capital adequacy of the restaurants in the United States Bureau for labor statistics. The study determined that Tobin's Q is associated with all the variables in a statistically significant way. Tobin Q has a significant but weak association with capital adequacy ($r = 0.13$).

In Pakistan, Ahmed and Afza (2019) conducted a study on the link between capital structure, corporate performance and competitive adequacy. The Panel and OLS study estimates provided findings based on balanced panel data from non-financial corporations registered in Pakistan. The findings showed that a high debt ratio is prejudicial to Pakistan's

accounting performance. Moreover, the competition had an adverse moderating effect, implying that capital adequacy can be used to harmonize the interests of management and shareholders in the company to enhance financial performance.

Research on the effect of capital adequacy on financial performance of listed oil and gas companies in Nigeria was conducted by Nangih and Onuora (2020). This study was based on the ex-facto research design. Nine (9) publicly traded oil and gas firms were selectively selected. The data was collected for five years (2014 to 2018). In order to analyze relationships between study variables the study applied the random effects regression model. The findings indicated a large positive impact of capital adequacy on the profit margin. As a result, it was argued that enterprises with higher capital adequacy outperformed those with lower capital adequacy. Consequently, it was suggested that oil and gas companies should strive for optimal capital adequacy, which will assure increased firm performance.

In Egypt, Mahrous, Genedy and Kalliny (2020), investigated the influence of intra-organizational environmental factors on entrepreneurship and performance. The information used for the study was collected from major companies domiciled in Egypt. The study examined the gathered data through path analysis using Smart-PLS. findings from the study showed that capital adequacy, effective planning and institutional backing are intra-organizational elements that facilitate the construction, growth and financial performance in major firms in emerging economies. The study, further, determined that capital adequacy had a positive association with organizational performance and competitive advantage.

Oeta, Kiai, and Muchiri Locally (2019) conducted a survey examining NSE manufacturing companies' capital adequacy and financial performance. The study utilized an explanatory research design and followed the positivist research philosophy. The analysis included all nine manufacturing firms listed in the NSE. Panel data was used to generate the inferential and descriptive statistics in the study with the aid of SPSS version 23. The study

findings suggests that the adequacy of capital has a positive but insignificant association with financial performance. As a result, the financial performance of Nairobi Securities Exchange manufacturing companies does not affect capital adequacy. In order to profit from capital allowances and improve their financial performance, the study determined that organizations should improve their investments in capital equipment through shareholder's equity.

The effect of capital adequacy on the financial performance of NSE-listed companies in the manufacturing sector was explored by Oeta, Kiai and Muchiri (2019). Positivism was the concept of research in the study and explanatory design was applied. The data analysis comprising both inferential and descriptive statistics was conducted with the aid of SPSS. The association between the study factors was investigated using a multivariate linear regression model using the panel data collected. The analysis found that financial performance of manufacturing businesses listed in NSE did not have a significant association with capital adequacy. The statistics demonstrated a positive yet statistically insignificant link between financial performance, capital adequacy, R&D expenditure and the company size.

2.3.2 Board composition and financial performance

A study was carried out by Naseem, Xiaoming, Riaz and Rehman (2017) to assess how financial performance of Pakistan Stock Exchange-listed enterprises was influenced by board characteristics. From 2009 through 2015, annual data were collected from selected companies. There were 1074 firm observations for the study period. Data on attributes and financial performance of selected firms were gathered from audited annual reports and State Bank of Pakistan's publications. After an analysis of the study variables, the panel regression showed that firm financial performance was positively related to the audit committee's independence. However, the board's independence and the gender diversity had an inverse relationship with financial success. On the contrary, board meetings had no effect on financial performance.

Alabdullah (2018) in the Jordanian study evaluated the link between board composition and business performance. During fiscal year 2012, an assessment of information accessible to non-financial enterprises on the Amman Bourse was conducted using multiple regression methods. According to data, the ratio of executive members in the board has a beneficial impact on firm performance. The analyses showed, surprisingly, no evidence that foreign ownership influences performance. In addition, the claim that company size has little influence on firm performance is substantially supported. The research has shown also that business success is influenced by the type of industry.

Research in Tanzania on financial performance of Tanzanian companies is influenced by board features was undertaken by Assenga, Aly and Hussainey in 2018. The board features of the Tanzania set were assessed, including external managers, gender diversity, CEO duality, board competence, international directors and board size. The study comprised an analysis of balanced regression of the panel data based on 80 observations made in the annual reports (2006-2013) and semi-structured interviews with 12 major stakeholders. The study included both quantitative and qualitative data in a mixed method approach. The data support the division of the duties of CEO/Chairperson, according to agency theory, but do not promote the association between foreign director and financial achievement. Financial performance is positively influenced by gender diversity, as indicated by the study findings and as hypothesized by the resource dependency theory.

The effect of corporate governance frameworks on corporate financial performance was explored by Dzingai and Fakoya (2017). The study applied a selected Johannesburg Stock Exchange (JSE), Social Responsibility Investing (SRI) Index-listed Mining companies and gathered secondary data from sustainability reporting and integrated yearly financial statements. For the period 2010 – 2015, a panel analysis of random effects models has been used to establish a linkage between the size of the board, board independence and ROE. The

study findings demonstrate a moderate negative connection between board size and ROE and a minor but positive link between the independence of the board and ROE. Moreover, the connection between ROE and sales growth is positive though weak, but the link between ROE and company size is negative and weak. The study shows that excellent mechanisms of corporate governance through efficient management board, a small board, and independent supervision leads to greater financial performance for companies.

Ottani (2018) explored the moderating effects of the membership of the Board on drivers of the performance of NSE firms. This study adopted a mixed strategy of research with qualitative and quantitative parts. A random stratified selection and purposefully selected sample of 59 companies was selected where 69 firms listed in the NSE were target population of the study. In description and inferential statistics, data have been evaluated using traditional statistical procedures like the social science statistical program was utilized for the entire analysis (SPSS Version 24). The study findings determined that board size, board gender diversity, board technical diversity and board independence influenced the financial performance of the company considerably.

The impact on the profitability of Kenyan commercial banks of the board composition was examined by Muiruri (2018). The study adopted a descriptive research design. Kenya's 42 business banks were the focus of this investigation. Secondary data were utilized from commercial banks (2011-2015), with five years of data. This was collected from the published bank accounts, websites, NSE and CBK surveillance reports of the companies. This information. In the current study, the analysis used the normal lower-square regression and Stata version 24 used statistical software. The study findings showed that gender and board diversity have a significant negative influence on the financial performance of commercial banks. The results of the study also showed the considerably beneficial effect of board technical diversity on Kenyan commercial banks' profitability.

Slama et al. (2019) undertook research with the goal of assessing the relationship between company performance and board gender diversity in France's enabling and voluntary institutional contexts. The study estimated the dose-response function using a Quantile difference-in-differences method. The study results indicated that the French code's compliance-or-explain advice is likely to reduce performance for underperforming businesses. In high-performing companies, however, company performance improves beyond the enabling date.

Manyaga et al. (2020) in their research on commercial banks noted that institutions are governed by boards of directors who have been given power to improve corporate governance by the firm's owners. The businesses are managed by the board of directors on behalf of the owners. Despite the CBK's regulatory efforts, the Kenyan banking sector have previously experienced failure of 40 commercial banks. The study documented that the collapse of three commercial banks was the most recent collapse which occurred in 2015 and 2016. These banks collapsed with huge shareholder and customer investments which sparked fear in the industry. The study observed that the impact of gender diversity of the board on commercial bank profitability in Kenya is fascinating. The study population consisted of 43 commercial banking entities in Kenya as of December 31, 2017. For the years 2008 to 2017, the research gathered secondary data from 34 commercial banks on ROE and gender diversity of the board. Panel data was gathered through the internet and a review of each commercial bank's annual reports. The research used a causal research design. The research applied the fixed effect regression model exploratory and descriptive statistics to analyze the data. Gender diversity in board membership has a detrimental but significant effect on return on equity for peers and for the industry as a whole. However, the effect of board gender diversity on ROE was insignificant. A favorable and significant variation in return on equity over time, among peers, and over time within banks was shown with respect to board gender diversity. Board gender diversity may

lead to lower return on equity (ROE) over a longer period of time, for peers, and for a wider range of organizations. A favorable and significant variation in the return on equity, and among peers, and across different banks, occurred over time for boards with more gender diversity. The study showed that gender diversity on a corporate board reduces the return on equity for commercial banks in Kenya, but it does have a significant effect.

To find out whether board gender diversity has an effect on company financial and accounting performance over a 12-year period, Simionescu et al. (2021) studied the market-based and firms in the information technology sector. Results of the pooled ordinary least squares (OLS) indicated that for the measurements of company performance, including return on assets, the effect of women on corporate boards is positive, with the exception of the percentage of female CEOs (ROA). After modelling the fixed effects and random effects using panel data, the econometric findings show no statistically significant relationship between board gender diversity and ROA.

2.3.3 Management efficiency and financial performance

Research on efficiency in quality management and its impact on corporate financial performance was carried out in Australia by O'Neill, Sohal and Teng in 2016. The study utilizes the longitudinal data obtained during a four-year period from 1995 to 1998 by the Australian Bureau of Statistics' Growth and Performance Survey. We demonstrate that the focus on quality management by a company offers a statistically significant financial (and thus a survival benefit) advantage over SAMFs which do not participate in quality management. The research considerably adds to the literature on quality-financial performance and prepares the way for two new financial (productivity) ratios as indicators of performance.

Habib and Hasan (2017) have undertaken a study project in Pakistan on the effect of management skills on corporate investment efficiency. Using a measure of management

capacity, the study indicated that, even after monitoring the impact of financial reporting quality and other business-specific criteria for investment efficient, more capable managers are overinvesting than less capable counterpart companies. This conclusion resists alternative proxies for investment efficiency. Empirical evidence also shows that crash risk is rising, mostly because of inefficient investment, for companies with capable management. The study adds, on the basis of divergence of opinions on manager-specific effects on organizational results, to a deeper understanding of the implications of management skills on investment decisions in investment.

A study on influence of management efficiency as a driver for hotel profitability was examined by Aissa and Goaid (2016) in Tunisia. The study analyzes hotel profits with financial data collected from 27 Tunisian hotel operators. Use Data Enhancement (DEA) and Asset Return (ROA), when geographical and operating contracts are held constant, managerial efficiency is found to be crucial. Regardless, these two factors have significant ramifications for hotel profitability. The size of the hotel, its amount of indebtedness, its exposure to crisis events, and the quality of education of its managers all play a role. The consequences for hotel management tenure and ideal age are examined.

A study was carried out on impact of management and organizational performance on the performance of small and medium sized companies in Nigeria by Ogunyomi and Bruning (2016). The hypotheses were evaluated with 236 respondents in a survey design. The direct link between development of human capital, occupational health and safety and NONFIN and the management of employee performance and the NONFIN on FIN performance were revealed by several regression analyses. As a group, HRM practices represented 16 percent of the NONFIN variation and 12 percent of FIN variation. In regression models, the size and the age of the company have been changed. This study shows that the relationship between specific HRM practices and business success is beneficial.

Local research was undertaken by Barus, Muturi, Kibati and Koima (2017) on the financial performance of Kenya's savings and credit organizations in relation to managerial efficiency. The study employed an explanatory study design. 83 registered SACCOs from Kenya that existed during the past five years, were the target audience. The sample size of the study included all 83 SACCOs operating from 2011 to 2015. The study used the technique of the census. Data was acquired from primary and secondary sources. The evaluation of data with the use of statistical software for the social sciences (SPSS) and STATA has been based on several linear regression models. Data demonstrate that Kenya's savings and credit companies' administrative efficiency has no substantial financial performance effect. Management efficiency does not affect the financial performance of saving and credit institutions according to univariate results of regression.

Bonface, Malenya, and Musiega (2015) conducted research on the effect of management competence on the performance of Kenyan investment banks and compared it to pre-acquisition performance. The study involved 287 Old Mutual staff and bank management, as well as top management from the 80 Faulu Kenya microfinance bank, and the research design was descriptive. A stratified selection approach was utilized to select a 286-person sample and a questionnaire was employed for collecting primary data, which was administered by the researchers. In order to analyze the associations between the variables, the study used multiple correlation and chi-square. The results demonstrated a statistically significant positive link between managerial expertise and investment bank performance in Kenya ($r=0.702$; $p=0.05$).

According to the research published by Ikapel et al. (2019), commercial banks are crucial in the advancement of a country's economic development as the entities that facilitate the transfer of money from surplus economic sectors to deficit economic sectors. In an effort to prevent financial system instability and the development of the economy, these institutions

execute their intermediary function in an efficient manner. They conducted this study to find out whether Kenyan commercial banks' financial management efficiency has an effect on their financial performance. The study dealt with Nairobi Stock Exchange-listed commercial banks from 2006 to 2017. The study's dependent variable was financial performance, as assessed by return on equity and return on assets. Financial management efficiency, as measured by financial leverage, liquidity, capital adequacy, and market capitalization, was used as a predictor variable. Intermediation efficiency is influenced by industry-specific, bank-specific, and macroeconomic variables, which affects bank performance and efficiency. The descriptive research approach was used in this study, which included collecting and analyzing both primary and secondary data in order to infer the connection between the variables under examination. The SPSS program was used for the statistical analyses. The study found a strong and positive link between profitability at commercial banks, as assessed by return on assets (ROA) and return on equity (ROE), and success in the capital markets. The findings reject the null hypothesis that there is no relationship between commercial bank financial performance and financial management efficiency in Kenya.

2.3.4 Working capital and financial performance

The study by Lyngstadas and Berg (2016) in Norway was done to evaluate whether the profitability of small and medium-sized Norwegian companies is affected by working capital management (WCM). The data set used comprised 21,075 SMEs in Norway and 84,3000 observations from 2010 to 2013. Fixed effect panel data regressions were performed, and an analysis of a two-stage minimum square for endogeneity was used to adjust. The results show that the reduction of the currency conversion cycle will increase profitability. Even if endogeneity exists, the conclusions of the prior analysis are unaffected. When industry-specific

effects were adjusted for, similar results were observed, demonstrating the robustness of the findings.

A study conducted in India by Panda and Nanda (18) examined the association between WCF and profitability in six major Indian economic manufacturers. Between 2000 and 2016, a sample of 1,211 firms from six key industrial sectors of the Indian economy was taken. A two-step generalized moments (GMM) estimator was used to investigate the non-linear relationship between WCF and profitability. According to the study, a greater share of their working capital requirement may be financed by short-term loans, without seriously hurting profitability, by most companies in these industries. Nevertheless, if a bigger share of working capital needs is financed by short-term debt, a rise in debt funding might adversely affect profitability. In addition, the report found that companies with great financial flexibility and high pricing margins can enhance profitability by financing a large number of short-term working capital requirements and maintaining risky WCFs.

Alice and Mulyungi (2018) conducted a study in Rwanda that examined the influence of cash management on the financial performance of cooperative banks in Rwanda: a case study of Zigma CSS. The study's target population consisted of 148 Zigma CSS employees, from which a sample of 108 was drawn. Both primary and secondary information sources were used for this study. In a multi-regression technique, the relationship between variables was studied. According to the study findings, the bank used numerous cash management approaches and that there was a strong positive association between cash management and the bank's financial success.

Locally, Kanji (2017) conducted research on the impact of working capital on the financial performance of service organizations listed on the NSE. The study examined five-year data from a panel of 24 NSE services companies over the 2012-2016 period. Data from the Central Bank of Kenya and the Capital Market Authority were published. The results of

this report. Multiple linear regression, correlation, and descriptive analysis were all carried out. The study results showed an R-Squared of 0.657, indicating a substantial association between various variables of working capital in affecting the financial performance of service firms listed on the NSE. Based on the findings of the study, the management at service organisations throughout the country should always endeavour to increase their working capital to improve their overall financial performance.

Godswill et al. (2018) observed that since the banking sector's profitability relies on working capital management, this is one of the reasons why bank profitability is sensitive to fluctuating working capital. The goal of the research by Godswill et al. (2018) was to investigate ways that banks' profitability may be improved by way of working capital management. The study employed panel data with ten (10) deposit money banks in Nigeria over the course of seven years (2010–2016) and used the panel fixed effect model. According to the results of the research, working capital management has a substantial impact on the profitability of the chosen banks, and return on asset is a superior way to evaluate bank profitability.

Anachoni and Jagongo (2020) while conducting their study observed that as a corporate manager, making short-term financial choices is an essential part of one's everyday responsibilities. To be financially successful, a company must strike a proper balance between long-term and short-term funding. Their research was aimed at discovering if a brief period of external funding influences the financial health of commercial banks in Kenya. The 2012 to 2018 panel data from financial statements of commercial banks in Kenya was used to accomplish the study's goal. Leverage, client deposits, and liquidity ratio acted as proxies for short-term financing. Financial success was evaluated by Return on assets (ROA). Regression analysis was utilized to analyze how short-term borrowing influenced financial performance.

The study's results showed that the impact of client deposits and liquidity on a commercial bank's profitability was substantial, whereas leverage had little impact.

Wanyoike et al. (2021) evaluated the operational effectiveness of selected supermarkets, as well as inventory and creditors' management and receivables and liquidity procedures, utilizing data from the Kenyan retail network to investigate working capital management techniques. The study had applied Cash Management Theory, Iceberg Theory of Money Management, and Agency Theory. Stratified and random sampling techniques were used to survey 52 branch managers from four different supermarkets, each operating in different areas of the country. Inferential and descriptive statistical analysis were used to examine the data. Despite acknowledging that creditor and inventory management methods had a little impact on the operational success of Kenyan supermarkets, the study discovered that other aspects of a supermarket's operations were greatly affected.

2.4 Summary of Literature Review and Research Gaps

The review of literature provided a discussion of various existing empirical literature on the effect of capital adequacy, board composition, management efficiency and working capital on financial performance of commercial banks. The review has indicated the areas of convergence and divergence in the numerous reviewed studies. Besides, the review has indicated the various contextual, methodological and conceptual gaps that have been left by these studies which justifies the current study.

Regarding contextual gaps, studies such as Lee (2016), Ahmed and Afza (2019) Nangih and Onuora (2020) were conducted on non-financial firms. The study by Lee (2016) restaurant businesses in the United States, the study by Ahmed and Afza (2019) was conducted on non-financial corporations registered in Pakistan while the study by Nangih and Onuora (2020) was conducted on publicly traded oil and gas firms in Nigeria. were selectively selected. The

findings from these studies cannot be generalized to commercial banks in Kenya and hence justified the current study to investigate the influence of firm factors on financial performance of commercial banks in Kenya.

The literature review also unearthed some knowledge gaps as most of the reviewed studies had not comprehensively covered the four firm factors that the current study seeks to study. The study by Mahrous et al. (2020) only covered capital adequacy but did not include working capital, management efficiency and board composition. Besides, the study by Naseem et al. (2017) assessed the impact of board composition on the financial performance of Pakistan Stock Exchange-listed firms but did not include capital adequacy, working capital and management efficiency which are vital factors that could influence performance of commercial banks. The current study therefore sought to fill these gaps by establishing how board composition, management efficiency, working capital and capital adequacy jointly influence financial performance of commercial banks in Kenya.

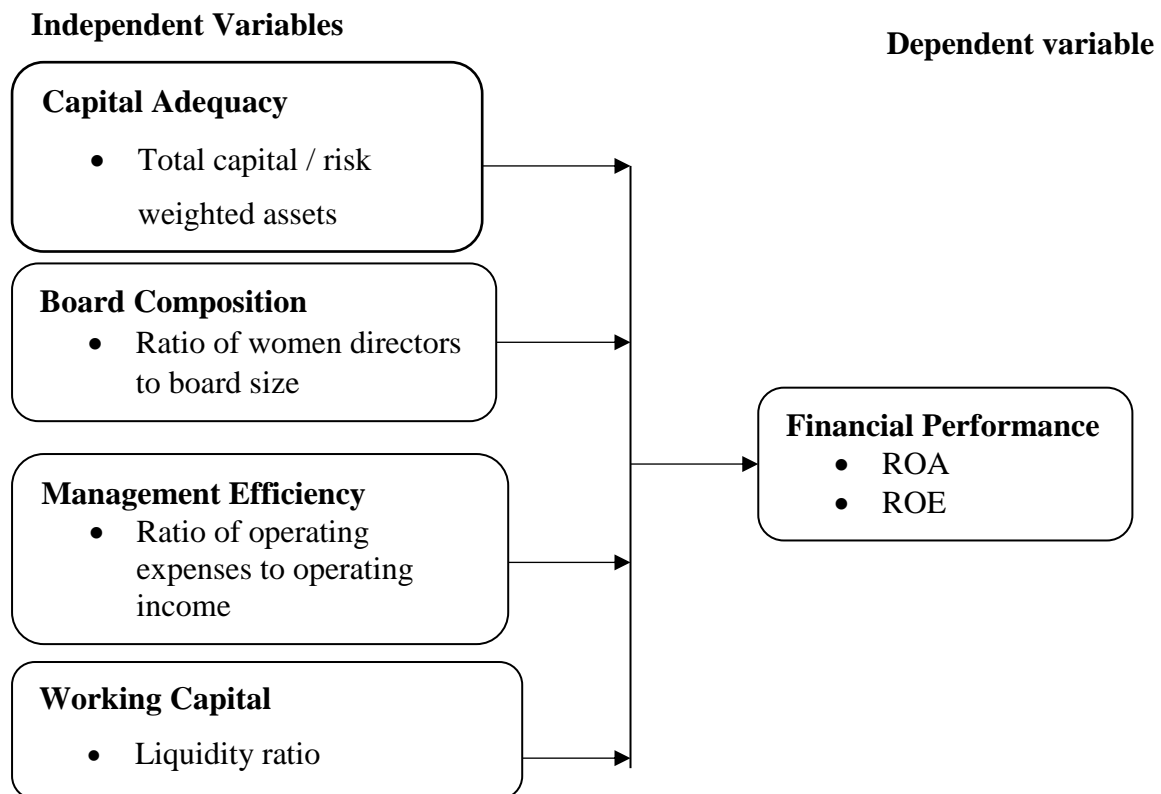
Most of the reviewed studies were conducted outside Kenya and due to the differences in operating and regulatory environment between countries, the findings may not be a reflection of the situation amongst commercial banks in Kenya. Studies such as O'Neill et al. (2016) in Australia, Alabdullah (2018) in Jordan, Dzingai and Fakoya (2017) in South Africa, and Assenga et al. (2018) in Tanzania were conducted in locations with different regulatory and operating environments from the Kenyan context. Therefore, these findings may not provide an accurate reflection of how firm factors influence financial performance of commercial banks in Kenya which justified the current study.

2.5 Conceptual Framework

A conceptual framework is a graphical representation of the hypothesized relationship between independent and dependent study variables. It is a tool that researchers use to obtain

a better understanding and awareness of the association of the variables under study. As a result, a conceptual framework is very important while doing research since it allows researchers to clearly establish the existing link between different study variables and it is conceptualized within the variable components and their indicators. The conceptual framework that will guide the study are presented in Figure 1. In the framework, the predictor variables are capital adequacy, board composition, management efficiency, and working capital, while the dependent variable is financial performance.

FIGURE 1
Conceptual Framework



2.6 Operationalization of Variables

TABLE 1

Operationalization of Variables

Variable Type	Variable	Measurement	Formula	Source
Independent Variable	Capital Adequacy	Ratio of total capital to risk weighted assets	Total capital / risk weighted assets	Shaheen & Malik (2012).
Independent Variable	Board Composition	Ratio of female directors to board size	(Number of female directors / Board size) * 100	Ongore, et al. (2015).
Independent Variable	Management Efficiency	Operating expenses to operating income	Operating expense / Operating income	Muhmad & Hashim (2015).
Independent Variable	Working Capital	Liquidity ratio	Liquid assets / customer deposits	Hampton & Wagner (1989).
Dependent Variable	Financial Performance (ROA& ROE)	Net income to total assets	ROA = (Net profit / Total assets) * 100	Gartenberg, Prat & Serafeim (2019).
		Net income to total equity	ROE = (Net profit / Total equity) * 100	Gartenberg, Prat & Serafeim (2019).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the methodology that was utilized to conduct the study and attain the objectives of the study. It discusses the research design, the population, sample and sampling technique, the type of data that will be collected and the data collection method used. Besides, it will discuss how the collected data will be analysed and presented.

3.2 Research Design

The overall approach for doing research that outlines a clear and logical plan to address a specific research problem through the gathering, interpretation, analysis, and discussion of study results is referred to as research design (Saastamoinen, 2015). The study was carried out using a descriptive research design in a longitudinal design. The longitudinal design was employed because the information was required across time and the method has the advantage of utilising cross-sectional data. The number of commercial banks in Kenya, licensed under the Banking Act served as the study's unit of analysis.

3.3 Target Population

A target population is the full collection of units for which survey data will be utilized to draw conclusions (Asiamah, Mensah & Oteng-Abayie, 2017). The population consisted of all the 42 commercial banks that were registered with the Central Bank of Kenya under the Banking Act, Chapter 488 of the Kenyan laws (CBK, 2019).

3.4 Sample Size and Sampling Procedure

The sampling plan describes the sample unit, the sample frame, the sample method and the sample size for the study. The sample frame lists all population units from which the sample is obtained. The study employs a census technique in which all of the 42 commercial banks in Kenya were evaluated for purposes of this study, given that the population target is small and

manageable (42 commercial banks). Data for this study was therefore collected from the 42 commercial banks in Kenya.

3.5 Data Collection

Secondary data from yearly banking surveys, financial statements of listed banks, and information from the Central Bank of Kenya, and Nairobi Securities Exchange was used in the study. In order to produce a panel dataset of 210 observations, the data was collected over a five-year period from 2015 to 2019. The time span (2015-2019) was chosen since it contains the most recent data that is readily available and also covers one complete business cycles which is adequate to establish a trend.

3.6 Data Analysis Procedure

The study employed panel data analysis techniques as the data collected had both time series and cross-sectional dimensions. Besides, panel data analysis techniques take into consideration the timeseries and cross-sectional features of the data thus providing a more reliable model (Saastamoinen, 2015). Panel data regression was utilized to expand the number of data observations, making it highly useful for studying differences within time and between units. There are two models that can be utilized to analyze panel data; a pooled ordinary least squares (OLS) regression model and panel data regression model. The pooled OLS model is used when there are no material differences within the years for the various entities.

Panel data regression can be either adopt the fixed effects or random effects models. These are employed to cope with the possibility of a cross-sectional influence on each business or group of companies. The fixed effect model, as an analytical tool, accounts for entity heterogeneity by enabling each entity to have its own intercept value while assuming that the coefficients of the slope are constant across the various entities. Individual intercepts may vary

between entities, but each intercept will not change considerably over time, indicating that it is time invariant. The random effects model, on the other hand, isolates variations across components (panels), and individual differences are random and unrelated to the independent factors. As a result, the error term captures both the random impacts of the panels and the random instabilities. For each panel, random effects are handled as distinct errors with a normal distribution, zero mean, and variance of 2. One must identify individual aspects that may or may not impact the independent variables when using the random effects approach. However, certain factors may not be accessible in the study, causing the model to be biased by the missing variables.

The Breusch Pagan LM test and a Hausman specification tests were performed to examine the adequacy of each model in order to choose which of the three models was appropriate for the study. The three models (pooled OLS, fixed and random effects models) that were considered in the study are provided hereunder.

1. Pooled OLS:

$$Y_{it} = \alpha + \beta_1 CI_{it} + \beta_2 BC_{it} + \beta_3 ME_{it} + \beta_4 WC_{it} + \varepsilon_{it}$$

Where ε_{it} = error term

2. Fixed effects:

$$Y_{it} = \alpha + \beta_1 CI_{it} + \beta_2 BC_{it} + \beta_3 ME_{it} + \beta_4 WC_{it} + \mu_{it}$$

Where μ_{it} = error term

3. Random effects:

$$Y_{it} = \alpha + \beta_1 CI_{it} + \beta_2 BC_{it} + \beta_3 ME_{it} + \beta_4 WC_{it} + \varepsilon_{it} + \mu_{it}$$

Where ε_{it} = within entity error term

μ_{it} = between entity error term

From the equations,

Y_{it} = Financial performance (ROA)

α = Constant term

$\beta_1, \beta_2, \beta_3$ = Regression coefficients

CI_{it} = Capital Adequacy

BC_{it} = Board Composition

ME_{it} = Management efficiency

WC_{it} = Working Capital

i = Commercial bank (1....42)

t = Year (2015—2019)

3.7 Diagnostic Tests

This study's diagnostic tests conducted include testing for autocorrelation, multicollinearity, and heteroscedasticity. The Hausman, unit root, and Breusch Pagan LM tests were also conducted.

3.7.1 Autocorrelation test

In order to get desirable results, a model should not contain serial correlation or autocorrelation. The Wooldridge method was used to test the aforementioned assumptions in panel data. In a scenario where p-value is more than 5%, it means that the remaining value of the estimated equations is not linked to the dependent variable. The model created for serial correlation or autocorrelation is inadequate. Autocorrelation inflates the variance of the coefficient estimations. It also has an adverse effect on standard errors. To address the issue, a fixed effects regression with AR (1) disturbances were tested. Accounting for AR (1) disturbances in the model aids in reducing the effect of first-order serial correlation and therefore stabilizing the coefficient variance.

3.7.2 Multicollinearity test

This test was used to identify a multicollinearity issue, which, if not corrected, may lead to an unstable parameter estimator, resulting in a parameter estimation that is difficult to

evaluate and understand (financial performance). To determine multicollinearity in the model, Variance Inflation Factor (VIF) in Stata program was used. Multicollinearity, an issue that may arise due to using variables with VIF values that are more than 10, is indicated by the presence of variables with VIF values higher than 10. This issue is caused by the large number of factors that act independently to quantify the same dependent variable. To find an issue, the variable with the highest VIF must be eliminated, and the remaining variables must be transformed from non-significant to significant.

3.7.3 Heteroscedasticity test

The presence of homoscedasticity is demonstrated when the variance of errors in all data observations is constant. Heteroscedasticity, by contrast, is characterized as the lack of homoscedasticity. The presence of the missing variables is the fundamental reason for the model's heteroscedasticity, since the neglected variability effect is absorbed by an error term, and hence the wrong conclusions are not included in the explanatory variable (Saastamoinen, 2015). The probability ratio test for heteroscedasticity is used in this study, which used panel data. In the null hypothesis, heteroscedastic are not observed in the data if it exceeds 5%. The presence of heteroscedasticity causes the model's standard errors to be skewed. The problem of heteroscedasticity will be solved by calculating the robust standard errors. The Jarque-bera test was used to investigate the assumption that residuals are normally distributed. If the Jarque-bera test results reveal that errors are not distributed evenly, the problem of non-normality in the residuals will be solved by modifying the data with logarithms.

3.7.4 Hausman test

A Hausman test helps assess whether random or fixed effects are to be applied. Moreover, the Durbin–Wu-Hausman test, sometimes referred to as the Hausman specification test, compares the consistency of an estimate with that of an already known less efficient estimator. It helps to identify if a statistical model is relevant to the information. A statistic

from Hausman is important, because the difference between the estimates of the two assessors is calculated. Moreover, in assessing how significant a difference is, and if it is significant enough to be compatible with the null hypothesis of accuracy, the test group for Hausman statistics is a crucial factor. It is performed using a Hausman test, which compares the Hausman statistics with its sample distribution critical value and rejects the null correct hypothesis if the Hausman statistics exceed the critical value. Use the random effects model if it is more than 0.05.

3.7.5 Unit root test

The unit root test is used to determine if a time series variable is nonstationary and has a unit root. The null hypothesis is the unit root series, while the alternative is that the series has no unit root and is stationary. The zero hypothesis is assessed with the Levin-Lin test to see whether there is an autoregression root. Since the test assumes that all panels have one parameter of autoregressive, there is no chance that certain banks' equity returns [ROE] include unit roots and other equity returns [ROE] do not. The root of each test also indicate the intended behavior of panel and time periods. The unit root is used for every test. This characteristic frequently calls unit root processes stagnant processes of difference. When the p-value is lower than the significant alpha-value it should reject the null hypothesis and accept the alternative. This study will take advantage of the Levin-Lin-Chu unit root test in Stata with a 5% significance level. The null hypothesis states that the data has a unit root, while the alternative hypothesis claims that the data is stationary.

3.7.6 Breusch Pagan LM tests

This test is used in panel data statistics to determine whether to use a random effect [RE] or a pooled ordinary least square [POLS] model. The command is built into Stata. The deciding factor is that when the outcome is zero, the random effects model is used in the research.

CHAPTER FOUR

FINDINGS AND DISCUSSION

4.1 Introduction

This chapter discusses the data analysis procedure, the research results, and the discussion of the study findings. The exploratory analysis, descriptive statistics, diagnostic tests, and fitting of the model were all part of the process of analyzing the gathered data. The approach described in this chapter is followed in the data analysis process, which aims to give answers to the study questions. Furthermore, the diagnostic tests carried out aim to ensure that the data does not contradict the regression assumptions. Finally, the suitable panel data model for the research was fitted.

4.2 Descriptive Statistics

The collected data's descriptive statistics are presented in this section. For 38 commercial banks, data was gathered during a five-year period (2015–2019). DIB Bank Kenya Ltd did not have observations for all the five years while Imperial Bank Ltd, Chase Bank (K) Ltd and Charterhouse Bank Ltd were either under receivership or liquidation. Capital Adequacy (CI), Board composition (BC), management efficiency (ME), working capital (CR), return on assets (ROA), and return on equity (ROE) were all gathered for the five-year study period. Table 2 contains descriptive data such as the mean, standard deviation, minimums, and maximums for those study variables.

TABLE 2
Descriptive Statistics

Variable		Mean	Std. Dev.	Min	Max	Observations	
CI	overall	18.48195	10.19038	-21.33	50.1	N =	190
	between		10.02596	-18.788	44.14	n =	38
	within		2.334821	10.95195	24.44195	T =	5
BC	overall	.2547368	.1030677	.08	.56	N =	190
	between		.0838421	.124	.466	n =	38
	within		.0611737	.0907368	.3867368	T =	5
ME	overall	53.64971	14.82378	31.0838	129.443	N =	190
	between		12.84749	39.01066	107.5914	n =	38
	within		7.627576	19.60694	94.47463	T =	5
CR	overall	1.234211	.2074311	1	2.09	N =	190
	between		.1059585	1.084	1.644	n =	38
	within		.1789919	.7502105	1.97221	T =	5
ROA	overall	3.872316	3.737996	-12.3	12.08	N =	190
	between		2.788353	-5.334	7.792	n =	38
	within		2.52235	-3.109684	10.47832	T =	5
ROE	overall	18.39795	19.59804	-90.82	60.9	N =	190
	between		16.16093	-28.63	43.736	n =	38
	within		11.33292	-55.68405	71.51595	T =	5

According to the research results shown in Table 2, the capital adequacy (CI) for the 38 commercial banks included in the study was 18.48 with a standard deviation of 10.19. The capital adequacy at the lowest and highest levels was -21.33 and 50.1 percent, respectively. With a standard deviation of 0.1031, the average board composition (BC) was 0.25. This means that commercial banks' boards of directors have a female representation of 25% on average. The commercial bank with the lowest percentage of female board members was 8%, while the one with the greatest percentage was 56%.

The average management efficiency (ME) was 53.65 percent, with a 14.82 percent standard deviation. This means that the banking sector's operating costs accounted for 53.65% of its operating revenue on average. The lowest bank had a 31.08 percent ratio, while the biggest had a 129.44 percent ratio. The average for working capital (CR) as assessed by the

current ratio was 1.23, with a standard deviation of 0.2. The bank with the lowest working capital had a current ratio of 1, while the bank with the greatest had a current ratio of 2.09.

ROA and ROE were the study's dependent variables. The average ROA for the 38 commercial banks over the last five years was 3.87, with a standard deviation of 3.74. Over a five-year period, the commercial bank with the lowest ROA was -12.3 percent, while the one with the best was 12.08 percent. The average return on investment (ROI) was 18.4 percent, with a standard deviation of 19.6 percent, according to the research results. Over the research period, the commercial bank with the lowest ROE was -90.82 percent, while the best was 60.9 percent. These data suggest that Kenyan commercial banks have had a mixed financial performance.

4.3 Exploratory Analysis of the Study Variables

This section displays the results of the exploratory analysis of the study variables, which comprises line plots for the independent variables and overlain plots for the dependent variables. The panel data line plots for capital adequacy (CI) are shown in Figure 2.

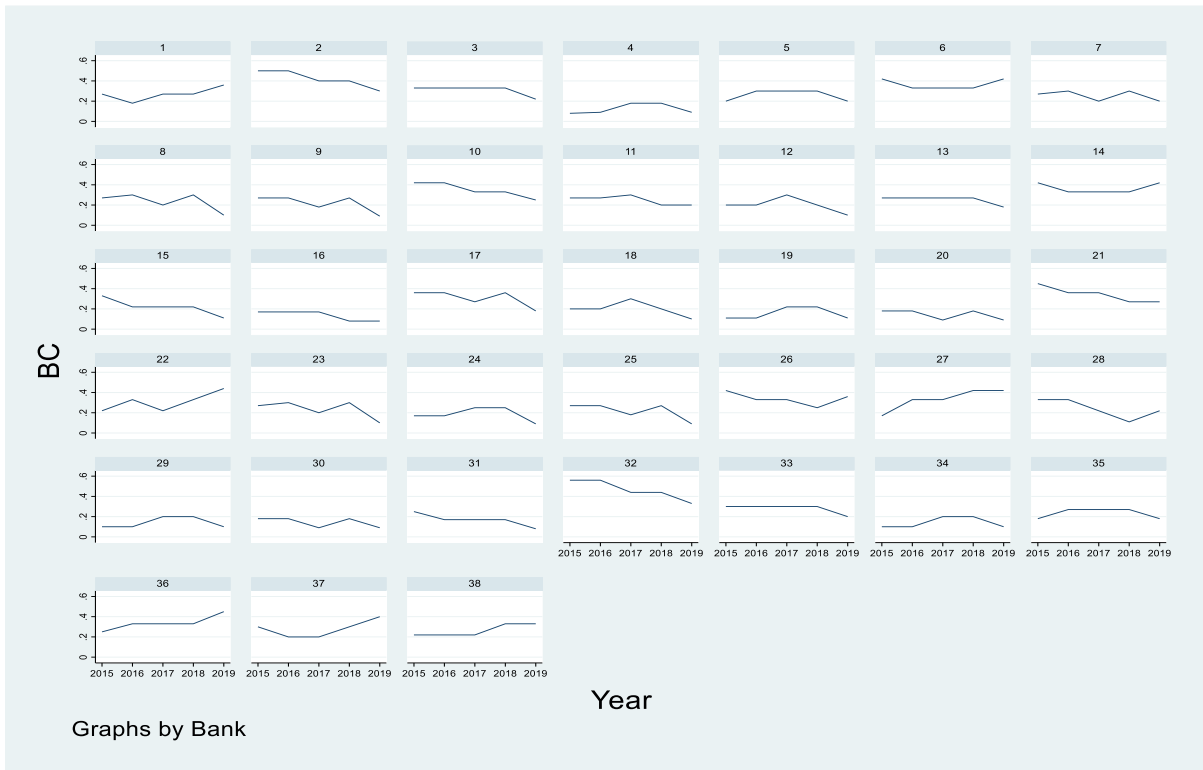
FIGURE 2
Panel Data Line Plots for Capital Adequacy



Figure 2 shows the variations in capital adequacy for the 30 commercial banks over the course of five years using panel data line plots. The chart shows that the capital adequacy of most commercial banks stayed constant throughout the course of the five-year period. Regarding capital adequacy, there was insignificant changes over the study period. In addition, Figure 3 shows the panel data line –plots for the board composition.

FIGURE 3

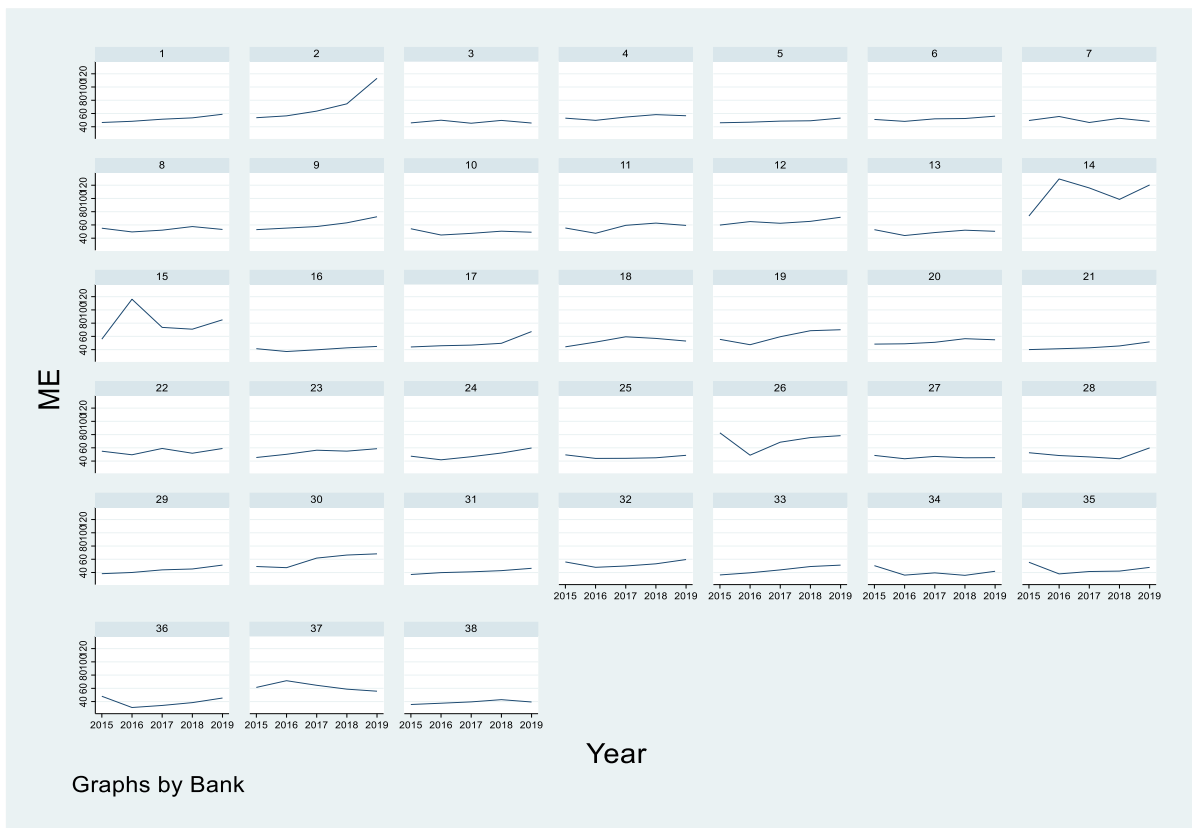
Panel Data Line Plots for Board Composition



Most commercial banks had no notable change in board composition over the five-year period, according to the panel data line plots for board composition. However, other commercial banks such as 17 and 25, 26 and 32 indicated material changes of the board composition over the study period. Figure 4 shows the panel data line plots for management efficiency which was computed by the ratio of operating expenses to operating income.

FIGURE 4

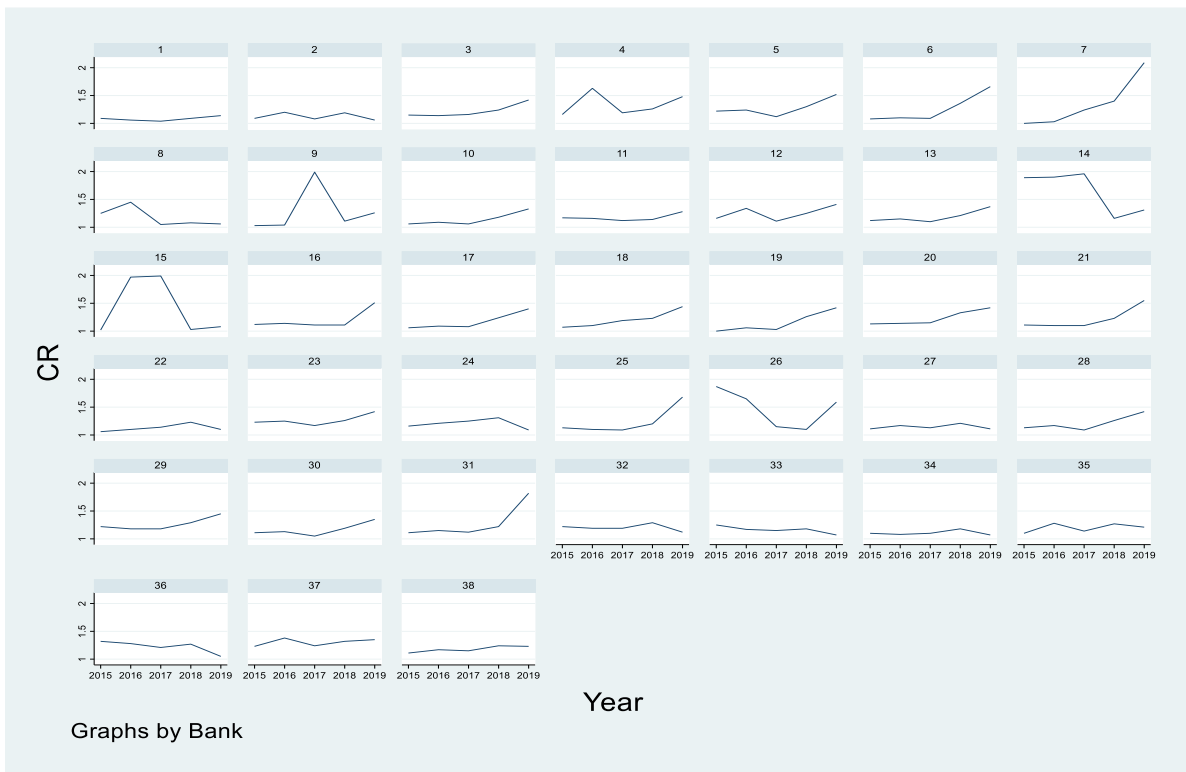
Panel Data Line Plots for Management Efficiency



According to the graphs in Figure 4, there was no significant changes to management efficiency variables over the five years for most commercial banks. However, commercial bank 2, 14, 15, and 26 experienced the most changes over the study period. The research also created panel data line plots for working capital which was measured using current ratio (CR). Figure 5 summarizes the results.

FIGURE 5

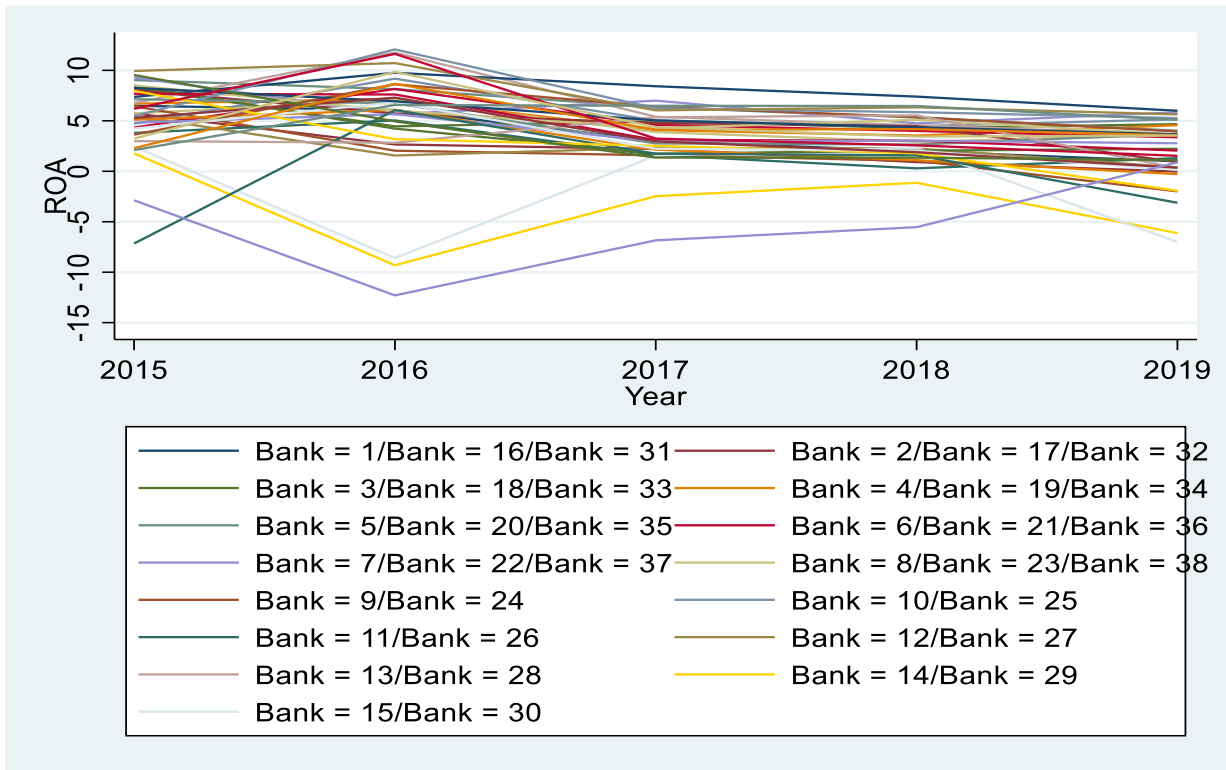
Panel Data Line Plots for Working Capital



The panel data line plots displayed in Figure 5 show that most of the commercial banks did not explain high variation in working capital over the study period. However, commercial bank 4, 7, 8, 9 14, 15, 26 and 31 experienced year on year variations in working capital over the study period. Finally, the study's dependent variables were ROA and ROE. Figure 6 shows the panel data overlain plots for ROA.

FIGURE 6

Panel Data Overlain Plots for Return on Assets



The overlain plots displayed in Figure 6 for ROA show that apart from 4 commercial banks that had significant changes in ROA over the study period. All the other commercial banks did not experience significant disputations over the study period. The overlay plots also show that ROA remained stable throughout the research period, since there was no rising or decreasing trend. Figure 7 shows the overlain plots for the return on equity given by the research.

FIGURE 7
Panel Data Overlain Plots for Return on Equity

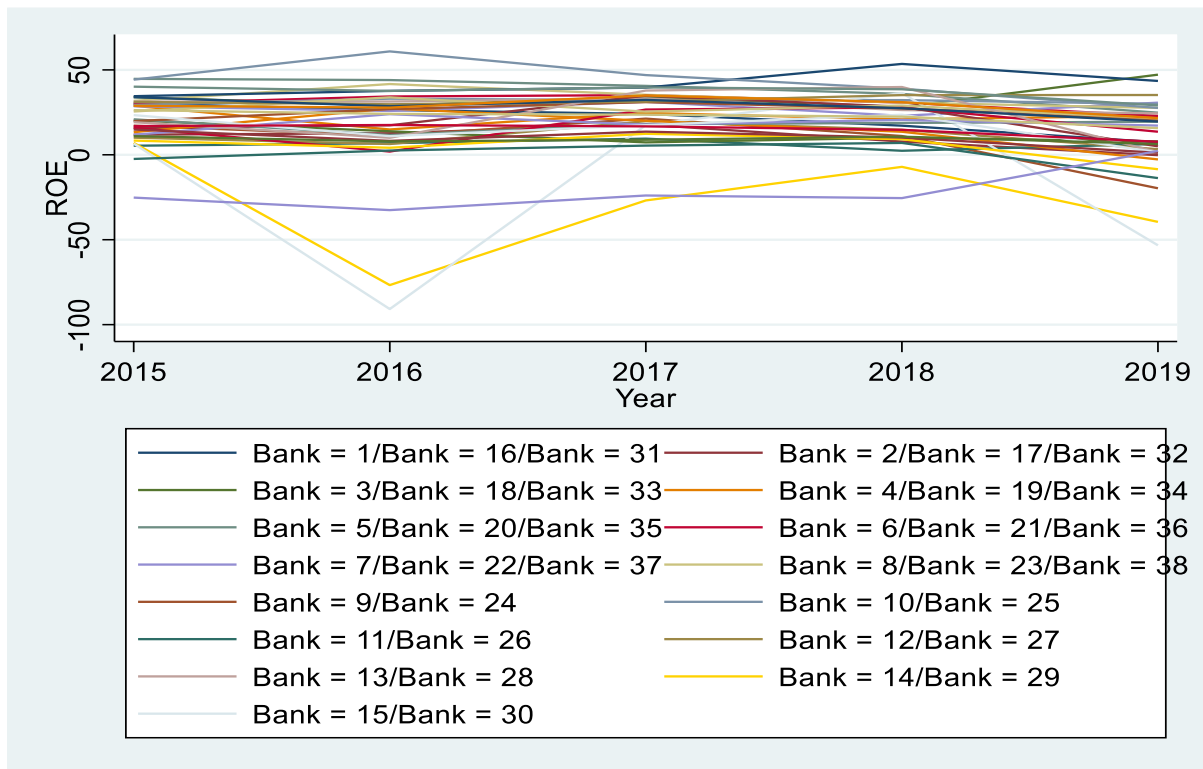


Figure 7 indicate that the overlain plots for ROE are similar to those of ROA. Similarly, the overlay plots also indicate that ROE was stationary as it did not indicate any upward or downward trend over the study period.

4.4 Diagnostic Tests

The study conducted diagnostic tests before and after the model fitting to verify that the panel regression model assumptions were met. The first test performed before fitting the model was a multicollinearity test, which was used to determine whether there were any two independent variables with a strong linear connection. When there is multicollinearity, the standard errors may inflate, making it difficult to evaluate the significance of individual regression coefficients. This research made use of the VIF to assess multicollinearity. Table 3 summarizes the findings.

TABLE 3
Multicollinearity Test Using Variance Inflation Factors

Variable	VIF	1/VIF
ME	1.32	0.758550
CR	1.20	0.836717
CI	1.12	0.892234
BC	1.02	0.978309
Mean VIF	1.16	

Table 3 shows that all of the variables had VIFs of less than 2. The VIF was 1.16 on average. The greatest VIFs were 1.32 and 1.20 for management efficiency (ME) and working capital (CR), respectively. According to Linton (2017), if the VIFs of independent variables in a regression model are fewer than 5, there is no significant linear connection. Because there is no multicollinearity, the standard errors and regression coefficients from such a regression model are efficient and reliable.

The autocorrelation test was the second diagnostic test performed. This assessed whether there was a link between the errors in successive time periods. Although serial correlation has no effect on the consistency or absence of bias of regression estimators, it may affect the model's efficiency, according to Fisher (2017). The Wooldridge test was used to evaluate serial correlation in this research. No serial correlation is the null hypothesis for the test. Table 4 summarizes the results.

TABLE 4
Test of Autocorrelation Using Woodridge Test

Ho: No first order autocorrelation
F (1, 37) = 0.897
Prob > F = 0.3488

According to the study results presented in Table 4, the p value of the Woodridge test for autocorrelation was above 0.05 ($p = 0.3488$). There was no autocorrelation, as shown by this. Despite the fact that Zikmund et al. (2013) assert that serial correlation has no significant impact for data with fewer than 10 time periods, Angrist and Pischke (2014) suggest that addressing serial correlation will enhance the efficiency of the fitted model. This may be solved, according to Wooldridge (2015), by clustering standard errors at the unit level. This was not required, however, since there was no serial association in the research.

After the model was fitted, the researchers checked for heteroscedasticity, which is when the variance of errors is not uniform across all levels of the dependent variable. Gujarati (2011) claims that heteroscedasticity may lead to inefficient estimators and excessive variance in model coefficients. The researcher utilized the Breusch-Pagan Cook-Weisberg test for groupwise heteroscedasticity to assess heteroscedasticity in the data. Table 5 summarizes the findings.

TABLE 5
Test of Heteroscedasticity

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity	
Ho: Constant variance	
Variables: fitted values of ROA	
chi2(1)	= 2.16
Prob > chi2	= 0.1420

For groupwise heteroscedasticity, the p value of the Breusch-Pagan Cook-Weisberg Chi square test was higher than 0.05 ($p = 0.1420$), as shown in Table 5. This means that the constant variance null hypothesis could not be rejected, indicating that homoscedasticity existed.

Finally, the research performed the Shapiro Wilk tests which was used to assess the normality of the panel regression model residuals. The residuals were produced and the test was run after the model was fitted. According to Saunders et al. (2015), in order for a regression model's inferences regarding significance levels and coefficients to be correct, the model's error terms must be normally distributed. The Shapiro Wilk test results are given in Table 6.

TABLE 6
Test of Normality of Residuals Using Shapiro Wilk

Variable	Obs	W	V	z	Prob > z
Residuals	190	0.9684	1.412	0.547	0.2417

The Shapiro-Wilk test was not significant since the p value was more than 0.05 ($p = 0.2417$), as shown in Table 6. As a consequence, the normal distribution of the error term null hypothesis could not be rejected. As a consequence, the errors from the panel regression model were found to be regularly distributed. This indicates that the model's findings about significance levels and coefficients are reliable and efficient.

The research used a Hausman test after the diagnostic tests to identify which of the panel data models (random effects and fixed effects) was best for the study. In a regression

model, the Hausman test identifies endogenous predictor variables whose values are influenced by other factors in the model. The results of the Hausman test are shown in Table 7. According to the results, the p value was less than 0.05 ($p = 0.0000$). As a result, the fixed effects model was appropriate for the data, as shown by this. According to Hilmer and Hilmer (2013), the fixed effects model allows for the management of unobserved time-invariant characteristics that are distinctive to specific units included in the study. This model implies that these characteristics are linked to the predictor variables.

TABLE 7
Hausman Test

	— Coefficients —		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) fixed	(B) random		
CI	-.3186815	-.0961962	-.2224853	.0508806
BC	-.2555043	.5847827	-.840287	1.03507
ME	-.2105326	-.2113427	.0008101	.009898
CR	-.779152	-1.216181	.4370292	.

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)
= 26.59
Prob>chi2 = 0.0000
(V_b-V_B is not positive definite)

4.5 Model Fitting

This section provides the results of the fixed effects models that were used to fit the data. Capital adequacy (CI), board composition (BC), management efficiency (ME) and working capital (CR) were the independent variables. Return on assets (ROA) and return on equity (ROE) were the dependent variables. The fixed effects model results on ROA are shown in Table 8.

TABLE 8

Fixed Effects Model on Return on Assets

Fixed-effects (within) regression		Number of obs	=	190		
Group variable: Bank		Number of groups	=	38		
R-sq:		Obs per group:				
within	= 0.6016		min	=	5	
between	= 0.1242		avg	=	5.0	
overall	= 0.2428		max	=	5	
corr(u_i, Xb) = -0.5669		F(4,148)	=	55.87		
		Prob > F	=	0.0000		
ROA	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
CI	-.3186815	.0587382	-5.43	0.000	-.4347555	-.2026076
BC	-.2555043	2.245748	-0.11	0.910	-4.693377	4.182368
ME	-.2105326	.0184138	-11.43	0.000	-.2469205	-.1741448
CR	-.779152	.7686866	-1.01	0.312	-2.298171	.7398668
_cons	22.08391	1.673086	13.20	0.000	18.77769	25.39013
sigma_u	3.4800759					
sigma_e	1.7991207					
rho	.78910053	(fraction of variance due to u_i)				
F test that all u_i=0: F(37, 148) = 6.09				Prob > F = 0.0000		

The fitness of the model, its explanatory power, and the importance of the significance of the independent variables in predicting the dependent variable (ROA) are all shown in Table 8. Because all of the commercial banks included in the study had observations for all of the years, the panel was balanced. In terms of model fitness, the f statistic ($F = 55.87$) was statistically significant ($p < 0.05$), indicating that the model was fit and that at least one of the independent variables had a substantial impact on explaining the dependent variable. The coefficient of determination (r squared within = 0.6016) shows that capital adequacy (CI), board composition (BC), management efficiency (ME) and working capital (CR) account for 60.16 percent of the variance in ROA within the five-year period. Furthermore, the model accounts for 12.42 percent of the variance in financial performance (ROA) across the 38 commercial banks (r squared between = 0.1242). Furthermore, the overall r squared suggests

that the POLS model would have explained only 24.28% of the variation in financial performance of commercial banks (r squared overall = 0.2428) if it had been used.

Capital adequacy (CI) had a significant and negative influence on financial performance measured through ROA ($\beta = -0.3186$, $t = -5.43$, $p < 0.05$), according to the research results provided in Table 8. This means that commercial banks with a higher capital adequacy outperformed those with lesser capital adequacy. The findings also indicate that changing capital adequacy by 1% would inversely change ROA by 0.31%, when all other factors are kept constant.

Board composition (BC) had no significant influence on the financial performance of the commercial banks as indicated by ROA ($\beta = -0.2555$, $t = -0.11$, $p = 0.91$), according to the results. This indicates that the percentage of female members of the board amongst the board of directors did not have any influence on the financial performance of the commercial banks in Kenya. Besides, the findings imply that changing the proportion of the gender of board members is not expected to result to any significant changes in financial performance of the commercial banks.

Furthermore, the study findings indicated that management efficiency (ME) had a significant and negative influence on financial performance measured through ROA ($\beta = -0.2105$, $t = -11.43$, $p < 0.05$), according to the research results provided in Table 8. Since management efficiency was measured using the ratio of operating expenses to operating income, this means that commercial banks with a higher management efficiency outperformed those with low management efficiency. The findings also indicate that changing management efficiency by 1% would inversely change ROA by 0.21%, when all other factors are kept constant.

The findings summarized in Table 8 indicate that working capital (CR) had no significant influence on the financial performance of the commercial banks as indicated by

ROA ($\beta = -0.7792$, $t = -1.01$, $p = 0.312$), according to the results. This indicates that the working capital indicated by the proportion of current assets to current liabilities did not have any influence on the financial performance of the commercial banks in Kenya. Besides, the findings imply that changing the proportion of current assets in relation to current liabilities is not expected to result to any significant changes in financial performance of the commercial banks.

The study used the POLS model to test for robustness of the fixed effects model. The findings of the POLS model are provided in Table 9.

TABLE 9
POLS Model on Return on Assets

Source	SS	df	MS	Number of obs	=	190
				F(4, 185)	=	54.85
Model	1432.73387	4	358.183467	Prob > F	=	0.0000
Residual	1208.09018	185	6.53021717	R-squared	=	0.5425
				Adj R-squared	=	0.5326
Total	2640.82404	189	13.972614	Root MSE	=	2.5554
ROA	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
CI	-.0309012	.0193109	-1.60	0.111	-.0689991	.0071967
BC	1.313112	1.82336	0.72	0.472	-2.28414	4.910364
ME	-.1844551	.0143973	-12.81	0.000	-.2128591	-.156051
CR	-1.182707	.9796468	-1.21	0.229	-3.115423	.7500084
_cons	15.4646	1.361192	11.36	0.000	12.77915	18.15006

The findings in Table 9 demonstrate that the POLS model explained only 54.25% of the variation in ROA in the studied commercial banks. This is lower than the 60.16 percent of the variance in ROA within the five-year period and the 12.42 variance explained between the commercial banks that was explained by the fixed effects model. Moreover, apart from board composition, the signs of the other coefficients of the independent variables were similar. This

is evidence of structural validity, indicating that the coefficients are resilient and reasonable and resilient.

The study also assessed the influence of capital adequacy (CI), board composition (BC), management efficiency (ME) and working capital (CR) on ROE. The results of the fixed effects model of ROE against the four independent variables are shown in Table 10.

TABLE 10
Fixed Effects Model on Return on Equity

Fixed-effects (within) regression		Number of obs	=	190	
Group variable: Bank		Number of groups	=	38	
R-sq:		Obs per group:			
within	= 0.4214	min	=	5	
between	= 0.5119	avg	=	5.0	
overall	= 0.4764	max	=	5	
corr(u_i, Xb) = -0.2428		F(4, 148)	=	26.95	
		Prob > F	=	0.0000	
ROE	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
CI	.4091395	.3180469	1.29	0.200	-.2193601 1.037639
BC	-1.641526	12.15993	-0.13	0.893	-25.67105 22.38799
ME	-.9342003	.099704	-9.37	0.000	-1.131228 -.737173
CR	-8.338434	4.162168	-2.00	0.047	-16.56339 -.1134811
_cons	71.66537	9.059173	7.91	0.000	53.76334 89.56741
sigma_u	11.732085				
sigma_e	9.7416056				
rho	.59190422	(fraction of variance due to u_i)			
F test that all u_i=0: F(37, 148) = 6.15				Prob > F = 0.0000	

The fitness of the model, the significance of the independent variables in predicting the dependent variable (ROA) and the model's explanatory power are all shown in Table 9. In terms of model fitness, the f statistic (F = 26.95) was statistically significant (p 0.05), indicating that the model was fit and that at least one of the independent variables had a substantial impact on explaining the dependent variable (ROE). The determinant's coefficient (r squared within = 0.4214) shows that capital adequacy (CI), board composition (BC), management efficiency

(ME) and working capital (CR) account for 42.41 percent of the variance in ROE within the five-year period. Furthermore, the model accounts for 51.19 percent of the variance in financial performance (ROE) across the 38 commercial banks (r^2 between = 0.5119). Besides, the overall r^2 suggests that the POLS model would have explained only 47.64% of the variation in financial performance of commercial banks (r^2 overall = 0.4764) if it had been used.

Capital adequacy (CI) had no significant influence on financial performance measured through ROE ($\beta = 0.4091$, $t = 1.29$, $p = 0.200$), according to the research results provided in Table 9. This means that the capital adequacy of the commercial banks was not instrumental in influence the commercial bank's financial performance. The findings also indicate that changing capital adequacy for commercial banks is not expected to have any significant influence on financial performance of the commercial measured through ROE.

Board composition (BC) had no significant influence on the financial performance of the commercial banks as indicated by ROE ($\beta = -1.64$, $t = -0.13$, $p = 0.893$), according to the results. This indicates that the percentage of female members of the board amongst the board of directors did not have any influence on the financial performance of the commercial banks in Kenya. Besides, the findings imply that changing the gender proportion of the board is not expected to result to any significant changes in financial performance of the commercial banks in terms of ROE.

Furthermore, the study findings indicated that management efficiency (ME) had a significant and negative influence on financial performance measured through ROE ($\beta = -0.9342$, $t = -9.37$, $p < 0.05$), according to the research results provided in Table 9. Since management efficiency was measured using the ratio of operating expenses to operating income, this means that commercial banks with a higher management efficiency outperformed those with low management efficiency in terms of return to shareholders (ROE). The findings

also indicate that changing management efficiency by 1% would inversely change ROE by 0.93%, when all other factors are held constant.

The findings summarized in Table 9 show that working capital (CR) had a significant and negative influence on the financial performance of the commercial banks as indicated by ROE ($\beta = -8.3384$, $t = -2.00$, $p = 0.047$), according to the research results provided in Table 9. This means that commercial banks with a higher working capital ratio were outperformed by those with lower working capital ratio. The findings also indicate that changing working capital by 1 would inversely change ROE by 8.34%, when all other factors are held constant.

The study used the POLS model to test for robustness of the fixed effects model. The findings of the POLS model are provided in Table 11.

TABLE 11
POLS Model on Return on Equity

Source	SS	df	MS	Number of obs	=	190
				F(4, 185)	=	47.96
Model	36953.6947	4	9238.42369	Prob > F	=	0.0000
Residual	35638.0408	185	192.638058	R-squared	=	0.5091
				Adj R-squared	=	0.4984
Total	72591.7355	189	384.083257	Root MSE	=	13.879
ROE	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
CI	-.0141219	.1048842	-0.13	0.893	-.2210448	.192801
BC	-3.323199	9.903293	-0.34	0.738	-22.86111	16.21471
ME	-.892802	.0781968	-11.42	0.000	-1.047074	-.7385298
CR	-8.428284	5.320798	-1.58	0.115	-18.92553	2.068958
_cons	77.80634	7.3931	10.52	0.000	63.22071	92.39196

The findings in Table 11 demonstrate that the POLS model explained only 50.91% of the variation in ROE in the studied commercial banks. This is lower than the 51.19 percent of the variance in ROA between the commercial banks and 42.14% within the five-year study period that was explained by the fixed effects model. Moreover, apart from capital adequacy,

the signs of the other coefficients of the independent variables were similar. This is evidence of structural validity, indicating that the coefficients are resilient and reasonable and resilient.

4.6 Discussion of the Findings

The study findings established that capital adequacy had a significant and negative influence on financial performance measured through ROA ($\beta = -0.3186$, $t = -5.43$, $p < 0.05$). However, the study findings indicated that capital adequacy had no significant influence on financial performance measured through ROE ($\beta = 0.4091$, $t = 1.29$, $p = 0.200$). These findings contradict the buffer theory of capital by Callem and Rob (1996) which posits that when commercial banks increase their capital way above the statutory minimum, they reduce risks to attain the minimum regulatory capital ratio and thus can enhance their performance through reduced cost of capital. Besides, the study findings disagree with the observation by Allen et al. (2016) that corporations choose to hold their capital way above minimum requirements so that they do not fall prey to minimum capital requirements, which could cause substantial financial strain. The findings, however, concur with the findings by Lee (2016), that while increasing the capital buffer reduces the likelihood of a bank's failure, it raises its operational costs and thus negatively affects its financial performance.

The findings from this study contradicts findings from research on the influence of capital adequacy on profitability of listed oil and gas companies in Nigeria that was conducted by Nangih and Onuora (2020). This study was based on the ex-facto research design. Nine (9) publicly traded oil and gas firms were selectively selected. The data was collected for five years (2014 to 2018). In order to analyze relationships between study variables the study applied the random effects regression model. The findings indicated a large positive impact of capital adequacy on the profit margin. As a result, it was argued that enterprises with higher capital adequacy outperformed those with lower capital adequacy. Consequently, it was suggested that

oil and gas companies should strive for optimal capital adequacy, which will assure increased firm performance. The findings also contradict with results from a study in Egypt by Mahrous, Genedy and Kalliny (2020), which was carried out a study to assess the impact of capital adequacy on entrepreneurship and performance. The results showed that capital adequacy, effective planning and institutional backing are intra-organizational elements that facilitate the construction, growth and financial performance in major firms in emerging economies. Capital adequacy was also found to have a positive relationship with organizational performance and competitive advantage.

The study determined that board composition had no significant influence on the financial performance of the commercial banks as indicated by ROA ($\beta = -0.2555$, $t = -0.11$, $p = 0.91$) or by ROE ($\beta = -1.64$, $t = -0.13$, $p = 0.893$). These findings do not support the agency theory by Jensen and Meckling (1976), which links board composition with of organizations. According to the theory, an organization with an effectively composed board of directors will perform better than one with a less effectively composed board of directors. The theory was backed up by a study by Ali (2016), which found that board composition reduces agency problems and thus improves corporate financial performance. However, this assertion was not supported by the findings from this study. The findings from this study on the insignificant influence of board composition on financial performance contradicts the findings by Naseem, Xiaoming, Riaz and Rehman (2017) who assessed the impact of board characteristics on the financial performance of Pakistan Stock Exchange-listed enterprises. The study determined that board's gender diversity had an inverse relationship with financial success which is contrary to the findings from this study. The findings from this study also contradict the findings by Assenga, Aly and Hussainey (2018) that board gender diversity has a significant and positive influence on financial performance. This study's findings that board gender composition has no impact on the financial performance of Kenyan commercial banks disagree

with the findings by Muiruri (2018). According to the results of the study by Muiruri (2018), gender board diversity has a significant negative effect on the financial performance of commercial banks.

The study findings determined that management efficiency had a significant and negative influence on financial performance measured through ROA ($\beta = -0.2105$, $t = -11.43$, $p < 0.05$) and ROE ($\beta = -0.9342$, $t = -9.37$, $p < 0.05$). These findings indicate that efficiency with which management of commercial banks produce operational revenue through conventional intermediation and non-intermediation operations, as well as net interest and noninterest income, is critical. These findings give credence to performance theory by Campbell, McCloy, Oppler, and Sager (1993) which proposes that management efficiency creates an atmosphere conducive to increased production and financial performance. According to the theory, effective management allows for specialization and division of labor, which affects employee productivity and, as a result, the overall financial success of the company.

The study findings that management efficiency had a significant and negative influence on financial performance concurs with the findings by Aissa and Goaid (2016) in Tunisia, and the study in Nigeria by Ogunyomi and Bruning (2016) and another study by Bonface, Malenya, and Musiega (2015). All these studies had determined that management efficiency had statistically significant link between organizational financial performance. However, the findings from this study disagree with the findings by Barus, Muturi, Kibati and Koima (2017) which established that management efficiency does not affect the financial performance of saving and credit institutions. according to univariate results of regression ($p=0.173$).

The findings from the study established that working capital had no significant influence on the financial performance of the commercial banks as indicated by ROA ($\beta = -0.7792$, $t = -1.01$, $p = 0.312$). However, the study findings showed that working capital had a

significant and negative influence on the financial performance of the commercial banks as indicated by ROE ($\beta = -8.3384$, $t = -2.00$, $p = 0.047$). These findings concur with the liquidity–profitability trade-off theory proposed by Garcia and Martinez (2007) that an organization requires to have a tradeoff between liquidity and profitability by holding optimum liquidity. According to Pourali and Arasteh (2013), the trade-off theory stresses that companies try to strike a balance between their profitability and the cost of keeping liquid assets in order to maintain an optimal level of liquidity. By showing a negative relationship between working capital and ROE, the findings support the theory by emphasizing that commercial banks must determine the appropriate level of working capital by balancing the costs of maintaining it with the revenues produced from it.

The study findings working capital had a significant and negative influence on the financial performance of the commercial banks agrees with the findings by Lyngstadas and Berg (2016) in a study in Norway. This study determined that reduction of the current ratio increased profitability. However, the study findings contradict the findings by Kanji (2017) who conducted research on the impact of working capital on the financial performance of service organizations listed on the NSE. The study results showed a substantial association between various variables of working capital in affecting the financial performance of service firms listed on the NSE.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter contains an overview of the major results, as well as the study's conclusions and recommendations. The results related to the study goals and research questions are presented in the summary. As a result, the results answered the study questions. The conclusions reached are based on the main research results, and suggestions for policy and practice improvement are included. The study's shortcomings are also discussed in this chapter. Finally, the chapter makes recommendations for further study.

5.2 Summary of Findings

The study findings established that capital adequacy had a significant and negative influence on financial performance measured through ROA ($\beta = -0.3186$, $t = -5.43$, $p < 0.05$). The implication of these findings is that commercial banks with a lower capital adequacy outperformed those with higher capital adequacy. The findings also indicate that changing capital adequacy would inversely change ROA, when all other factors are kept constant. Moreover, the study findings indicated that capital adequacy had no significant influence on financial performance measured through ROE ($\beta = 0.4091$, $t = 1.29$, $p = 0.200$). The implication of these findings is that capital adequacy of the commercial banks was not instrumental in influence the commercial bank's financial performance in terms of their ROE. The findings also indicate that changing capital adequacy for commercial banks is not expected to have any significant influence on financial performance of the commercial banks measured through ROE.

Though capital adequacy is important because they ensure that commercial banks have adequate buffer to withstand a fair level of losses before going bankrupt and losing depositor

money, having too high capital adequacy indicates that commercial banks are not taking advantage of leverage and the benefits that can emanate from leverage, according to the findings. Though a commercial bank with a high capital adequacy ratio is generally seen to be secure and capable of meeting its financial commitments, having too high ratio above the statutory minimum may hurt financial performance of commercial banks based on the study findings.

The study determined that board composition had no significant influence on the financial performance of the commercial banks as indicated by ROA ($\beta = -0.2555$, $t = -0.11$, $p = 0.91$). The implications of these findings are that the percentage of female members of the board amongst the board of directors do not have any influence on the financial performance of the commercial banks in Kenya. Besides, the findings imply that changing the proportion of the gender of board members is not expected to result to any significant changes in financial performance of the commercial banks. Board composition also had no significant influence on the financial performance of the commercial banks as indicated by ROE ($\beta = -1.64$, $t = -0.13$, $p = 0.893$), according to the study findings. This also implies that the percentage of female board members in relation to the board size do not have any influence on the financial performance of the commercial banks in Kenya. Regarding gender board composition, the argument that having more women on the board will improve the organization's performance is based on the assumption that having more women on the board will increase the board's cognitive diversity, as female board members are said to have different knowledge, experience, and perspectives than men. The results of the research, however, refuted this assertion.

The study findings determined that management efficiency had a significant and negative influence on financial performance measured through ROA ($\beta = -0.2105$, $t = -11.43$, $p < 0.05$). Since management efficiency was measured using the ratio of operating expenses to operating income higher ration shows lower management efficiency and vice versa. This means

that commercial banks with a higher management efficiency outperformed those with low management efficiency. The findings also indicate that changing management efficiency by the commercial banks would inversely change ROA, when all other factors are kept constant. Furthermore, the study findings indicated that management efficiency also had a significant and negative influence on financial performance measured through ROE ($\beta = -0.9342$, $t = -9.37$, $p < 0.05$). These findings indicate that efficiency with which management of commercial banks produce operational revenue through conventional intermediation and non-intermediation operations, as well as net interest and noninterest income, is critical. Despite the increasing complexity of banking organizations, management capacity for earnings capability, efficiency, risk-taking, and leverage may all be seen as important determinants of financial performance.

The findings from the study established that working capital (CR) had no significant influence on the financial performance of the commercial banks as indicated by ROA ($\beta = -0.7792$, $t = -1.01$, $p = 0.312$). This implies that working capital indicated by the liquidity ratio did not have a significant influence on the financial performance of the commercial banks in Kenya. Besides, the findings imply that changing the liquidity ratio for the commercial banks is not expected to result to any significant changes in financial performance of the commercial banks. However, the study findings showed that working capital had a significant and negative influence on the financial performance of the commercial banks as indicated by ROE ($\beta = -8.3384$, $t = -2.00$, $p = 0.047$). The implication of these findings is that commercial banks with a higher liquidity ratio were outperformed by those with lower liquidity ratio. The findings also indicate that changing working capital would inversely change ROE.

5.3 Conclusions

Considering the findings of the study, the following conclusions are made. The study concludes that capital adequacy is instrumental in influencing financial performance of commercial banks in Kenya in terms of ROA but not instrumental in influencing ROE.

The study also concludes that board composition in terms of gender is not vital for financial performance of the commercial banks in Kenya. These findings do not support the literature on gender diversity on corporate boards which provides a business case. However, the study adds to the increasing body of knowledge on board gender diversity by elucidating the association between gender composition in corporate boards. Though board composition had no influence on financial performance, the study concludes that there is underrepresentation of women on corporate boards.

Furthermore, the study concludes that management efficiency is essential for financial performance of commercial banks in Kenya both in terms of ROA and ROE. These findings relate with the efficient-market structure theory which proposes that more efficient banks may create greater market shares and make higher profits as a result of competitive pricing facilitated by efficient performance rather than market power tactics. This is because high overhead expenses and interest spreads are characteristic of less efficient commercial banks. The notion of management efficiency was used to describe how well operational costs are utilized to generate operational income. The study concludes that only efficient banks can provide greater services at a reasonable cost to their clients and hence guaranteeing profitability for its shareholders.

Lastly, the study concludes that working capital is not vital for enhancing ROA but is critical in relation to its effect on ROE. The study also concludes that the significance of liquidity for the return to shareholders is highlighted, though its significance on the return to all financiers of the banks' assets is not supported. Hence, the findings from this study

underscores the need to balance between liquidity and profitability; keeping optimum (not too much and not too little) liquidity to have smooth operations and at the same time ensuring that the liquidity is just enough to enhance profitability.

5.4 Recommendations of the Study

The research offers the following recommendations based on its findings. First, the study recommends to Central bank of Kenya to be vigilant to ensure that the minimum CAR for commercial banks in Kenya is met by all banks. The study however, determined that there were some banks which had CAR below the statutory minimum, thus putting the sustainability of such banks in jeopardy. CBK should closely monitor such commercial banks and ensure that they take positive steps towards strengthening their capital bases. For management of commercial banks, the study recommends that as far as commercial banks are within the statutory capital threshold, they should use leverage to enhance their financial performance.

Regarding management efficiency, the study recommends to commercial banks in Kenya to have a suitable and organized policy framework to guarantee financial management efficiency. This would ensure that banks have the sufficed quality and quantity of financial and human capital to safeguard the bank's financial performance and stability. Furthermore, the study suggest that commercial banks should safeguard against other major causes of inefficiency, such as inappropriate labour allocation and utilization, to ensure that commercial banks human resources that are being used to their full potential. Besides, commercial banking operations should be expanded or superfluous human resources should be rationalized to reach optimum operating levels, since this has a direct impact on the bank's financial performance. Besides, commercial banks should continue to instil a culture of innovation in its human resources and take full advantage of technological advances to enhance efficiency.

Regarding board composition in terms of gender, though the study determined that board composition does not have any influence on financial performance, the study recommends for the commercial banks to have a gender balance, which is may be vital for other forms of non-financial performance for the commercial banks. The board of directors' monitoring function is an essential corporate governance control tool, particularly in countries like Kenya where external procedures are underdeveloped. The gender makeup of the board may have an impact on the quality of this monitoring function and, as a result, the firm's long-term success. Though the study findings did not support the “business case” for increase in women serving on boards, there can be an ethical case for increasing women representation in boards.

Despite the fact that this study determined that working capital was negatively associated with ROE, this study recommends to commercial banks to carefully balance their liquidity ratio to balance the risk and returns that come from holding liquid assets and liabilities. Since commercial banks must retain a significant amount of liquid assets while also being profitable in order to remain viable, it is recommended that when they attain the set liquidity levels, increasing this liquidity beyond the statutory levels will be hurtful to their ROE and hence it is not recommended. This study determined that liquidity and profitability (ROE) are inversely linked; as liquidity rises, profitability falls, and vice versa. However, considering the importance of liquidity, trade-off is vital.

5.5 Limitations of the Study

This study provides critical evidence on how key firm characteristics influence financial performance of commercial banks in Kenya. However the study has some limitations which should always be considered when interpreting and applying the findings beyond the context. First, this study only focussed on commercial banks and did not include other key players in

the financial sector including microfinance banks, SACCOs and investment banks. The findings from this study may hence not provide conclusive evidence on how the key firm characteristics such as board composition, capital adequacy, working capital and management efficiency influence financial performance in the firms in these sectors.

This study also focussed on financial performance which is not the only measure of performance in the commercial banks. The study did not incorporate other non-financial measures of performance which include customer satisfaction, learning and growth, market factors and other non-financial performance indicators. Therefore, the evidence in this study may not inform how the studied firm characteristics can influence these other non-financial measures. Besides, the study did not incorporate other critical firm characteristics such as asset quality, and leverage and other corporate governance mechanisms that may influence financial performance in commercial banks. Other variables that the study failed to incorporate are board independence, board traits, board openness and accountability, board tenure, board's talent diversity, and board experience.

5.5 Recommendations for Future Research

Commercial banks in Kenya were studied, in this research while omitting other key players in the financial sector including microfinance banks, SACCOs and investment banks. A study on these other entities of the financial sector is recommended to understand how these key characteristics such as board composition, capital adequacy, working capital and management efficiency influence financial performance in these sectors. Such a study should also have size of the entity as control or moderating variables to understand how these factors affect performance and how they are moderated by the size of the entity.

The research also suggests that, in addition to the financial performance aspects examined in this study, additional measures of performance such as customer satisfaction,

learning and growth, market factors and other non-financial performance indicators should be used. Further, further research should consider other critical characteristics such as asset quality, and leverage and other corporate governance mechanisms that may influence financial performance in commercial banks. Other variables to consider are the board independence, board traits, board openness and accountability, board tenure, board's talent diversity, and board experience. A study of how these variables affect financial performance would be invaluable in influencing policy and practice that would improve financial performance and stewardship in the financial sector.

REFERENCES

- Abel, S., Issues, P. L. R.-J. of E. and F., & 2016, U. (2016). Determinants of banking sector profitability in Zimbabwe. *Journal of Economics and Financial Issues*, 6(3), 845–854.
- Abutabenjeh, S., & Jaradat, R. (2018). Clarification of research design, research methods, and research methodology: A guide for public administration researchers and practitioners. *Teaching Public Administration*, 36(3): 237-258.
- Ahmadi, A., Nakaa, N., & Bouri, A. (2018). Chief Executive Officer attributes, board structures, gender diversity and firm performance among French CAC 40 listed firms. *Research in International Business and Finance*, 44: 218-226.
- Ahmed, N., & Afza, T. (2019). Capital structure, competitive adequacy and firm performance: evidence from Pakistan. *Journal of Advances in Management Research*.
- Aissa, S. B., & Goaid, M. (2016). Determinants of Tunisian hotel profitability: The role of managerial efficiency. *Tourism management*, 52: 478-487.
- Akenga, G. (2017). Effect of liquidity on financial performance of firms listed at the Nairobi Securities Exchange, Kenya. *International Journal of Science and Research*, 6(7): 279-285.
- Alabdullah, T. T. Y. (2018). The relationship between ownership structure and firm financial performance: Evidence from Jordan. *Benchmarking: An International Journal*.
- Allen, D. E., McAleer, M., Powell, R. J., & Singh, A. K. (2016). A capital adequacy buffer model. *Applied Economics Letters*, 23(3): 175-179.
- Almaqtari, F. A., Al-Homaidi, E. A., Tabash, M. I., & Farhan, N. H. (2019). The determinants of profitability of Indian commercial banks: A panel data approach. *International Journal of Finance and Economics*, 24(1), 168–185. <https://doi.org/10.1002/IJFE.1655>
- Aluko, O. A., & Ajayi, M. A. (2018). Determinants of banking sector development: Evidence from Sub-Saharan African countries. *Borsa Istanbul Review*, 18(2), 122–139. <https://doi.org/10.1016/J.BIR.2017.11.002>
- Anachoni, D. C., & Jagongo, A. (2020). Short-term financing decisions and financial performance of commercial banks in Kenya. ... *Academic Journal of Economics and ...*, 3(5), 62–74.
- Antoun, R., Coskun, A., Horizons, B. G.-B. and E., & 2018, undefined. (2018). Determinants of financial performance of banks in Central and Eastern Europe. *Ceeol.Com*, 14, 513–529. <https://doi.org/10.15208/beh.2018.37>
- Asensio, A. (2017). Insights on endogenous money and the liquidity preference theory of interest. *Journal of Post Keynesian Economics*, 40(3): 327-348.
- Asiamah, N., Mensah, H. K., & Oteng-Abayie, E. F. (2017). General, target, and accessible population: Demystifying the concepts for effective sampling. *The Qualitative Report*, 22(6): 1607.

- Asiamah, N., Mensah, H. K., & Oteng-Abayie, E. F. (2017). General, target, and accessible population: Demystifying the concepts for effective sampling. *The Qualitative Report*, 22(6): 1607.
- Assenga, M. P., Aly, D., & Hussainey, K. (2018). The impact of board characteristics on the financial performance of Tanzanian firms. *Corporate Governance: The international journal of business in society*.
- Azar, J., Marinescu, I., & Steinbaum, M. (2019, May). Measuring labor market power two ways. In *AEA Papers and Proceedings*, 109, 317-21.
- Baltagi, B. H. (2021). *Econometric analysis of panel data*. Springer Nature.
- Bonanno, A., Russo, C., & Menapace, L. (2018). Market power and bargaining in agrifood markets: A review of emerging topics and tools. *Agribusiness*, 34(1): 6-23.
- Bongoye, G. M., Banafa, A., & Kingi, W. (2016). Effect of Firm Specific Factors on Financial Performance of Non-Financial Firms Listed at Nairobi Securities Exchange. *Imperial Journal of Interdisciplinary Research*, 2(12): 253-265.
- Chipeta, C., & Deressa, C. (2016). Firm and country specific determinants of capital structure in Sub Saharan Africa. *International Journal of Emerging Markets*.
- Chiu, J., Davoodalhosseini, M., Jiang, J. H., & Zhu, Y. (2019). Bank market power and central bank digital currency: Theory and quantitative assessment, Bank of Canada.
- Chukwu G.J & Egbuhuzor C.A (2017). Tangible Assets and Corporate Performance: Evidence from the Manufacturing Industry in Nigeria. *Research Journal of Financial Sustainability Reporting*, 2(1): 271-277
- Culham, J. (2020). Revisiting the concept of liquidity in liquidity preference. *Cambridge Journal of Economics*, 44(3): 491-505.
- Dzingai, I., & Fakoya, M. B. (2017). Effect of corporate governance structure on the financial performance of Johannesburg Stock Exchange (JSE)-listed mining firms. *Sustainability*, 9(6): 867.
- Ebenezer, O. O., Omar, W. A. W. Bin, & Kamil, S. (2017). Bank specific and macroeconomic determinants of commercial bank profitability: Empirical evidence from Nigeria. *International Journal of Finance & Banking Studies*, 6(1), 25–38.
- Ejim, E. (2021). What Is the Importance of Commercial Banks? *Smart Capital*.
- Gara, A. (2021). America's Best And Worst Banks 2021. *Forbes*. <https://www.forbes.com/sites/antoinagara/2021/01/28/americas-best-and-worst-banks-2021/?sh=56082a353312>
- Godswill, O., Ailemen, I., Osabohien, R., Chisom, N., & Pascal, N. (2018). Working capital management and bank performance: Empirical research of ten deposit money banks in Nigeria. *Banks and Bank Systems*, 13(2), 49–61. [https://doi.org/10.21511/bbs.13\(2\).2018.05](https://doi.org/10.21511/bbs.13(2).2018.05)

- GRM, G., & Yogendrarajah, R. (2013). The impact of capital adequacy & tangibility on firms' financial performance: A study of Sri Lankan banking & insurance companies listed in Colombo stock exchange. *ACADEMICIA: An International Multidisciplinary Research Journal*, 3(1).
- Habib, A., & Hasan, M. M. (2017). Managerial ability, investment efficiency and stock price crash risk. *Research in International Business and Finance*, 42: 262-274.
- Irungu, A. M. (2019). Effect of firm level factors on financial performance of listed firms in the Nairobi Securities Exchange (Doctoral dissertation, JKUAT-COHRED).
- Jarallah, S., Saleh, A. S., & Salim, R. (2019). Examining pecking order versus trade-off theories of capital structure: New evidence from Japanese firms. *International Journal of Finance & Economics*, 24(1): 204-211.
- Kamarudin, F., Sufian, F., & Nassira, A. (2016). Global financial crisis, ownership and bank profit efficiency in the Bangladesh's state owned and private commercial banks. *Contaduría y Administración*, 61(4), 705–745.
- Kanji, J. M. (2017). Effect of Working Capital On Financial Performance Of Service Firms Listed At The Nairobi Securities Exchange (Doctoral dissertation, University of Nairobi).
- Kayani, A. P. (2018). Behavioral Biases Effect on the Performance of Stocks Listed In the Nairobi Securities Exchange (NSE) Kenya (Doctoral dissertation, United States International University-Africa).
- Lavoie, M., & Reissl, S. (2019). Further insights on endogenous money and the liquidity preference theory of interest. *Journal of Post Keynesian Economics*, 42(4): 503-526.
- Lotto, J. (2016). Efficiency of capital adequacy requirements in reducing Risk-Taking behavior of Tanzanian commercial banks.
- Lyngstadaas, H., & Berg, T. (2016). Working capital management: evidence from Norway. *International Journal of Managerial Finance*.
- Mahrous, A., Genedy, M. A., & Kalliny, M. (2020). The impact of characteristics of intra-organizational environment on entrepreneurial marketing adequacy and performance in Egypt. *Journal of Entrepreneurship in Emerging Economies*.
- Manyaga, C. B., Muturi, W., & Oluoch, O. (2020). Board Gender Diversity and Financial Performance of Commercial Banks in Kenya. *Journal of Finance and Accounting*, 8(1), 1–10.
- Marwa, M. W. (2018). Factors Influencing financial Performance of Commercial. 11.
- Mootian, A. W. (2020). Effect of Selected Firm Specific Factors on Financial Performance of Real Estate Firms Listed at the Nairobi Securities Exchange in Kenya, Unpublished Doctoral dissertation, Egerton University.
- Muiruri, S. M. (2018). Effect of Board Composition On Financial Performance Of Commercial Banks In Kenya (Doctoral Dissertation, Kenyatta University).

- Munene, F., & Tibbs, C. Y. (2018). Accounts receivable management and financial performance of Embu Water and Sanitation Company Limited, Embu County, Kenya. *International Academic Journal of Economics and Finance*, 3(2): 216-240.
- Myers, & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), 187-221.
- Nangih, E., & Onuora, J. K. J. (2020). Capital Adequacy and Firm Profitability Interconnectedness in Nigeria.
- Naseem, M. A., Xiaoming, S., Riaz, S., & Rehman, R. U. (2017). Board attributes and financial performance: the evidence from an emerging economy. *The journal of developing areas*, 51(3): 281-297.
- O'Neill, P., Sohal, A., & Teng, C. W. (2016). Quality management approaches and their impact on firms' financial performance, An Australian study. *International Journal of Production Economics*, 171:381-393.
- Oeta, S. M., Kiai, R., & Muchiri, J. (2019). Capital Adequacy and Financial Performance of Manufacturing Companies Listed at Nairobi Securities Exchange.
- Oeta, S., Kiai, R., & Muchiri, J. (2019). Influence of tax planning on financial performance of manufacturing companies listed at Nairobi Securities Exchange. *International Journal of Research in Business and Social Science*, 8(6), 262-270.
- Ogunyomi, P., & Bruning, N. S. (2016). Human resource management and organizational performance of small and medium enterprises (SMEs) in Nigeria. *The International Journal of Human Resource Management*, 27(6): 612-634.
- Otwani, M. N. (2018). Moderating Effect of Board Composition on the Determinants of Financial Performance of Companies Listed on the Nairobi Securities Exchange in Kenya, Unpublished Doctoral dissertation, JKUAT-COHRED.
- Panda, A. K., & Nanda, S. (2018). Working capital financing and corporate profitability of Indian manufacturing firms. *Management Decision*.
- Pusch, T. (2017). The role of uncertainty in the euro crisis—an application of liquidity preference theory. *International Review of Applied Economics*, 31(4): 527-548.
- Ranajee, B. (2018). Factors Influencing Profitability of Banks in India. *Theoretical Economics Letters*, 8(14).
- Robin, I., Salim, R., & Bloch, H. (2018). Financial performance of commercial banks in the post-reform era: Further evidence from Bangladesh. *Economic Analysis and Policy*, 58, 43–54. <https://doi.org/10.1016/J.EAP.2018.01.001>
- Saastamoinen, A. (2015). Heteroscedasticity or production risk? A synthetic view. *Journal of Economic Surveys*, 29(3): 459-478.
- Sarkar, S., & Rakshit, D. (2021). Factors Influencing the Performance of Commercial Banks: A Dynamic Panel Study on India. *FIIB Business Review*, 231971452110215. <https://doi.org/10.1177/23197145211021564>

- Shaheen, S., & Malik, Q. A. (2012). The impact of capital adequacy, size of firm and profitability on debt financing in textile industry of Pakistan. *Interdisciplinary Journal of Contemporary Research in Business*, 3(10): 1061-1066.
- Simionescu, L. N., Gherghina, Ș. C., Tawil, H., & Sheikha, Z. (2021). Does board gender diversity affect firm performance? Empirical evidence from Standard & Poor's 500 Information Technology Sector. *Financial Innovation* 2021 7:1, 7(1), 1–45. <https://doi.org/10.1186/S40854-021-00265-X>
- Slama, R. Ben, Ajina, A., & Lakhali, F. (2019). Board gender diversity and firm financial performance in France: Empirical evidence using quantile difference-in-differences and dose-response models. [Http://Www.Editorialmanager.Com/Cogentecon](http://www.editorialmanager.com/Cogentecon), 7(1). <https://doi.org/10.1080/23322039.2019.1626526>
- Thumbi, G. W., & Ragui, M. (2019). Environmental Factors and Performance of Commercial Banks in Kenya. *International Journal of Current Aspects*, 3(6), 149–175. <https://doi.org/10.35942/IJCAB.V3I6I.83>
- Wanyoike, H. W., Onyuma, S. O., & Kung'u, J. N. (2021). Working capital management practices and operational performance of selected supermarkets with national network. *International Journal of Research in Business and Social Science*, 10(2), 72–85. <https://doi.org/10.20525/IJRBS.V10I2.994>
- Yulianto, A., Suseno, D. A., & Widiyanto, W. (2016). Testing Pecking Order Theory and Trade Off Theory Models in Public Companies in Indonesia. *International Journal of Economic Perspectives*, 10(4), 21-28.

APPENDICES

Appendix 1: List of Listed Commercial Bank in Kenya

1. The Co-operative Bank of Kenya Ltd
2. KCB Group Ltd
3. Diamond Trust Bank Kenya Ltd
4. Absa Bank
5. Equity Group Holdings
6. I&M Holdings Ltd
7. Stanbic Holdings
8. Standard Chartered Bank Ltd
9. HF Group Ltd
10. National Bank of Kenya Ltd
11. NIC Group PLC

Appendix II: Data Collection Sheet

BANK	Year	Equity	Assets	Current liabilities	Operating costs	Profit	Female members	Board size
Absa Bank	2015							
	2016							
	2017							
	2018							
	2019							
KCB Group Ltd	2015							
	2016							
	2017							
	2018							
	2019							
.....	2015							