EFFECT OF FINANCIAL SOUNDNESS INDICATORS ON THE DEGREE OF DIVERSIFICATION IN COMMERCIAL BANKS IN KENYA

BY

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MASTER OF SCIENCE IN COMMERCE

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DECLARATION

Student's Declaration

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

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

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And have certified that all revisions that the research dissertation panel and examiners will be recommended have been adequately addressed.

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ABSTRACT

Commercial banks are essential to global economies, with Kenyan banks contributing significantly, holding 78.55% of total savings. However, challenges in Kenyan commercial bank performance have led to a consideration of diversification as a means to boost returns and manage risks. This study explored how financial soundness indicators impact diversification in Kenyan commercial banks, examining metrics like capital, high-quality assets, effective management, and liquidity. It drew on four theoretical frameworks—agency theory, buffer capital theory, financial intermediation theory, and stakeholders' proposition—to provide a structured understanding of the situation. The research focused on 36 licensed commercial banks operating in Kenya as of December 2022, analyzing data from 2016 to 2021. Data was sourced from the Central Bank of Kenya's website and banks' annual financial reports, analyzed using STATA software and various tests including heteroscedasticity, correlation, autocorrelation, multicollinearity, and normality tests. Findings showed that capital adequacy, asset quality, and liquidity management significantly influenced diversification levels, with a notable decline in 2018 attributed to political instability following elections. Recommendations include establishing a clear framework for banks to implement financial soundness indicators, especially in asset quality, capital adequacy, management efficiency, and liquidity management. Ensuring bank efficiency is vital for financial sector stability and safeguarding savings. In summary, this study finds that capital adequacy, asset quality, management efficiency, and liquidity management play significant roles in diversification among Kenyan commercial banks. Political instability in 2018 exposed potential risks in banks' diversification strategies. To enhance diversification, effective implementation of financial indicators is crucial, though this study's focus on commercial banks and reliance on secondary data were mitigated through thorough analysis.

Keywords: Management efficiency, asset quality, capital adequacy, liquidity, and the degree of diversification.

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ACRONYMS AND ABBREVIATIONS

FSI: Financial Soundness Indicators

BHC: Bausch Health Companies

CAMELS: Capital Adequacy Asset Quality Management Earning Liquidity and Sensitivity

CBK: Central Bank of Kenya

DEA: Data Envelopment Analysis

GDP: Gross Domestic Product

NPLs: Nonperforming Loans

ROA: Return on Assets

ROE: Return on Equity

ROI: Return on Investment

DEFINITION OF TERMS

Asset Quality: Asset quality, according to Alhassan and Andoh (2019), refers to a bank's capacity to generate the appropriate returns on time and in compliance with its contractual responsibilities.

Capital Adequacy: Capital adequacy is the measure of capital that protects depositor funds and shields the bank from the potential threat of liquidation. This is typically calculated as the ratio of a bank's capital to its total assets or deposits, according to Akhter (2018).

Degree of Diversification: A concept that describes a company expanding into new business areas by organic expansion, acquisitions, or through having numerous goods and ventures in different industries (Kipleting, 2019).

Financial Soundness Indicators: Financial Soundness Indicators (BFI) are a comprehensive indicator of a country's fiscal institutions' present financial health. Asset quality, capital sufficiency, profitability, economic viability, and bank liquidity are the indicators listed by Ifeacho et al. (2018).

Liquidity: According to Akhter (2018), liquidity is a banking organization's ability to pay down maturing liabilities when they come due. These responsibilities include loan requests, deposit withdrawals, and other liabilities.

Management Efficiency: Alhassan, & Andoh (2019) define management efficiency as a type of financial management that measures the management's management of working capital and other company resources.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In the transformative era of the 1990s, significant financial shifts characterized African countries, prompting banks to formulate strategies to capitalize on non-traditional banking activities. Non-interest income, derived from unconventional sources, can manifest through diverse avenues such as asset sales, fees, overdraft fines, withdrawals, and analogous sources (Abuzayed et al., 2018). The repercussions of diversification resonate across both the income statement and the financial position statement of banks, urging a meticulous evaluation of these factors when deciding between a focused (specialist) strategy or a diversified approach. Despite the burgeoning interest from financial decision-makers, bankers, policymakers, and academics in the domain of bank diversification, a considerable research gap persists, particularly in the context of Africa, with a specific focus on Kenya (Alhassan, 2017).

Globally, the imperative for bank diversification in emerging nations during the post-crisis period of change was evident in 14 East Asian and South American countries (Sakouvogui & Shaik, 2020). Bollen et al. (2020) delved into the impact of banking activity diversification, revealing that as diversification increases, profit margins dwindle, and cost components surge. This insight emerged from an exhaustive examination of 88 Chinese banks operational between 1996 and 2006, comparing the concentration of bank activity against its diversity. Notably, the

study concluded that heightened funding for diversification bolstered the efficiency of Norwegian banks.

The landscape of interstate bank deregulation, as outlined by Gulati et al. (2019), resulted in banks extending their reach across broader geographic areas. However, this expansion adversely affected the value of Bausch Health Companies (BHC), underscoring that heightened complexity, driven by external factors, could enable insiders to exploit opportunities for personal gain, albeit at the detriment of the bank's overall value. Piskorski et al. (2019) contributed to this discourse through a study on 96 Austrian commercial banks spanning 2007 to 2013, revealing that increased diversification correlated with reduced reliance on borrowed funds, alleviating the financial burden on banks.

On a regional scale, the supplementation of non-interest payments in the face of low interest income emerged as a crucial factor in sustaining the financial stability of Ghanaian banks, as elucidated by Damankah & Abubakar (2015). Adamu et al.'s (2019) investigation into the impact of product diversification on the financial stability of specific Nigerian construction banks shed light on the intricate interplay between diversification and stability. Alemu (2017) uncovered a negative statistically significant correlation between the profitability of Ethiopian banks and variables such as liquidity risk, functional effectiveness, funding costs, and banking sector development, based on an extensive examination of data from 2002 to 2013.

Kenya, within the African context, has been a focal point for diverse studies exploring the nuanced relationships between banking variables. Mochabo's (2017) findings among Kenyan commercial banks listed on the Nairobi Stock Exchange underscored a substantial positive

correlation between bank diversity, geographic dispersion, and localized financial crises. Otieno and Moronge (2020) delved into the impact of technology, information flow, new demands, and innovation on the financial performance of commercial banks in Kenya, further contributing to the intricate mosaic of factors influencing diversification. Arasa's (2020) study highlighted that geographic diversification enhanced the performance of Kenya's commercial banks, while Ogada's (2016) research among new bank entrants yielded no significant correlation between diversity and financial performance.

In a comprehensive exploration of the Nairobi Stock Exchange in Kenya, Mokabo's (2017) study revealed a positive correlation between financial distress and regional diversification among commercial banks, further emphasizing the dynamic nature of these relationships within the intricate fabric of the financial landscape.

In conclusion, the evolving narrative of bank diversification, shaped by financial changes, external factors, and geographic nuances, unfolds as a multifaceted exploration. The intricate dance between diversified strategies, financial stability, and regional dynamics underscores the need for continued research and analysis to illuminate the path forward for African countries, with Kenya serving as a poignant microcosm of this complex financial ecosystem.

1.1.1 Financial Soundness Indicators

FSIs are comprehensive indicators that assess the overall financial health of a nation's financial institutions. Ifeacho et al., (2018) identified CAMELS as the financial soundness indicators: Capital Adequacy, Asset Quality, Management, Earnings, Liquidity, and market risk sensitivity.

Seyedi and Abdoli (2019) found that other bank soundness variables and determinants affecting the financial soundness of commercial banks include asset quality, liquidity, profitability, and capital adequacy. Asset quality assesses the probability of bank loan defaults by analyzing the ratio of non-performing loans to total bank loans. According to Ongore et al., (2018), a lower ratio of non-performing loans denotes bank lending of greater quality. The amount of capital that banks maintain as a safety net for their loans and other assets is known as capital adequacy (Mendoza & Rivera, 2017). The capital to total assets ratio is commonly used in empirical studies to assess capital adequacy, management earnings, liquidity, and sensitivity (CAMELS).

Both empirical and theoretical research have looked at the link between a bank's financial stability and its amount of diversification. According to empirical research (Matthew & Oduntan, 2018), the efficiency and performance of associated companies are highly impacted by the bank's financial soundness indicators. According to Ifeacho et al., (2019), the main metrics used to evaluate a bank's soundness are liquidity, asset quality, capital sufficiency, profitability, and market risk sensitivity. These measures are commonly utilized to assess the financial status of a nation's business, household, and financial sectors.

Capital adequacy is a crucial indicator for the stability of commercial banks. In previous studies, capital adequacy has been commonly measured using the Total Equity to Total Assets ratio (Gupta & Jain, 2015). This ratio represents the proportion of a bank's total equity (including common and preferred stock) in relation to its total assets. In the current study, capital adequacy was also measured using the Total Equity to Total Assets ratio, following the established methodology.

Asset quality reflects the health of a bank's loan portfolio. A commonly used measure for asset quality in prior research is the Nonperforming Loans to Gross Loans ratio (Abu-Bader & Abu-Qarn, 2008). This ratio quantifies the proportion of nonperforming loans, which are loans that are not generating interest income, relative to the total gross loans issued by a bank. In our study, we will assess asset quality using the Nonperforming Loans to Gross Loans ratio, consistent with existing literature.

Management efficiency is crucial for optimizing the utilization of a bank's assets. Asset Turnover Ratio is a widely used metric in past studies to measure management efficiency (Berger & DeYoung, 1997). This ratio gauges the effectiveness of a bank's management in generating revenue from its total assets. In our research, we will also employ the Asset Turnover Ratio to evaluate management efficiency, in line with established practices.

Effective liquidity management is essential for a bank's operations. The Current Ratio has been a prevalent measure in previous studies to assess liquidity management (Berger & Bouwman, 2009). This ratio quantifies a bank's ability to meet its short-term obligations by comparing its current assets to its current liabilities. In our current study, we will measure liquidity management using the Current Ratio, consistent with prior research (Berger & Bouwman, 2009).

Some researchers exclude earnings from their analysis for two primary reasons. Researchers will limit their focus by omitting earnings to concentrate more intently on other crucial aspects, such as adequate capitalization, quality assets, competent management, and sufficient liquidity. Secondly, past researchers argue that the selected components provide sufficient insights into financial soundness and risk management capabilities, rendering the inclusion of earnings

redundant (Smith, 2018). This approach allows for a comprehensive assessment of stability. Smith (2018) conducted a study on bank stability and risk profile using the CAMELS framework, and the findings supported the exclusion of earnings as it did not compromise the effectiveness of the analysis.

The analysis will exclude market sensitivity based on the research objectives and data availability. The research will not directly examine market risk or market conditions' impact on financial institutions. Excluding market sensitivity helps maintain focus on other relevant components within the CAMELS framework. Moreover, the researcher will face challenges in obtaining reliable and comprehensive data related to market sensitivity for all institutions under analysis. By excluding market sensitivity, data consistency and comparability can be maintained. Johnson and Thompson (2019) conducted an empirical investigation of financial institution stability using the CAMELS framework and found that excluding market sensitivity did not significantly impact the overall assessment of stability and risk.

In conclusion, researchers may exclude earnings and market sensitivity from the CAMELS framework based on their research objectives and data availability constraints. The exclusion of earnings allows for a more focused analysis of stability and risk, while the exclusion of market sensitivity helps maintain data consistency and comparability. By focusing on components such as adequate capital, high-quality assets, sound management, and liquidity, researchers can obtain comprehensive insights into the financial health and stability of financial institutions. The decision to exclude these components has been supported by previous studies, further justifying their exclusion from CAMELS analysis.

1.1.2 Degree of Diversification

Diversification, as asserted by Damankah and Abubakar (2018), is a linchpin believed to fortify the financial performance of commercial banks in the banking industry by tempering volatility in financial returns. Turkmen and Yigit (2021) align with this widely accepted perspective, contending that diversification profoundly influences the financial success of commercial banks by providing a buffer against losses from one income source through earnings from others. This consensus finds theoretical backing in the understanding of diversification as the internal growth of a company's activities or acquisitions, encompassing the operation of multiple products and businesses across diverse industries (Kipleting, 2019).

The primary forms of diversification manifest as income, product, and geographical diversification. Luo (2020) elucidates product diversification as the extent to which various business lines within a commercial bank are interconnected by a shared skill, demand, objective, or resource. Income diversification, on the other hand, involves a departure from traditional profit-generating activities towards non-intermediation income sources for commercial banks (Stiroh, 2018). Geographical diversification entails expanding an establishment's activities across various regions and sectors. The significant impact of diversification on the functioning of commercial banks and, consequently, their financial performance cannot be overstated, assuming that enhanced diversification mitigates systemic risk in specific sectors, reducing the probability of bank failures. In support of this, Afzal and Mirza (2017) posit that established banks, given their total assets and number of branches, are more likely to offer a wide range of services compared to smaller banks.

The critical role of diversification in augmenting the financial performance of commercial banks is particularly pronounced in the Kenyan context. The banking industry in Kenya has undergone various regulatory regimes that have exerted a discernible impact on its financial performance over time (Damankah et al., 2018). Notably, a pivotal regulatory change occurred in 2016 with the implementation of an interest rate cap. This legislative measure was instituted in response to concerns about the high cost of borrowing, hindering credit accessibility for many Kenyan citizens (Saoussen & Plihon, 2021). The anticipation was that this law would lower borrowing expenses and improve credit availability. According to the Central Bank of Kenya (2020), this regulatory shift substantially influenced banks' interest revenue, prompting them to diversify and supplement their interest income.

A comprehensive study by Saoussen and Plihon (2021) delved into the impact of the interest rate ceiling on Kenya's banking industry. Their findings indicated a decrease resulting from the interest rate cap in interest income for banks, limiting their ability to generate profits from traditional lending activities. Consequently, commercial banks in Kenya found themselves compelled to diversify their income sources to counterbalance the adverse effects of the interest rate cap.

In this regulatory landscape, diversification became imperative for commercial banks in Kenya, emerging as a strategic tool to enhance financial performance amidst regulatory constraints. Damankah and Abubakar (2018) and Turkmen and Yigit (2021) substantiate the notion that diversification minimizes volatility in financial returns, allowing banks to offset losses from one income source with earnings from others. By expanding their activities and venturing into

non-intermediation income-generating activities, banks sought to mitigate the impact of the interest rate cap on their profitability.

In the realm of financial research, evaluating the degree of diversification within commercial banks assumes paramount importance. Researchers have employed diverse metrics to quantify this aspect, with one notable measure being the ratio of non-interest income to total operating income. This metric serves as a barometer for understanding how banks generate income from non-traditional activities, offering insights into their diversification levels (Demirgüç-Kunt & Huizinga, 1999). Notably, Demirgüç-Kunt and Huizinga (1999) utilized this ratio to explore the impact of banking regulations on risk-taking in banks, revealing that banks with a higher proportion of non-interest income relative to total operating income were generally more diversified. This underscores the significance of this ratio as a proxy for assessing the degree of diversification within a bank.

In the current research landscape, the researcher adopted the ratio of non-interest income to total operating income as a key metric to measure diversification among Kenyan commercial banks. This methodological choice aligns with established research practices, facilitating comparability with prior studies. The overarching aim of the research was to unravel how financial soundness indicators correlate with the diversification levels of Kenyan banks, underscoring the pivotal role of non-traditional income sources in evaluating their diversification strategies.

In conclusion, diversification emerges as a cornerstone for commercial banks seeking to fortify their financial performance, particularly in the face of regulatory constraints. The introduction of an interest rate ceiling in the Kenyan banking industry led to a decline in interest

income for banks, necessitating the diversification of income streams to counteract the negative consequences of the policy. Kenyan commercial banks strategically employed diversification to navigate the challenges posed by the interest rate cap, ultimately enhancing profitability by tapping into new revenue streams and diversifying their business lines. This dynamic interplay between regulatory changes, diversification strategies, and financial performance illuminates the resilience and adaptability of commercial banks in navigating a complex and evolving financial landscape.

1.1.3 Financial Soundness Indicators and Degree of Diversification

Previous studies have established a significant association between capital adequacy and diversification. For instance, research by Demirgüç-Kunt and Huizinga (2004) indicated that well-capitalized banks are more inclined to engage in diversification strategies to spread risk. In our analysis, we anticipate that a higher Total Equity to Total Assets ratio, indicating better capital adequacy, will positively impact the degree of diversification.

Asset quality has also been examined in relation to diversification. A study by Anginer, Demirgüç-Kunt, and Zhu (2014) found that banks with better asset quality tend to diversify their portfolios more effectively. In line with this finding, we expect that a lower Nonperforming Loans to Gross Loans ratio, indicating healthier asset quality, will be positively associated with a higher degree of diversification.

Management efficiency is another critical factor affecting diversification. Prior research by Berger and DeYoung (1997) revealed that efficient management can lead to more diversified loan

portfolios. Therefore, we anticipate that a higher Asset Turnover Ratio, reflecting greater management efficiency, will positively influence the degree of diversification.

Liquidity management is crucial for banks when considering diversification strategies. Research by Berger and Bouwman (2009) suggested that banks with stronger liquidity positions are better positioned to engage in diversification. Accordingly, we hypothesize that a higher Current Ratio, indicating improved liquidity management, will positively correlate with a higher degree of diversification.

In summary, the researcher examined these relationships through regression analysis to determine the extent to which financial soundness indicators, including capital adequacy, asset quality, management efficiency, and liquidity management, influence the degree of diversification in Kenyan commercial banks.

1.1.4 Commercial Banks in Kenya

There are currently 38 licensed commercial banks in Kenya (CBK, 2023). Two banks, Imperial Bank and Chase Bank, are currently under receivership, and Dubai Bank is in liquidation. Charterhouse Bank operates under statutory authority. Commercial banks hold most domestic deposits. Equity Bank Ltd., Kenya Commercial Bank, Cooperative Bank of Kenya Limited, Absa Bank Kenya Ltd., Standard Chartered Bank, and National Bank of Kenya, among others, dominate the commercial banking sector in Kenya. These significant commercial banks have also established many branches in remote parts of the country and across regional boundaries. While some smaller banks may specialize in domestic commerce and others in importing and financing

installations, most banks in Kenya participate in the overall banking system, as stated on the website of the Central Bank of Kenya. Commercial banks' liquidity indicates their capacity to finance capital increments and fulfill their liabilities upon maturity.

1.2 Problem Statement

In an ideal scenario, commercial banks play a pivotal role in bolstering economic development by optimizing diversification in their portfolios. This diversification leads to lower borrowing costs, spurs economic growth, and fosters trust among customers and investors, ultimately attracting more investments in the banking sector (Magweva & Maritime, 2016; IMF, 2013). Such ideal diversification not only enhances banks' long-term viability but also ensures the provision of crucial payment systems for businesses.

Regrettably, the Kenyan banking sector faces several challenges that hinder this ideal diversification. These issues encompass declining credit growth, liquidity and deposit problems, and a limited degree of diversification in bank portfolios. These challenges have led to diminishing returns, as evidenced by the declining average Return on Assets (ROA) from 3.7% in 2010 to 2.96% in 2014, further to 2.70% in 2018, and estimated at 2.50% in 2022 (CBK, 2014; CBK, 2018; CBK, 2022). The Return on Equity (ROE) also decreased from 26.5% in 2008 to 20.8% in 2018 and further declined to 19.5% in 2022 (CBK, 2018; CBK, 2022). The primary culprits for this declining financial performance include constraints on portfolio diversification, reduced credit growth to the private sector, and regulatory limitations on asset types that banks can hold (CBK, 2019; Mutua et al., 2022).

Various studies have explored the performance of banks in different contexts, examining factors such as financial stability, income diversification, and the impact of product diversification on financial performance (Berger, Hasan, & Zhou, 2010; Damankah et al., 2015; Sigve & Lars, 2017; Kenyoru, 2016; Ogada, 2016; Otieno & Moronge, 2014). However, there remains a gap in the literature. Previous studies often lacked a comprehensive assessment of how banks' financial health relates to their diversification levels. They used diverse data sources and assessed diversification in varying ways, failing to delve into the nuanced effects of specific financial soundness indicators on the degree of diversification. This study aims to bridge these theoretical, methodological, and conceptual gaps by conducting an in-depth analysis of how financial soundness indicators affect the degree of diversification in Kenyan commercial banks. By addressing these gaps, we intend to provide a clearer understanding of the intricate relationship between measures of financial health and bank diversification, ultimately offering insights to enhance the long-term viability and economic impact of commercial banks in Kenya.

1.3 Objective of the Study

1.3.1 General Objective

The main purpose of the study was to examine the effect of financial soundness indicators on the degree of diversification in commercial banks in Kenya

1.3.2 Specific Objectives

i. To examine the effect of capital adequacy on the degree of diversification in Commercial Banks in Kenya

ii. To determine the effect of asset quality on the degree of diversification in Commercial Banks in Kenya

iii. To analyze the effect of management efficiency on the degree of diversification in Commercial Banks in Kenya

iv. To assess the effect of liquidity management on the degree of diversification in Commercial Banks in Kenya

1.4 Research Questions

i. What is the effect of capital adequacy on the degree of diversification in Commercial Banks in Kenya?

ii. To what extent does asset quality affect the degree of diversification in Commercial Banks in Kenya?

iii. What is the effect of management efficiency on the degree of diversification of Commercial Banks in Kenya?

iv. To what extent does liquidity management affect the degree of diversification in Commercial Banks in Kenya?

1.5 Significance of the Study

Policymakers in the banking sector will appreciate the contribution of this study, which will provide a variety of ways to comprehend the constraints and issues that affect the financial performance of the banking sector. The new guidelines will allow commercial banks to prioritize different activities. The study will emphasize the degree of diversification as a strategy for improving the financial soundness and stability of the banking system and the extent to which commercial banks adhere to it to prevent unfair runs, receiverships, and liquidations, or the control of commercial banks. It will provide a framework for regulators to develop rules that will be implemented. The findings will encourage government innovation to protect banking institutions, especially during tough economic times.

Given their role as engines of economic growth and the need to maximize shareholder returns, reliable information about the impact of decisions on the level of bank diversity is needed. The results of this study will assist bankers in creating more effective business strategies to enhance diversity within their banks. It will also aid in developing corrective programs and plans to support the overall operations of the banks. The study's findings suggest that banking professionals should encourage their institutions to diversify even further and work to improve their production strategies.

Suppose researchers and students understand how financial indicators impact the role of diversification in commercial banks in Kenya, they will be more likely to use the study's sources and follow the ethical guidelines required in the academic and research fields. This knowledge will help them make informed decisions and contribute to advancing academic research. The study's

findings will be especially significant for this group of people since they will help them better grasp how different financial soundness indicators improve diversification in the banking system.

1.6 Scope of the Study

The study was primarily concerned with determining how different financial soundness indicators affect how diversified Kenyan commercial banks are and learning more about the effect of these various metrics. This study used secondary data from 36 registered commercial banks in Kenya to ascertain whether commercial banks have been adopting financial soundness measures and how that has affected their level of diversity. Two banks were ostracized due to inadequate data. The underlying reason for considering the variables of the CAMELS mode in this study which are capital adequacy, asset quality, management efficiency, liquidity, and sensitivity, was based on the fact that in terms of size, it all relies on the fact of having an available capital by an entity as well as that earning ability linked to the response variable and sensitivity to the market presents a measurement challenge and therefore the underlying reason for using the four variables. This also considered that there is a need for more timelines to synthesize all the variables of financial soundness indicators fully. It therefore extrapolated information from commercial banks' websites and the Central Bank of Kenya utilizing secondary data for the six years between 2016 and 2021. The dependent and independent variables of the study supported this.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

A literature review evaluates previous studies, opinions, and relevant information about a proposed research topic. This enhances the comprehension and valuation of previous research conducted in this field. This study focused on the theoretical and empirical framework, literature review, identification of research gaps, and a summary of the impact of financial indicators on the diversification level of commercial banks in Kenya.

2.2 Theoretical Framework

In this part, the study's theoretical foundation is discussed, and the propositions supporting the study was reviewed. Four propositions were formulated to showcase the essential connection between the effect of financial soundness indicators and the degree of diversification. In this investigation the following hypotheses were used to guide the work and better characterize, explain, predict, and manage the issue at hand: agency theory, buffer capital theory, financial intermediation theory, and stakeholders' theory.

2.2.1 Buffer Capital Theory

Caleb and Rob (1999) introduced the Buffer Capital Theory, which suggests that financial institutions, once they meet the minimum capital requirements, may seek to augment their capital

to mitigate the risk of non-compliance with capital standards (Kohler, 2015). Undercapitalized banks face heightened risk when attempting to enhance and diversify their investments due to the absence of expected high returns (Diamond & Rajan, 1999).

This theory holds significant relevance to the research topic concerning the degree of diversification in commercial banks in Kenya. It posits that the capital adequacy of banks can influence their capacity for diversification. Banks with higher capital levels are better positioned to undertake diversification strategies and manage risks effectively. Adequate capital allows for resource allocation across various sectors and asset classes, reducing concentration risks and promoting portfolio diversification.

Another perspective through which the Buffer Capital Theory connects to the research topic is that of risk management. Capital adequacy is essential for banks in managing and mitigating risks associated with diversification. Banks with higher capital levels can absorb potential losses from diversified activities, thus reducing overall risk exposure. Adequate capital buffers act as a cushion against unexpected losses, decreasing the likelihood of financial distress and maintaining the stability of commercial banks (Flamini et al., 2009).

Additionally, the theory aligns with regulatory compliance. Regulators impose minimum capital requirements on banks to ensure their solvency and protect depositors and the financial system as a whole (Demirgüç-Kunt & Huizinga, 2010). Financial soundness measures, particularly capital sufficiency, significantly influence commercial bank diversification in Kenya, emphasizing the importance of regulatory compliance. Banks that maintain adequate capital levels not only

fulfill regulatory requirements but also have the flexibility to pursue diversification strategies within the regulatory framework.

Despite its merits, the Buffer Capital Theory has faced criticism from several scholars in recent years. Avgouleas (2016) argues that capital buffers alone may not be sufficient to prevent bank failures during financial crises. Laeven and Valencia (2017) express concerns about potential distortions in capital allocation and credit markets stemming from the theory. Makri and Tsoukas (2019) suggest that capital buffers may inadvertently incentivize banks to take on more risk, and Battiston et al. (2016) question the theory's effectiveness in mitigating systemic risk.

In response to these criticisms, it is important to note that the Buffer Capital Theory underscores the importance of banks maintaining surplus capital to withstand unforeseen challenges. While critics raise valid concerns, this theory provides valuable insights into the necessity of capital adequacy as a foundational element of financial stability. The theory also highlights the importance of regulatory frameworks, countercyclical buffers, and financial soundness indicators in promoting financial stability and diversification in commercial banks, particularly in the Kenyan context.

In conclusion, the Buffer Capital Theory is pivotal in understanding how banks can maintain financial stability and pursue diversification. While it has encountered criticism, its core message remains valuable. Capital adequacy, regulatory frameworks, and risk management are integral aspects of ensuring the resilience and profitability of commercial banks, especially in the dynamic environment of Kenyan banking. The theory's significance lies in its ability to explain

the role of surplus capital beyond the minimum requirements and its impact on commercial bank capitalization and profitability.

2.2.2 Agency Theory

From the 1960s to the early 1970s, economists examined the challenges of sharing the burden of threats that emerged when bringing together parties with varying perspectives on threats, particularly among individuals and groups. The concept of agency proposition has been extensively discussed in the literature, with various interpretations provided (Williamson, 1979). Ross (1973) is credited with developing the agency proposition, which focuses on the agency's profitability. Mitnick (2006) focused on the institutional proposition's agency aspect. Jensen and Meckling (1976), proponents of this agency, remain influential. Grossman et al., (1980) proposed a thesis that justified government security and protection. The concept of agency emerged as a distinct proposition in the early 1970s. Ross and Mitnick (1993) introduced the agency proposition concept in 1973.

The concept of agency principals elucidates and defines the commercial relationship between agents and principals. Jensen and Meckling (1976) define agency proposition as a contract where principals delegate specific tasks to an agent to perform on their behalf. The agent may also be given some power to make decisions under this deal. The agency proposition offers solutions to potential issues arising from multiple connections between incidental or contractual parties. The issues include agency costs, moral hazard, and adverse selection. Cost reduction and revenue

inefficiencies heighten the bank's future risk. This aligns with the concept of moral hazard and can impact the quality of bank assets (Fiordelisi et al., 2020).

According to Caves and Patrick (2020), the principal's dilemma can motivate agents to act consistently with the principal's goals. The agent's behavior, whether aligned with the principal's interest, self-interest, or a combination of both, is contingent upon the circumstances that give rise to conflicting interests. Williamson (1985) highlighted opportunism as a key aspect of agency theory. The agency hypothesis contends that managers may put their interests ahead of the shareholders, resulting in agency costs that lower business value.

Liquidity management is an important financial soundness indicator that reflects a bank's ability to meet its short-term obligations. Poor liquidity management may indicate that managers need to prioritize their interests over those of shareholders, which can reduce firm value. This connection is supported by the research of Gao and Zhang (2020), who found that liquidity risk management can help mitigate agency costs in Chinese commercial banks. Moreover, ensuring high levels of liquidity can help commercial banks manage risk and improve their overall financial soundness. This is because strong liquidity management allows banks to weather unexpected events, such as sudden loan defaults or market liquidity increases.

On top of that, liquidity management is closely tied to a bank's ability to generate profits and maintain financial stability over the long term. By maintaining high levels of liquidity, banks can ensure that they have the resources needed to take advantage of profitable opportunities while protecting themselves against potential losses. Finally, effective liquidity management can help commercial banks build trust with their stakeholders, including shareholders, regulators, and

customers. By demonstrating that they can meet their short-term obligations and manage risk effectively, banks can improve their reputation and increase stakeholder confidence in their ability to deliver long-term value.

The theory is pertinent to this study as it emphasizes the importance of disseminating precise information among stakeholders to attain financial stability in commercial banks impacted by operational efficiency. Commercial banks need to maximize the use of their resources, including their assets and capital, to cut their operating costs (interest expenditure) and boost their efficiency. According to Fernando et al., (2015), bank directors' high risk-taking tendencies can lead to low loan quality. Therefore, shareholders should monitor directors' behavior and implement appropriate control measures to reduce potential agency conflicts. Providing relevant information and efficient cost-monitoring methods to system stakeholders is essential for addressing asymmetric knowledge. This idea is compatible with broad and liquidity operations, crucial to financial institutions' soundness.

In conclusion, the Agency Proposition theory, with its origins dating back to the 1960s and early 1970s, provides a valuable framework for understanding the dynamics of agency relationships, particularly within the context of commercial banks. This theory underscores the complexities involved in aligning the interests of principals and agents and offers insights into mitigating issues such as agency costs, moral hazard, and adverse selection. Despite criticisms and challenges related to agency conflicts, the theory remains robust, especially when applied to topics like liquidity management and financial stability in the banking sector. By addressing the concerns raised by critics and emphasizing the importance of information dissemination, resource

optimization, and risk management, this theory contributes significantly to enhancing the soundness and efficiency of commercial banks, making it a relevant and enduring concept in contemporary financial research and practice.

2.2.3 Financial Intermediation Theory

Diamond (1984) introduced the concept of financial intermediation, which revolves around financial intermediaries offering financial services to lower the cost of transactions and information asymmetries. These intermediaries accept deposits from those with surplus funds and lend to those in need of capital. The profitability of financial intermediaries is linked to offering prices below their direct and indirect operating costs (Scholtens & Van Wensveen, 2003).

The financial intermediation theory offers valuable insights into the relationship between management efficiency and the degree of diversification in commercial banks, aligning with the research topic (Adesina, 2021). It emphasizes efficient resource allocation, risk management, and managerial decision-making in banks. Management efficiency plays a pivotal role in a bank's capacity to allocate resources effectively and identify profitable investment opportunities. Banks with high management efficiency are more likely to execute robust diversification strategies, which enable them to maximize returns while minimizing risks related to concentrated exposures (Adesina, 2021).

Scholars have raised certain criticisms regarding the financial intermediation theory. Some argue that it might not adequately address financial soundness indicators, such as capital adequacy ratios, asset quality, and liquidity ratios, which are crucial for ensuring the stability of financial

intermediaries (Calomiris et al., 2015). Others point out the need for Kenyan commercial banks to embrace technology to enhance intermediation activities, thereby increasing financial inclusion and improving intermediation activities (Wang et al., 2018). Additionally, there is an argument for the adoption of competitive strategies by Kenyan commercial banks to enhance intermediation activities and attract more customers (Kimutai, 2019).

Despite the criticisms, financial intermediation theory has strengths that can address these concerns. Monitoring financial soundness indicators, embracing technology, and adopting competitive strategies are indeed pivotal aspects suggested by scholars to improve the theory. These improvements align with the research topic as they underscore the necessity for Kenyan commercial banks to diversify their financial offerings, enhance financial inclusion, and remain competitive in the market.

In conclusion, financial intermediation theory provides a valuable framework for understanding the relationship between management efficiency and the degree of diversification in commercial banks. It emphasizes the importance of efficient resource allocation, risk management, and customer confidence in driving diversification efforts. Despite criticisms, the theory has been improved through the suggestions of scholars, which emphasize the need for Kenyan commercial banks to diversify their financial products and services, increase financial inclusion, and remain competitive in the market. By understanding and implementing these principles, commercial banks in Kenya can strengthen their financial intermediation role and contribute to a more robust and diversified banking sector.

2.2.4 The Stakeholder Theory

Richard (1984) developed the stakeholder proposition 1984, which extends the agency proposition to establish a duty of care between managers and stakeholders interested in the organization. Value creation, trade, and the moral principles of capitalism have all been plagued by challenges that, according to Freeman (2010), the stakeholder's proposition was designed to solve. The organization's creation was intended to address operational and ethical concerns in managing commercial enterprises as they impact stakeholders' interests. Friedman and Miles (2002) conceptualized the idea differently. Donaldson and Preston (1995) argue that businesses serve as an organizational vehicle for individuals with conflicting goals to negotiate by providing support and materials.

The quality of the bank's assets is a primary measure of the institution's overall financial health in commercial banks. According to stakeholder theory, bank executives are responsible for managing assets in a way that maximizes value for all stakeholders (Omowunmi, 2012). This means effective asset management can improve financial soundness and diversification in commercial banks. Stakeholder theory suggests that different stakeholder groups may have conflicts of interest regarding asset quality management. For instance, shareholders may favour short-term gains above long-term stability, resulting in better asset management decisions. This can negatively impact the financial soundness and diversification of commercial banks.

The effectiveness of asset quality management in commercial banks can be influenced by the level of engagement and participation of various stakeholder groups (Ye & Zhang, 2021). According to stakeholder theory, increased engagement and participation can help align the

interests of bank executives with those of stakeholders, leading to improved asset management and, consequently, improved financial soundness and diversification.

The stakeholder approach considers the relationships between stakeholders involved in or affected by business operations. Socially responsible businesses use this approach to determine good operational practices (Freeman et al., 2010). This proposition lends its support to an agency proposition that needs to satisfactorily address the concerns of all relevant stakeholders, including commercial investors, portfolio managers, stockbrokers, and financial analysts. These stakeholders require precise information to make profitable investment decisions. It also affected the scholars, researchers, and leaders who came after (Freeman et al., 2010). The stakeholder proposition, previously used to identify corporate information needs, is relevant to this study (Obafemi et al., 2013). This proposition ensures information consistency and prevents information asymmetry, aligning with the agency theory (Jensen & Meckling, 1976).

Mitchel et al., (1997) proposed that establishing a distinct boundary between the business units and relevant stakeholders is crucial for ensuring banking operations' financial feasibility and efficacy. They established a framework of interdependent relationships that ought to be present. Brenner and Cochran (1991) claim that the stakeholder theory of a company accomplishes two significant goals.

This document outlines the operational structure of an organization and aids in forecasting its future actions. This theory aims to establish guidelines for firms to advance the interests of all stakeholders, including those beyond the scope of agency theory, including customers, suppliers, investors, financial analysts, portfolio managers, banking regulators, governments, and employees.

This idea has been criticized for contravening market economy principles by utilizing the political notion of a social contract to regulate a company (Mansell, 2013).

Scholars have raised certain criticisms regarding the financial intermediation theory. Some argue that it might not adequately address financial soundness indicators, such as capital adequacy ratios, asset quality, and liquidity ratios, which are crucial for ensuring the stability of financial intermediaries (Calomiris et al., 2015). Others point out the need for Kenyan commercial banks to embrace technology to enhance intermediation activities, thereby increasing financial inclusion and improving intermediation activities (Wang et al., 2018). Additionally, there's an argument for the adoption of competitive strategies by Kenyan commercial banks to enhance intermediation activities and attract more customers (Kimutai, 2019).

Despite the criticisms, financial intermediation theory has strengths that can address these concerns. Monitoring financial soundness indicators, embracing technology, and adopting competitive strategies are indeed pivotal aspects suggested by scholars to improve the theory. These improvements align with the research topic as they underscore the necessity for Kenyan commercial banks to diversify their financial offerings, enhance financial inclusion, and remain competitive in the market.

Blattberg (2004) challenges the notion that the interests of multiple stakeholders can be equally accommodated or addressed. Defining the scores and interests of stakeholders is essential to ensure and enhance functional efficiency for the enterprises they control or operate. The proposition's theoretical applicability to this study is based on Donaldson et al., (1995). The association should inform all stakeholders about its operations to gain support for its efficacy and

growth. The proposal focuses on exploring assets based on stakeholder feasibility analysis to improve the quality of a given reality, particularly in the context of diversification within the banking sector. This proposal is crucial as it recognizes the significance of stakeholders in determining the value of a financial institution's assets by regularly assessing their positions.

2.3 Empirical Review

An empirical literature review, commonly called a methodological literature review, examines previous empirical studies to answer a specific research question. In this section, the literature on how commercial banks in Kenya's financial health affects their level of diversification was examined

2.3.1 Capital Adequacy and Degree of Diversification

The term "capital adequacy" refers to the amount of equity that safeguards depositors' money and reduces the risk of bank closure. It is assessed by examining the ratio of a bank's equity to its total deposits (Akhter, 2018). The research explores whether increasing capital levels enhances banking stability and the efficiency of the intermediation process. Banks with higher equity ratios to total assets are better positioned to protect depositors' investments in loans, thus facilitating more effective intermediation as they can engage in more lending activities (Maghyereh & Awartani, 2017). On the other hand, banks with lower equity ratios may have limited protection against liquidation but may still provide credit during economic downturns (Nasieku, 2017).

Olweny and Shipho (2017) investigate the influence of bank-specific traits on the success of Kenya's commercial banks, including factors such as capital adequacy, asset quality, cost-effectiveness, and income diversification. Their study reveals that bank-specific criteria significantly impact profitability, highlighting the importance of these factors. In a similar vein, Olarewaju and Akande (2017) examine the variables affecting capital adequacy in Nigeria's banking sector. They assess the direct relationship between bank capital and the availability of funds for lending, as well as the relationship between bank capital and risk tolerance, efficiency, and stability. These findings underline the vital role of capital acceptability in banking operations. The research conducted an empirical examination of the factors affecting capital adequacy in Kenyan commercial banks from 2016 to 2021. Data were collected from commercial banks' periodic reports in Kenya and Central Bank of Kenya reports. A fixed effect panel regression model was employed for statistical analysis. This methodological choice allows for rigorous statistical evaluation of the research hypotheses.

Ezike and Oke (2018) delve into the consequences of adopting capital adequacy standards on Nigerian banks' viability. They analyze data between 2003 and 2007, spanning the implementation of the Basel Accord in Nigeria in December 2005. The study indicates that capital sufficiency significantly impacts banks' performance and demonstrates how adherence to capital acceptability standards contributes to financial stability.

Weersainghe and Ravindra (2017) explore the connection between commercial banks' profitability and capital acceptability in Sri Lanka. Their research, utilizing a multiple-panel

regression model, suggests that capital acceptability positively and significantly affects commercial banks' profitability.

In summary, the research studies discussed various aspects related to capital adequacy and its impact on banking operations, profitability, and stability. These studies used different methodologies, including panel regression analysis and data from various regions, to shed light on the crucial role of capital acceptability in the banking sector. The findings underscore the importance of maintaining sufficient capital levels to protect depositors, support effective intermediation, and enhance overall financial stability in banking systems.

2.3.2 Asset Quality and Degree of Diversification

A bank's asset quality is its profitability relative to its contractual obligations in a given time frame. The condition of a bank's loan portfolio is frequently assessed using non-performing loan (NPL) to gross loan ratios (Alhassan & Andoh, 2019). The empirical literature suggests that non-performing loans, often NPLs, are negatively associated with commercial banks' functional efficacy. This shows that having many NPLs may result in rationing loans at high interest rates, making banks impractical. (Gulati et al., 2019). Piskorski and Witkin (2018) found that banks with high non-performing loan (NPL) ratios exhibited lower productivity than those with lower NPL ratios. Odunga and Mwarumba (2018) showed that asset quality's credit risk negatively impacted banking financial institutions' operating efficiency.

Bhattarai (2017) researched asset quality's influence on Nepalese commercial banks' financial performance using secondary data and a dataset that aggregated information from 14

banks and 77 compliances from 2010 to 2015. The period covered by the research was from 2010 to 2015. The retrogression analysis indicates that the Non-Performing Loan rate significantly affects shareholders' returns. Additionally, asset quality has an adverse impact on overall bank profitability, Return on Investment (ROI), and Return on Equity (ROE). The study suggests that larger banks experience a notable enhancement in profitability, as measured by return on investment (ROI) and return on equity (ROE). There exists a positive correlation between the cost per loan and the overall profitability of a bank, specifically in terms of return on investment (ROI). It is difficult to predict if accelerating GDP growth would result in significant improvements beyond shareholder returns on equity (ROE). According to the findings of this study, the proportion of non-performing loans, along with other characteristics such as bank size, cost per loan asset, and the rate of development in the gross domestic product, all influence the profitability of Nepalese commercial firms. Additionally, this study found that the increase in gross domestic product impacts the profitability of Nepalese commercial firms.

Adebisi and Matthew (2018) explored how asset quality affects a company's financial performance. Commercial banks were chosen for the study because they were easy to access and had relevant data. A detailed design method was used. The survey covered all commercial banks in Nigeria. Secondary information was gleaned from the Central Bank of Nigeria's Annual Banking Supervision Report. Data analysis was done using SPSS version 20.0. The study incorporated correlation coefficients (r) and coefficients of determination and analyzed variance using t-tests (ANOVA) at a 5% significance level. Profitability was found to be statistically impacted by all of the asset quality criteria. Additional metrics that could be used to illustrate the

financial performance of commercial banks include capitalization, operational effectiveness, profit trends, and liquidity. The level of the company's assets and its financial success were negatively correlated.

Onuonga (2019) assessed Kenya's financial stability by analyzing its six leading commercial banks. According to the findings, the degree to which Kenya's six largest commercial banks are financially stable is substantially influenced by various factors, including bank size, asset quality, procurement, process costs, and diversity. Sufian et al., (2018) investigated the factors that affect Philippine commercial banks' profitability. The panel models covered the years 2000 through 2015. Their research found that asset quality affects Philippine commercial bank profits. This study examined the potential differences between Kenyan and Philippine commercial banks' operational and commercial practices. Vong et al., (2019) examined how profitable Macao's commercial banks focused on their return on assets (ROA) from 2003 to 2017. The panel model design was used for the empirical inquiry. ROA exhibits a significant negative correlation between asset quality and commercial bank performance.

Endah et al., (2018) conducted research from 2010 to 2016 on the profitability and liquidity risk of Indonesian commercial banks with domestic and foreign ownership. According to their findings, commercial banks' profitability at home and overseas was significantly impacted by the quality of their assets. Nzoka (2015) found a connection between the quality of a bank's assets and its financial performance. Commercial banks were chosen for analysis because of the study's descriptive approach and the relative simplicity of its 21 techniques. All 43 of Kenya's commercial banks were evaluated.

2.3.3 Management Efficiency and Degree of Diversification

Since large and established commercial banks also frequently exhibit further cost inefficiency, there is generally anticipated to be a direct negative correlation between diversification and operational effectiveness. Maghyereh and Awartani (2019) claim that skilled researchers frequently find a connection between financial institutions' operational efficiency and profitability indicators. Casu and Molyneux (2018) assessed the efficiency of various European banks via the Probit regression model by considering bank efficiency. The empirical results showed that high effectiveness conditions persisted, with country-specific characteristics accounting for most banks' effectiveness.

A study carried out on Chinese commercial banks by Li et al., (2018) concluded that the degree of diversification is affected favorably and significantly by the management effectiveness of the banks. In order to estimate the input-oriented data envelopment analysis (DEA) model and subsequently regress the efficiency score on the level of diversity, the study analyzed a selection of 107 Chinese commercial banks from 2010 to 2015. Chinese commercial banks were the target market. Management effectiveness has a favorable and statistically significant effect on the extent to which Chinese commercial banks are diversified, according to research by Li et al., (2018).

Furthermore, in a study on Malaysian commercial banks, Sufian et al., (2018) discovered that management effectiveness has a favorable and significant effect on diversification. The study used a panel data regression model and a representative group of 22 Malaysian commercial banks spanning 2010 to 2015. The commercial banks of Malaysia were the target market. According to

Sufian et al., (2018) research, managerial effectiveness significantly and favorably influences the level of diversity in Malaysian commercial banks.

A study on Bangladeshi commercial banks was carried out by Mollah et al., (2020), and the researchers concluded that the degree of diversity is significantly negatively impacted by managerial efficiency. A panel data regression model was utilized in the research, and the sample size was set at thirty Bangladeshi commercial banks operating between 2011 and 2017. Commercial banks in Bangladesh were the target market. Moreover, Alnasser et al., (2019) observed that managerial efficiency does not affect diversification in Saudi Arabian commercial banks. The study used a panel data regression model and a sample of 11 Saudi Arabian commercial banks operated from 2011 to 2016. Commercial banks in Saudi Arabia were the target market.

The financial sector profitability of Malaysian and foreign banks was the main topic of Lamaranas' (2018) study. This comparative study, which analyzed 16 major commercial banks, aims to identify the factors affecting bank profitability in Malaysia between 2005 and 2011. (8 based abroad and 8 owned locally). The researcher used ROA and ROE as dependent variables. However, the size, asset quality, managerial effectiveness, liquidity, and bank capitalization level are independent considerations.

Abebe (2017) investigated the internal and external elements that affected the Ethiopian bank's financial performance. The study examined information from 2002 to 2013. When employing a fixed-effect regression model, the institution's performance was statistically unaffected by profit variation, asset structure, liquidity, and operational costs. As measured by ROA, the size of the banks showed a substantial link with production. Researchers discovered that

outside factors had no discernible bearing on academic institutions' success. Bank financial soundness and management quality were not examined in the study.

Alhassan and Tetteh (2017) used data from the 26 universal banks in Ghana between 2003 and 2011 to examine the relationship between income diversity, size, and effectiveness. According to the study, productivity and profit diversification have a nonlinear relationship, with bank size significantly affecting a bank's capability to profit from income diversification. Also, it was shown that bigger banks performed better than less established banks.

Aguenaou et al., (2017) research examined Moroccan banks' financial performance from 2004 to 2014. The five CAMEL factors; capital sufficiency, asset quality, management effectiveness, earnings performance, and liquidity were used in the study as independent variables, and the effectiveness rate served as the dependent variable. Secondary data from six Casablanca Stock Exchange-listed banks was analyzed using panel data. The study's findings indicate that while management effectiveness and effectiveness are negatively correlated, capital acceptability, asset quality, earnings performance, and liquidity positively correlate with banks' effectiveness, with capital acceptability having the greatest influence.

2.3.4 Liquidity Management and Degree of Diversification

The ability of banking organizations to settle commitments when they become due is known as liquidity management or operation. Loan requests, deposit recessions, and other arrears are among the requirements (Akhter, 2018). Financial institutions' insolvency can lead to customer withdrawals, a decline in the bank's creditworthiness, and potential contractual liability, according

to research by Adam et al., (2018). Gao (2016) observed a clear inverse relationship between effectiveness and Liquidity. Conversely, Osazefua (2019) finds a negative correlation between the Malesian commercial banking organizations' effectiveness and Liquidity. The research depicted that banks were retaining much Liquidity, barring them from taking advantage of any opportunities that the money would bring if it were put into resources that would generate income.

In order to investigate the connection between working capital and its effects on Liquidity, profitability, and bankruptcy risk, Panigrah (2018) carried out a study in India. The study examined data from 2005 to 2014 using an exploratory research style. The study results showed that the aggressive policy for working capital had a bad effect on working capital.

Sanghani (2019) conducted a study focusing on non-financial companies listed on the NSE to investigate the impact of Liquidity on performance. The study was carried out between 2010 and 2014. The research utilized multiple direct retrogression analyses to assess the issues. The study showed that capital structure, operating cash overflows, and the current rate significantly and favorably affect performance. According to the report, businesses should increase their current assets to improve their liquidity conditions.

A study was carried out by Molefe and Muzindutsi (2018) to investigate the impact that capital and liquidity operations have on the profitability of the most successful banks in South Africa. From 2004 to 2014, the study analyzed five of South Africa's largest banks. According to the report, capital adequacy is the primary measure for assessing how sound financial institutions are in South Africa. The connection between Liquidity and profitability could have been better for

the top five South African banks. The study results suggest that banks should revise their liquidity operation procedures to establish optimal liquidity positions.

Adusei (2017) examined how bank size and liquidity threat impacted indigenous bank stability in Ghana. From 2009 Q1 through 2013 Q4, data on daily transactions was made available by Ghana's rural banks. The study's main macroeconomic and bank-specific variables were credit threat, profitability, Gross Domestic Product (GDP), liquidity threat, diversification, and financial structure. According to Lukorito et al., (2017), Liquidity has a noteworthy effect on profitability. However, it was found that the biggest factor affecting banks' liquidity ratios was their size. The findings demonstrate that bigger banks frequently make more revenue because of economies of scale. According to the study, income levels are raised by possessing assets in a highly liquid form.

The correlation between bank size and Liquidity was studied by Bowa (2018) for Kenyan commercial banks. The retrogression analysis revealed that the liquidity rate of banks varied according to the size and quality of their resources. However, it was found that the banks' funding rates were most affected by size. The study findings indicate that bigger banks often generate greater profits as a result of benefiting from economies of scale. The study revealed that utilizing predominantly liquid assets enhances financial viability.

Hadad (2018) looked into the elements that impacted the banks' financial performance in upper-eastern Ghana's remote area. The periodic statistics used covered the years from 2005 to 2015. The study utilized a multiple regression model to analyze data and found that the bank's size and Liquidity were positively associated with its product.

Omwoyo and Onsomu (2018) examined the relationship between liquidity risk and Kenyan commercial banks' insolvency. The study aimed to determine how several elements, including scale, leadership, earnings, asset quality, and responsiveness to client needs, affect the long-term health of commercial banks. The study found a substantial and favorable association between the likelihood of bank insolvency and liquidity risk.

Abera (2019) examined the issues impacting Ethiopian commercial banks' profitability. He delved into the macroeconomic, banking-specific, and sector-specific principles that incontinently impacted the Ethiopian banks' profitability. The study utilized a mixed-methods approach and spanned from 2004 to 2015. To get the information, extensive interviews and documentary analysis were used. The study population consisted of the eight commercial banks of the National Bank of Ethiopia (NBE). According to the study's findings, Ethiopian commercial banks' Liquidity and profitability are subject to a natural and considerable influence.

Faris (2016) studied the efficacy of liquidity operations in two Islamic banks, the Islamic International Arab Bank and Islamic Bank. He investigated two Islamic banks' efficient financial performance as a result of their liquidity operation effectiveness. The data also indicated a long-term liquidity problem. He concluded that equity capital and reserves are risky since Return on Asset (ROA) could have been more effective during the study period.

2.4 Knowledge gap

The literature review reveals several gaps in the relationship between bank diversification and financial soundness measures such as adequate capital, asset quality, effective management, and

liquidity management. These knowledge gaps fall into four categories: methodological, theoretical, conceptual, and contextual.

Study	Objective	Methodology	Findings	Gaps Established	How to Address Gaps
Capital Adequacy and Degree of Diversification					
Akhter (2018)	To explore the impact of capital adequacy on banking stability	Multiple-panel regression model	Positive correlation between capital adequacy and banking stability.	Methodological gap: Lack of clarity in methodology.	Provide a clear description of the research methodology, sample size, and data sources to enhance comparability.
Maghyereh & Awartani (2017)	To assess the relationship between equity ratios and intermediation effectiveness	Multiple-panel regression model	Higher equity ratios positively impact intermediation.	Conceptual gap: Lack of consensus on the relationship.	Conduct comprehensive literature reviews to build consensus on the impact of equity ratios on intermediation.
Olweny and Shipho (2017)	To investigate the influence of bank-specific traits on profitability	Multiple-panel regression model	Bank-specific factors significantly impact profitability.	Methodological gap: Lack of clarity in methodology.	Clearly describe research design, timeframes, and data sources for improved comparability.
Olarewaju and Akande (2017)	To examine variables affecting capital adequacy in Nigeria's banking sector	Multiple-panel regression model	Capital adequacy positively affects the availability of funds and bank stability.	Conceptual gap: Lack of clarity in the relationship between capital adequacy and bank stability.	Conduct further research to clarify the nature of the relationship between capital adequacy and bank stability.
Ezike and Oke (2018)	To study the consequences of adopting capital adequacy standards on	Multiple-panel regression model	Adherence to capital acceptability standards contributes to financial stability.	Methodological gap: Lack of clarity in methodology.	Provide clear descriptions of research methodology, sample size, and data sources to enhance comparability.

	Nigerian banks' viability				
Weersainghe and Ravindra (2017)	To explore the connection between capital acceptability and commercial banks' profitability	Multiple-panel regression model	Capital acceptability positively and significantly affects bank profitability.	Theoretical gap: Limited incorporation of financial intermediation theory.	Explicitly incorporate financial intermediation theory to analyze the relationship between capital acceptability and profitability.
Asset Quality and Degree of Diversification					
Alhassan & Andoh (2019)	To analyze the relationship between non-performing loans and bank functional efficiency	Exploratory research design	Non-performing loans negatively impact bank functional efficiency.	Theoretical gap: Limited incorporation of financial intermediation theory.	Explicitly incorporate financial intermediation theory to understand the impact of non-performing loans on bank efficiency.
Bhattarai (2017)	To investigate asset quality's influence on Nepalese commercial banks' financial performance	Exploratory research design	Asset quality negatively impacts profitability and ROI/ROE.	Conceptual gap: Lack of consensus on the impact of asset quality on profitability.	Conduct further research to build consensus on the impact of asset quality on profitability and ROI/ROE.
Adebisi and Matthew (2018)	To explore how asset quality affects financial performance in Nigerian commercial banks	Detailed design method	Asset quality criteria impact profitability.	Conceptual gap: Limited clarity in the relationship between asset quality and profitability.	Clarify the relationship between asset quality and profitability in Nigerian commercial banks through further research.
Onuonga (2019)	To assess Kenya's financial stability and its relation to various factors, including asset quality	Detailed design method	Various factors, including asset quality, influence financial stability in Kenya's banks.	Theoretical gap: Limited incorporation of financial intermediation theory.	Incorporate financial intermediation theory to understand how asset quality influences financial stability in Kenyan banks.
Sufian et al., (2018)	To investigate the factors affecting	Panel models (2000-2015)	Asset quality affects profitability in	Theoretical gap: Limited incorporation	Incorporate financial intermediation theory to analyze the

	Philippine commercial banks' profitability		Philippine commercial banks.	of financial intermediation theory.	relationship between asset quality and profitability in Philippine banks.
Management Efficiency and Degree of Diversification					
Li et al., (2018)	To estimate the impact of management efficiency on the diversification of Chinese commercial banks	Input-oriented data envelopment analysis (DEA) and regression analysis	Management effectiveness positively affects diversification in Chinese banks.	Theoretical gap: Limited incorporation of financial intermediation theory.	Explicitly incorporate financial intermediation theory to understand how management efficiency impacts diversification in Chinese banks.
Sufian et al., (2018)	To examine the impact of management effectiveness on diversification in Malaysian commercial banks	Panel data regression model (2010-2015)	Management efficiency positively affects diversification in Malaysian banks.	Theoretical gap: Limited incorporation of financial intermediation theory.	Incorporate financial intermediation theory to analyze the relationship between management efficiency and diversification in Malaysian banks.
Mollah et al., (2020)	To investigate the effect of managerial efficiency on the degree of diversity in Bangladeshi commercial banks	Panel data regression model (2011-2017)	Managerial efficiency negatively affects diversification in Bangladeshi banks.	Conceptual gap: Lack of clarity in the relationship between managerial efficiency and diversification.	Clarify the nature of the relationship between managerial efficiency and diversification in Bangladeshi banks through further research.
Alnasser et al., (2019)	To examine the impact of managerial efficiency on diversification in Saudi Arabian commercial banks	Panel data regression model (2011-2016)	Managerial efficiency does not affect diversification in Saudi Arabian banks.	Conceptual gap: Lack of clarity in the relationship between managerial efficiency and diversification.	Conduct further research to clarify the relationship between managerial efficiency and diversification in Saudi Arabian banks.

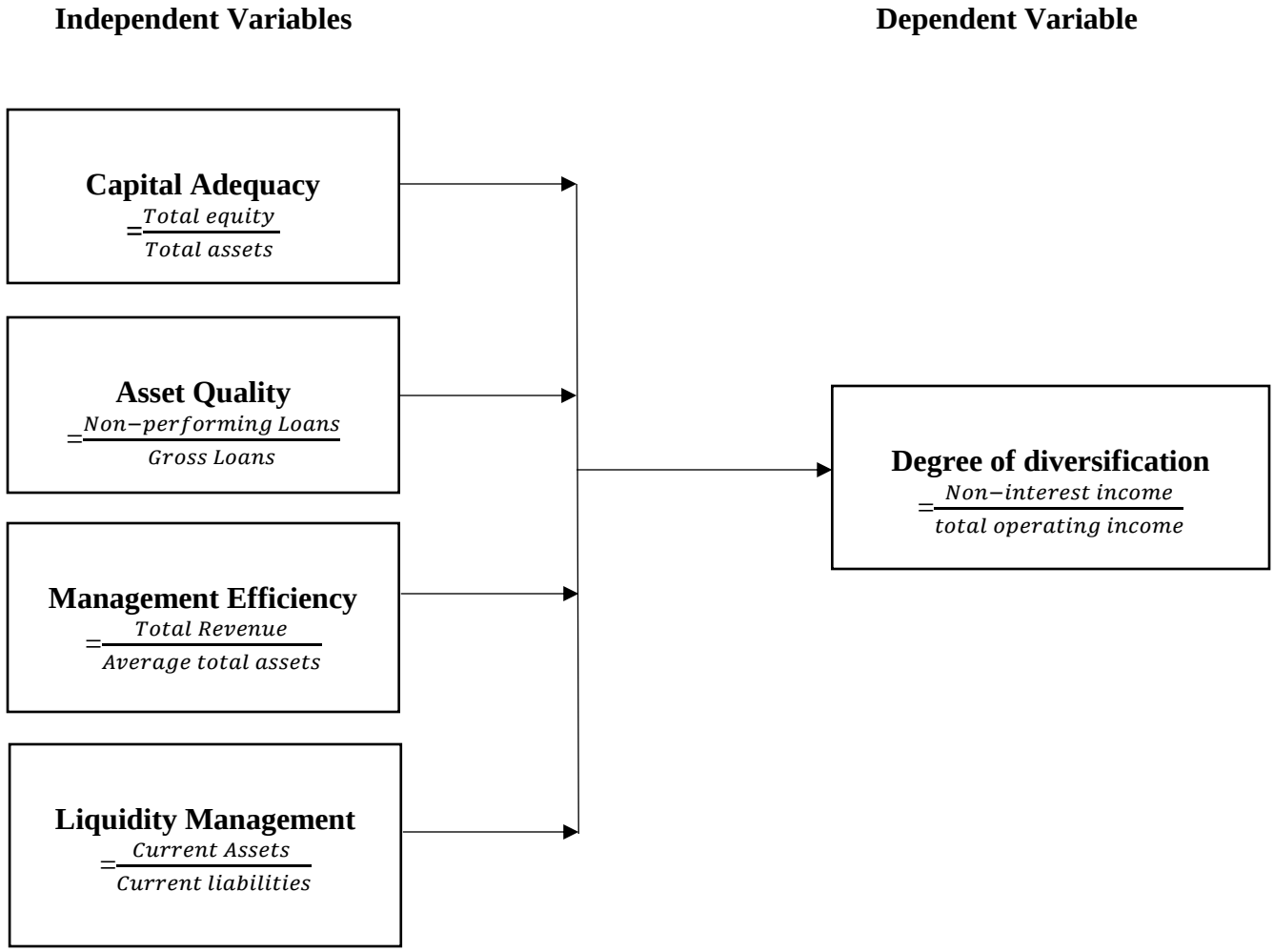
Liquidity Management and Degree of Diversification					
Gao (2016), Osazefua (2019)	To explore the relationship between effectiveness and liquidity management in banking organizations	Detailed design method	Mixed findings on the relationship between effectiveness and liquidity management.	Conceptual gap: Lack of consensus on the relationship between effectiveness and liquidity management.	Conduct further research to build consensus on the impact of liquidity management on effectiveness in banking organizations.
Panigrah (2018)	To investigate the impact of working capital on liquidity, profitability, and bankruptcy risk	Exploratory research design (2005-2014)	Aggressive working capital policy negatively affects working capital.	Conceptual gap: Limited clarity in the impact of working capital on liquidity and profitability.	Clarify the relationship between working capital and liquidity/profitability through further research.
Sanghani (2019)	To examine the impact of liquidity on the performance of non-financial companies listed on the NSE	Multiple direct regression analyses (2010-2014)	Liquidity significantly affects performance, capital structure, and operating cash flows.	Conceptual gap: Limited clarity in the relationship between liquidity and non-financial company performance.	Clarify the impact of liquidity on non-financial company performance through further research.
Molefe and Muzindutsi (2018)	To study the impact of capital and liquidity operations on the profitability of South African banks	Data analysis (2004-2014)	Capital adequacy is crucial for financial institutions in South Africa.	Conceptual gap: Limited clarity in the relationship between capital adequacy, liquidity, and profitability.	Clarify the relationships between capital adequacy, liquidity, and profitability in South African banks through further research.
Adusei (2017)	To examine how bank size and liquidity risk affect indigenous bank stability in Ghana	Data analysis (2009 Q1 - 2013 Q4)	Bank size and liquidity risk impact stability, with bigger banks performing better.	Conceptual gap: Limited clarity in the impact of bank size and liquidity risk on stability.	Clarify the relationships between bank size, liquidity risk, and stability in Ghanaian indigenous banks through further research.

2.5 Conceptual Framework

A conceptual framework depicts the anticipated associations among variables. Reichel and Ramey (2017) discussed the importance of establishing research goals and ensuring that they are aligned to arrive at coherent conclusions. A conceptual framework can be useful as a tool for altering research when it is simple to state, which helps a study by making it simpler to comprehend what was discovered (Smyth, 2018). This study will utilize a conceptual framework to address the exploratory questions. As shown in Figure 1, the framework for this study's ideas was made up of four independent factors and one dependent variable. According to the research, the degree of diversification was defined as a function of capital sufficiency, asset quality, management efficiency, and liquidity management.

2.5.1 Conceptual Framework

FIGURE 1
Conceptual Framework



2.6 Operationalization of Variables

According to Mugenda & Mugenda (2013), operationalizing a variable or concept entails defining it in a form that enables measurement or expression, whether quantitative or qualitative. Because some variables are inherently difficult to measure, operationalizing them is essential. Defining the variable precisely enhances its quality and the effectiveness of the design. Operationalization enhances the strength, clarity, and regularity of variables utilized in the study. This section outlines the methodology for measuring the identified variables using a data collection tool presented in Table 1.

TABLE 1
Operationalization of Variables

Variable	Type of Variable	Indicators	Measurement Tool	Data analysis
Degree of Diversification	Dependent Variable	• The ratio of non-interest income to total operating income	Ratio scale	Descriptive, correlation, and regression analysis

Capital Adequacy	Independent Variable	• Total equity to total assets ratio	Ratio scale	Descriptive, correlation, and regression analysis
Asset Quality	Independent Variable	• Nonperforming Loans to Gross Loans	Ratio scale	Descriptive, correlation, and regression analysis
Management Efficiency	Independent Variable	• Asset Turnover Ratio	Ratio scale	Descriptive, correlation, and regression analysis
Liquidity Management	Independent Variable	• Current ratio	Ratio scale	Descriptive, correlation, and regression analysis

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The methodology used to accomplish the research objectives is described in this chapter. This section discusses the research design and techniques. The target population, sample size and selection, study design, frame technique, research tools, data analysis, and data compilation are all covered in this section.

3.2 Research Design

A research design defines the data acquisition process, the rationale behind the sample size selection, and whether a quantitative or qualitative analysis was conducted (Cooper & Schindler, 2014). Sekaran and Bougie (2017) say that research design helps with exploring, from coming up with research questions and theories to presenting the results. According to Lavrakas (2018), selecting an appropriate exploration design is primarily influenced by the exploration questions, studied variables, population selection, and data collection and analysis methodology. This study used a descriptive research design to collect and analyze quantitative data to achieve the research objectives. Dulock (2018) states that a descriptive study approach is employed to systematically summarize the characteristics and facts of a particular group when utilizing measures such as frequencies, averages, and other statistical data.

3.3 Target Population

According to Kothari (2004), the target population is a real grouping of factors, individuals, or events. Researchers aim to draw inferences from this sample. The researcher was more interested in the population, which contains more observations (Mugenda & Mugenda, 2013). The target audience comprises the 38 commercial banks in Kenya licensed by the Central Bank of Kenya as of December 31, 2022 (CBK, 2023). Appendix II contains the list of commercial banks. The study used a panel data collection that spans six years from 2016 to 2021.

3.4 Sampling Technique and Sample Size

The sampling design outlines the sample size, sampling unit, frame, and methodology for the investigation. The sampling frame contains a list of all population units from which the sample was drawn (Schindler, 2006). The investigation focused only on the 36 active commercial banks in Kenya today. The study employed a census sampling technique, as it included all 36 active commercial banks in Kenya, thus encompassing the entire population of interest without the need for sampling.

3.5 Data Collection Instruments

The researcher utilized Excel and Google Sheets to collect and organize secondary panel data. The annual financial reports of Kenya's commercial banks spanning from 2016 to 2021 were accessed and analyzed using these tools. This secondary data was instrumental in extracting information

related to management effectiveness, asset quality, capital adequacy, and liquidity management for the study.

3.6 Data Collection Procedure

The researcher obtained secondary data from licensed commercial banks in Kenya through their websites and financial reports. These sources provided the necessary information and data for the study without directly involving the researcher in data collection. In order to gather data between 2016 and 2021, established Kenyan commercial banks' yearly financial statements were used. The annual financial position and comprehensive income statements built the relevant variables. The study covered all the years in the study 2016-2021 comprehensively, providing unique insights into banking practices. In order to compile accurate financial reports, information was gathered concerning liquidity, asset quality, sufficient capital, and the efficiency of management.

3.7 Data Analysis and Presentation

Analysis necessitates strictly reviewing the data before drawing any conclusions or making any judgments (Kombo & Tromp, 2006). To organize the data, numerical descriptive statistics such as probabilities, frequencies, standard deviations, and means were used (Cooper & Schindler, 2006). These statistical measures helped to summarize and analyze the data, providing insights into the patterns, variability, and central tendencies present in the dataset. The researcher used descriptive, retrogression, and correlation analysis approaches. STATA was used for data analysis. The data

was examined and proven using STATA. The data and the extent of use were described using descriptive statistical approaches.

To simplify the interpretation of the study findings, the researcher analyzed the gathered data using multiple linear regression analysis, along with other statistical metrics such as percentages. The study utilized the equation for multiple linear regression, shown below, to analyze the responses collected:

$$DD_{it} = \beta_0 + \beta_1 CA_{it} + \beta_2 \beta AQ_{it} + \beta_3 EF_{it} + \beta_4 LM_{it} + \in_{it} \text{ ……..(1)}$$

DD is the dependent variable Degree of Diversification and was measured by the non-interest income ratio to total operating income.

CA= Capital Adequacy measured by the ratio of equity to total assets

AQ = Asset Quality measured by the ratio of nonperforming loans to Gross Loans

EF = Management Efficiency measured by ratio of Cost Income Ratio

LM= Liquidity Management measured by the ratio of Quick Assets to Total Liabilities

β1, β2, β3, and β4 are the parameter estimates for the independent variables.

β0 = Intercept term

ε = error term capturing the effect of unobserved variables

t = time

i= is the cross-sectional units of the 38 selected commercial banks in Kenya.

Explanatory variable significance was tested at the 95% level of confidence. The overall significance of the relationship between bank financial soundness indicators and degree of diversification was assessed using the F test, where F-calculated values greater than F-critical indicated a significant relationship between Kenyan commercial banks' degree of diversification and bank financial soundness indicators. This study sought to demonstrate the impact of bank financial soundness indicators on the diversification level of commercial banks in Kenya.

To assess the statistical significance of an individual explanatory variable on the degree of diversification practiced by commercial banks, a student t-test was utilized. The t-test compared the calculated t-value with the critical value from the t-table. If the calculated t-value is greater than the critical value, it indicates that the explanatory variable has a statistically significant effect on the degree of diversification. This means that the variable has a meaningful impact on the level of diversification practiced by commercial banks. The study showed that capital adequacy negatively affected diversification, asset quality positively affected operational efficiency,

management efficiency negatively affected diversification, and bank liquidity management positively affected diversification.

3.8 Diagnostics Test

The five main hypotheses, including the linear relationship, multivariate normality or lack of multicollinearity, Hausman Test, and Test for Pooled Ordinary Least Squares (OLS), were tested by diagnostic tests.

3.8.1 Multicollinearity Test

Multicollinearity is the term used to describe the phenomenon occurring in a retrogression model when some predictor variables are connected with other variables. Interpreting the relationship between variables requires careful analysis and consideration, as highlighted by Sahu (2013). This study employed the Variance Inflation Factor (VIF) to test for multicollinearity. If the Variance Inflation Factor (VIF) is less than 5, then multicollinearity is absent in the analyzed data set.

3.8.2 Hausman Test

The selection of the Panel data Hausman Test depends on the availability of component information and the exogeneity of the independent variables. Four hypothesis tests were employed to select the appropriate model. One of these is the Hausman test, which determines whether a model with fixed or random effects is more appropriate by determining whether or not there is endogeneity in the variables that explain the phenomenon.

3.8.3 Test for Pooled Ordinary Least Squares (OLS)

Test for Pooled Ordinary Least Squares (OLS) is a statistical method used to estimate parameters in panel data analysis. It allows researchers to analyze data collected from multiple entities over time (Wooldridge, 2018). The study applied this method, enabling the researcher to examine the relationships between variables and make predictions. The test for Pooled OLS determined the appropriateness of using this estimation technique in panel data analysis. It assisted the researcher in assessing whether the pooled OLS model adequately captures the relationships between variables and provides reliable parameter estimates. Biased standard error estimates may result. Underestimation may result in overestimation of t-statistics. Clustered standard errors can be used to adjust the error.

3.8.4 Homoscedasticity

Homoscedasticity is a desirable property in panel data analysis, where the variance of errors remains constant across entities and periods (Gujarati & Porter, 2019). This assumption ensures that the estimates obtained from the analysis are unbiased and efficient. Checking for homoscedasticity assisted the researchers in validating the suitability of their data for panel data analysis and ensuring the reliability of the results. Homoscedasticity testing evaluates whether the assumption of constant error variance is met and chooses appropriate statistical methods that rely on this assumption, such as hypothesis tests and confidence intervals (Hsiao, 2019).

In the context of the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity, researchers often use a statistical threshold to assess whether homoscedasticity is violated. One common approach is to compare the test statistic, such as the chi-squared statistic, to a critical value from the chi-squared distribution. If the calculated test statistic exceeds the critical value at a given significance level (e.g., 5%), it suggests a significant departure from constant variance, indicating the presence of heteroskedasticity. Researchers typically set a significance level (alpha) in advance, and if the p-value associated with the test statistic is less than alpha, they reject the null hypothesis of homoscedasticity and conclude that heteroskedasticity is present in the data.

3.8.5 Autocorrelation

Autocorrelation, or serial correlation, is a statistical property that examines the correlation between errors within the same entity over time (Greene, 2017). It is crucial to address autocorrelation in panel data analysis to obtain accurate results. By identifying and accounting for autocorrelation, the researcher can mitigate the bias and inefficiency it introduces to the parameter estimates. Autocorrelation testing assisted researchers in assessing the presence and nature of correlation between error terms over time.

Autocorrelation, or serial correlation, occurs when the error terms in a regression model are correlated with each other over time or across observations. To test for autocorrelation, researchers often use a statistical threshold based on a test statistic, such as the Durbin-Watson statistic or the Ljung-Box statistic. The Durbin-Watson statistic ranges from 0 to 4, where values

close to 2 indicate no first-order serial correlation. If the Durbin-Watson statistic falls significantly below 2 (e.g., less than 1.5), it suggests positive autocorrelation, while values significantly above 2 (e.g., greater than 2.5) indicate negative autocorrelation.

CHAPTER FOUR

FINDINGS AND DISCUSSIONS

4.1 Introduction

In this chapter, statistical models in econometrics are employed to present the study's findings. These results are illustrated using figures, tables, and graphs, followed by interpretations. Rigorous data collection and STATA software analysis ensure precision and accuracy. Findings are compared with prior research for context, and key concepts are subjected to comparative analysis. The chapter aims for a concise and structured presentation of research outcomes.

4.2 Descriptive statistics

It expounds on the features of the data being used for the study which was 36 registered commercial banks in Kenya from 2016 to 2021, two firms were ostracized due to data inadequacy hence reduction of number from 38 to 36. The analysis provided statistics on the number of observations of research data variables, mean of the data variables, standard deviation minimum and maximum values of the data variables, kurtosis, and skewness of the study variables. The analysis in Table 2 was based on a total of 36 commercial banks that were open continuously from 2016 to 2021 which were the subject of 216 observations. The mean of the capital adequacy was 13.68, with a standard deviation of 6.99, the mean of the asset quality was 5.65, and the standard deviation was 2.79. The study found out that the management efficiency mean was 2.18, with a standard deviation of 1.26. Additionally, the mean for liquidity was 0.19, with a standard deviation

of 0.314, and the mean of degree of diversification was 0.23, with a standard deviation of 0.31. The table below shows the results.

TABLE 2
Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Capital Adequacy	216	13.684	6.986	.55	41.7
Asset Quality	216	5.649	2.787	.19	9.99
Management Efficiency	216	2.182	1.265	.12	5.35
Liquidity Management	216	.195	.314	.01	2.56
Degree Of Diversification	216	.232	.305	.005	2.56

Source: Author (2023)

4.3 Panel Data Analysis

The panel data analysis uses particular tests that must be followed in order to produce the output and evaluate the results. The test shows that the data complies with the panel data analysis's requirements test, that it was correctly arranged to do so, that it covered the years 2016 to 2021, and that it is substantially balanced. All of the entities or enterprises in this scenario have measurements with values throughout all periods, according to the balanced panel data analysis.

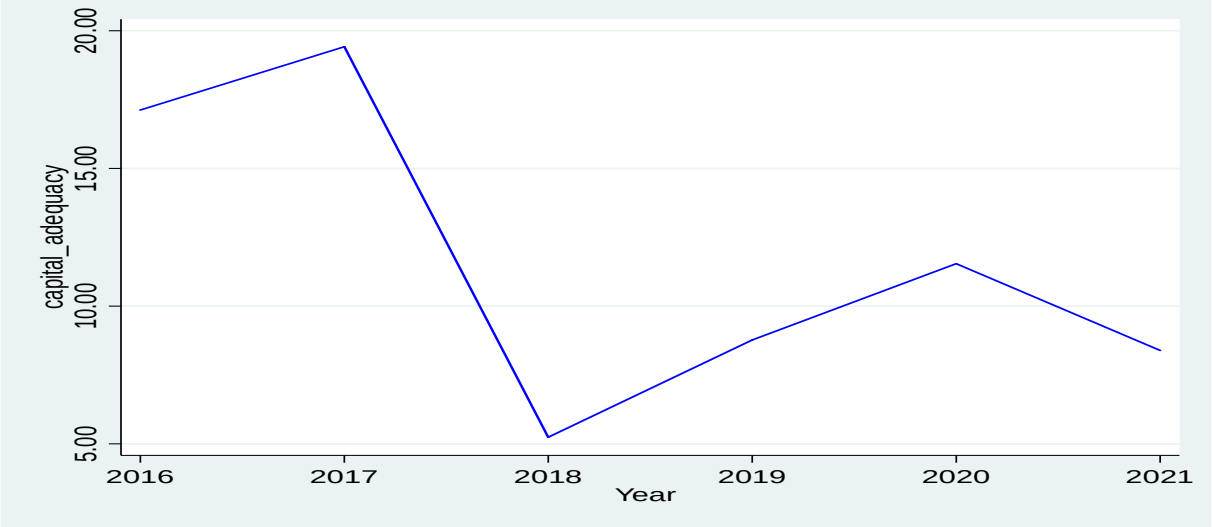
4.4 Trend Analysis

The trend analysis of capital adequacy, management efficiency, liquidity management, asset quality, and commercial banks' degree of diversification as determined by the ratio of non-interest income to total operating income are all covered in this part. The trend analysis is carried out to establish the movement of the study's variables.

4.4.1 Capital Adequacy

Figure 2 shows the level of capital adequacy for the 36 commercial banks from 2016 to 2021. The trend line in Figure 2 below indicates that capital adequacy has been in fluctuation mode. The Trend plot shows that on average, capital adequacy as measured by equity to assets increased in 2017 and then dropped significantly in 2018. This could be attributed to the fact that despite equity remaining constant, total assets increased significantly in 2018 being a post-election year. The fluctuation in equity to asset ratio leads to instability of the capital accumulation among the commercial banks.

FIGURE 2
Capital adequacy

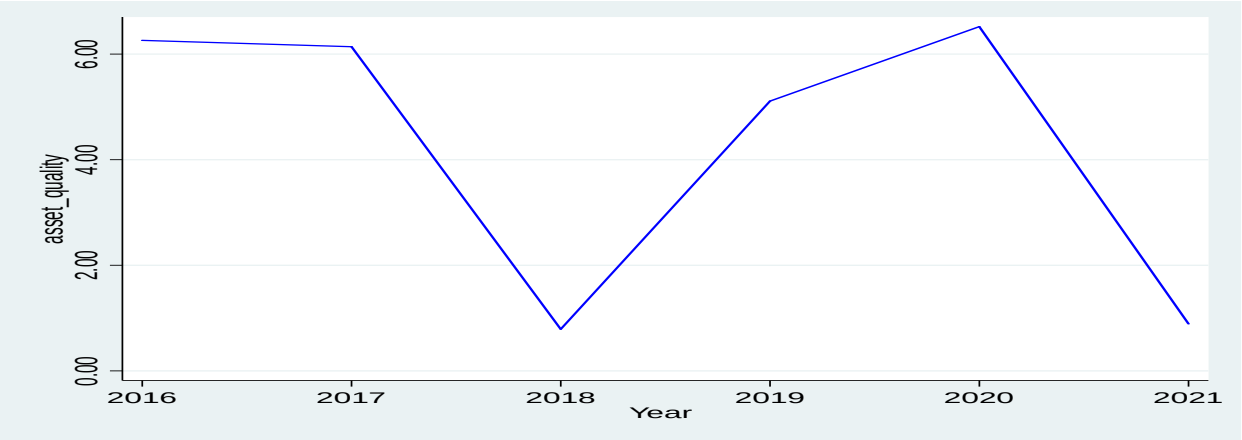


Source: Researcher (2023)

4.4.2 Asset Quality

Figure 3 shows the level of asset quality for the 36 commercial banks from 2016 to 2021. Asset quality is rated based on portfolio diversification, operational efficiency, and how existing regulatory frameworks may or may not limit credit risk among commercial banks. Commercial banks prefer assets with high quality but little credit risks. In 2016 the commercial banks experienced a steady growth in asset quality as shown by the trend plot then a sharp decline in 2018. This may be subject to fear of engaging in a high-quality asset but with a higher degree of risk as a result of post-election activities.

FIGURE 3
Asset Quality

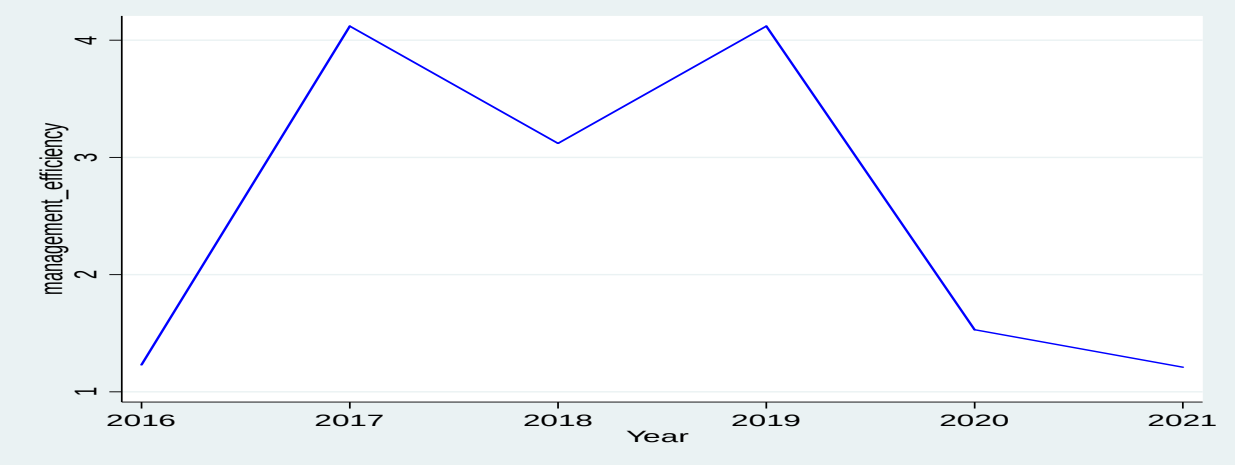


Source: Researcher (2023)

4.4.3 Management Efficiency

Figure 3 shows the level of management efficiency for the 36 commercial banks from 2016 to 2021. The trend plot shows that management efficiency exhibited an increasing trend between 2016 to 2017, which could be attributed to the political climate just before the election. However commercial banks experienced a significant decline in management efficiency in the year 2018 and 2020. The period between 2020 and 2021 was the lowest. This decline in management efficiency can be attributed to a lack of collaboration across departments, poor data management, and inadequate supervision and quality controls in the banking sector.

FIGURE 4
Management efficiency

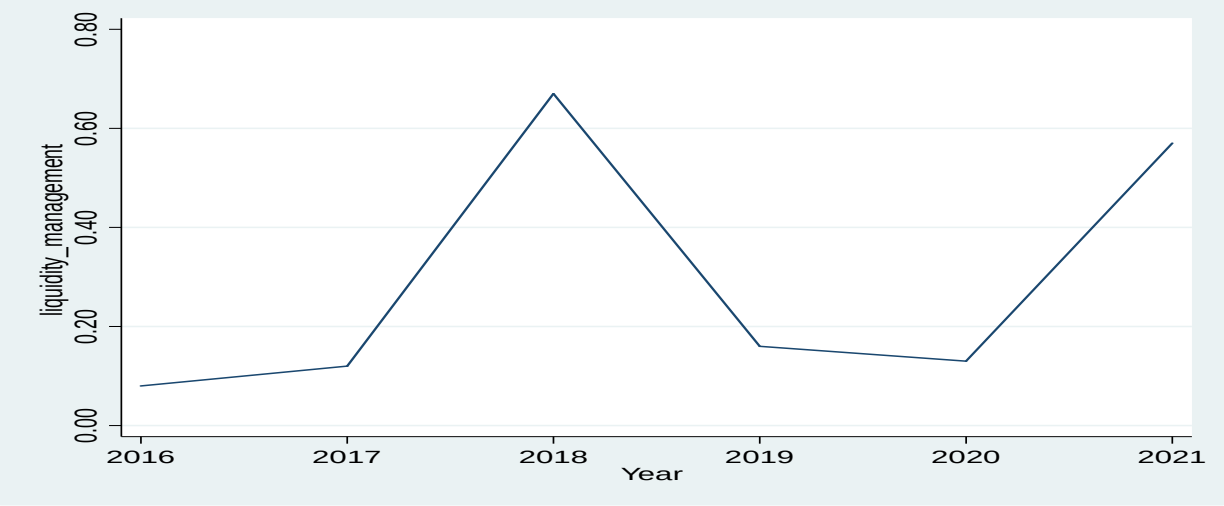


Source: Researcher (2023)

4.5 Liquidity management

Figure 5 shows the level of liquidity management for the 36 commercial banks from 2016 to 2021. The trend line in Figure 5 below indicates that liquidity management has a significant variation, with an increase in liquidity between 2016 to 2017 and a sharp decline from 2018 to 2019. Significant fluctuation in liquidity management experienced by commercial banks could be attributed to changes in cashflows, liquid assets, liquid liabilities, and maturity. Liquid liabilities and maturity have a positive impact on liquidity whereas growth has a negative impact. This can be affirmed by the fact that in 2017-2018 there was an increasing rate signifying that higher hedging of the firms. This then declined from 2018-2020 and then increased from 2020-2021.

FIGURE 5
Liquidity management

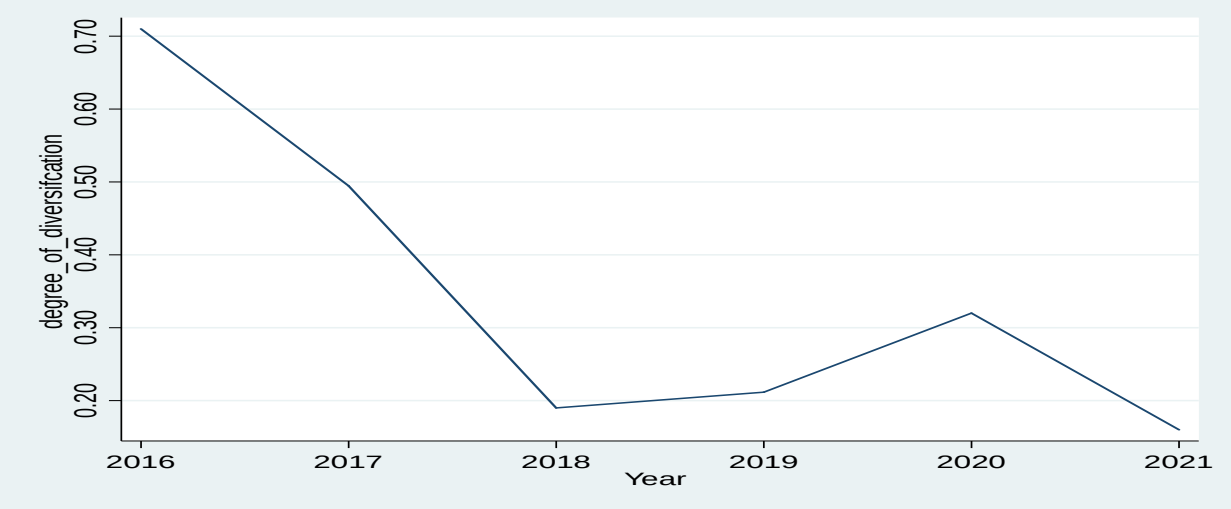


Source: Analytical Data (2023)

4.5.1 Degree of Diversification

Figure 6 shows the level of degree of diversification for the 36 commercial banks from 2016 to 2021. The trend in Figure 6 below indicates that the degree of diversification for the commercial banks has been inconsistent in their performance. This for instance declined from 2016-2018, then it started increasing from 2018-2020 then declined from 2020-2021. This can be associated with the unsustainability of financial soundness indicators within the firms in the study period.

FIGURE 6
Degree of diversification



Source: Analytical Data (2023)

4.6 Correlation matrix results

TABLE 3
Correlation Matrix

Pairwise correlations

Variables	-1	-2	-3	-4	-5
Capital Adequacy	1				
Asset Quality	0.394	1			
Management Efficiency	0.143	0.172	1		
	(-0.035)	(-0.011)			
Liquidity Management	0.038	0.031	0.149	1	
	(-0.582)	(-0.648)	(-0.028)		

Degree of Diversification	-0.049	-0.019	-0.046	-0.076	1
	(-0.477)	(-0.781)	(-0.498)	(-0.263)	

Source: Researcher (2023)

The table shows the multi-collinearity test results in accordance with Greene (2008), where a correlation coefficient of 0.8 or - 0.8 is an indication of a high level of multi-collinearity. From the test results above capital adequacy had a correlation coefficient (r) of -0.0483, asset quality was 0.3941, management efficiency had 0.1434, and liquidity management had 0.0377 -. Therefore, from the test results none of the study variables had a correlation coefficient of 0.8 or -0.8 showing that none of the study variables had a multi-collinearity.

4.7 Diagnostic Test

A diagnostic test is run to confirm that the data is suitable for analysis. Diagnostic tests, including the linear relationship, multivariate normality or lack of multicollinearity, Hausman Test, and Test for Pooled Ordinary Least Squares (OLS) tests were performed in the research investigation.

4.7.1 Multicollinearity test

The test is run to check whether the independent variables have a high degree of correlation. The test results are presented in Table 4 as the researcher utilized the correlation matrix to evaluate the study.

TABLE 4
Multicollinearity test

Variance inflation factor

	VIF	1/VIF
Asset Quality	1.203	.831
Capital Adequacy	1.192	.839
Management Efficiency	1.06	.943
Liquidity Management	1.023	.977
Mean VIF	**1.12**	**.**

Source: Researcher (2023)

Table 4 shows that the variance inflation factor of the variables is less than 10 which is an indication that there is no multicollinearity

4.7.2 Hausman Test.

The researcher chose the model to utilize while performing a panel regression study used the Hausman test. According to the alternative hypothesis, the preferred model is the fixed effect model, while the null hypothesis claimed that the preferred model is the random effect model. When the p-value is less than 0.05, the null hypothesis is rejected, so the fixed effect model is applied; when the p-value is greater than 0.05, the null hypothesis is not rejected, so the random effect model is applied. Table 5 below presents the findings.

TABLE 5
Hausman Test

Hausman (1978) specification test	
	Coef.
Chi-square test value	4.414
P-value	.3529

Source: Analytical Data (2023)

The findings of the analysis above showed that A p-value of 0.3529 which was higher than 0.05 was obtained from the results of Table 5 above. This result did not rule out the null hypothesis, hence the study's panel regression was conducted using the random effect model. The study findings in Table 5 were based on Green (2018) study which stated that when using the Hausman test, the favored model is the random effect, whereas the alternative hypothesis is the fixed effect. When the p-value is less than 0.05, it shows significance, and this led to the use of the fixed effect model. When the p-value is more than 0.05, it denotes non-significant, and the preferred model is the random effect model (Kreuter, 2019). The results showed that the two models, the fixed effect model (M1) and the random effect model (M2), had a substantial difference. A significant p-value of 0.3529 and a Chi-Square value of 4.414 were achieved. The random effect model was adopted in this study to perform a panel regression since the p-value was greater than 0.05.

4.7.3 Test for Pooled Ordinary Least Squares (OLS)

Test for Pooled Ordinary Least Squares (OLS) is a statistical method used to estimate parameters in panel data analysis. It allows researchers to analyze data collected from multiple entities over time (Wooldridge, 2018). The study applied this method, enabling the researcher to examine the relationships between variables and make predictions. The test for Pooled OLS determined the appropriateness of using this estimation technique in panel data analysis. It assisted the researcher in assessing whether the pooled OLS model adequately captures the relationships between variables and provides reliable parameter estimates. Biased standard error estimates may result. Underestimation may result in overestimation of t-statistics. Clustered standard errors can be used to adjust the error.

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of degree of diversification

chi2(1) = 60.44

Prob > chi2 = 0.0000

Based on the Breusch-Pagan / Cook-Weisberg test results, where the p-value is very close to zero, the researcher would reject the null hypothesis (Ho) of constant variance. In other words, the test

suggests that there is heteroskedasticity in the model, meaning that the variance of the error terms is not constant across all observations.

Given the presence of heteroskedasticity, it indicates that the assumptions of pooled OLS, which assumes constant variance of errors, are likely violated. Therefore, the researcher chose to deny the use of pooled OLS.

4.7.4 Homoscedasticity

This takes place when the variance of the error term is persistent in a given data. Therefore, accounting for homoscedasticity in a regression model contains unbiased parameters with standard errors. The white test was used for this research study. The table below gives details of the research study results.

TABLE 6
Homoscedasticity

Source	SS	df	MS			
				Number of obs	=	216
				F (5, 210)	=	152.77
Model	46.5920527	5	9.31841054	Prob > F	=	0.000
Residual	12.8091763	210	0.060996078	R-squared	=	0.7844
				Adj R-squared	=	0.7792
Total	59.401229	215	0.27684786	Root MSE	=	0.24697

Source: Researcher (2023)

The study results showed that F statistical probability is 0.000 which is less than 0.05 meaning the study results have no errors which indicates that there is homoscedasticity. Therefore, according to Hall (1993) incorporating the GMM approach homoscedasticity can be maintained.

4.7.5 Autocorrelation test

The test for autocorrelation was done to determine whether residuals were correlated across time.

TABLE 7
Durbin-Watson test for autocorrelation

Durbin-Watson test for autocorrelation
H0: No first-order autocorrelation
F (5, 206) =0.67
Prob>F = 0.6468

Source: Researcher (2023)

The results presented in Table 7 indicates that the H0 of no autocorrelation is not rejected and that residuals are not auto-correlated (p-value=0.6468).

4.8 Regression Analysis and Hypothesis Testing

Dynamic panel regression analysis was carried out after conducting the diagnostic tests to evaluate the effect of financial soundness indicators and the degree of diversification of the Kenyan commercial banks. The results below show the effect of capital adequacy and the degree of diversification of commercial banks in Kenya using a dynamic panel regression model without a moderating variable.

TABLE 8
Random Effect Regression result

Regression results

Degree Of Diversification	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
Capital Adequacy	-.003	.003	-0.74	.458	-.009	.004	
Asset Quality	-.001	.01	-0.07	.948	-.02	.019	
Management Efficiency	-.003	.015	-0.21	.834	-.033	.027	
Liquidity Management	-.215	.069	-3.11	.002	-.35	-.079	***
Constant	.32	.084	3.82	0	.156	.484	***
Mean dependent var		0.232	SD dependent var			0.305	

Overall r-squared	0.008	Number of obs	216
Chi-square	10.696	Prob > chi2	0.030
R-squared within	0.076	R-squared between	0.005

*** p<.01, ** p<.05, * p<.1*

Source: Analytical Data (2023)

The results show that with the inclusion of the independent variables degree of diversification of commercial banks increases by 0.320. Asset quality has a negative coefficient of -0.001 which means that its overall effect on the study variables is negative meaning that an increase degree of diversification in the past year leads to an increase in the degree of diversification in the coming year in accordance with the risk-taking trends of commercial banks. Firstly, a unit rise in asset quality resulted in a rise in the degree of diversification by 0.001 times which was non-significant with a p-value of .0.948. Secondly, a unit rise in capital adequacy led to a decline in the degree of diversification by 0.003 times which was insignificant with a p value of 0.458. Thirdly a unit addition in management efficiency caused a decline in the degree of diversification by 0.003 times which was insignificant with a p = 0.834. While a unit rise in liquidity management resulted in a decline in the degree of diversification by 0.215 times which was statistically insignificant with a p = 0.002. Therefore, from the above results the equation becomes;

$$DD_{it} = \beta_0 + \beta_1 CA_{it} + \beta_2 \beta AQ_{it} + \beta_3 EF_{it} + \beta_4 LM_{it} + \in_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots(1)$$

DD; = **0 · 0320 - 0 · 001AQ, - 0 · 003CA -0 · 003EF − 0 · 0215LM**

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the discussion of findings, limitations of the study, conclusions, and recommendations and discusses areas for further study by other researchers who will be interested in solving the problem that is facing investment diversification among commercial banks in Kenya which this study focused on. In addition, the research will play a vital role in helping the financial sector to best prepare and put in place mechanisms that will foster financial soundness among commercial banks in Kenya.

5.2 Summary and Discussions

The summary of the findings includes the summary of results and tests which were conducted using STATA software and were free from errors and manipulations and portrays the true and fair view of the Kenya commercial banks status. The trend analysis confirmed that there was a high degree of variation of the financial soundness indicators as they were varying at different times of period. For instance, in the case of capital adequacy, we realized that it was not constant as it was fluctuating from one year to the other, and the same from applied to the other years. The results of the regression analysis using the STATA showed that there was no linear relationship between the variables and it's statistically significant.

5.3 Effect of Capital Adequacy on Degree of Diversification

Descriptive statistics on the effect of capital adequacy on the degree of diversification shows that capital adequacy has a significant effect on the degree of diversification among commercial banks in Kenya as revealed by the highest mean from the analyzed data. This implies that commercial banks have inadequate capital to increase their portfolios and hence enhancing diversification. Trend analysis showed an increasing trend in capital adequacy from the beginning of 2016 to 2017, however, a sharp declining trend was observed for the next one year before a further accelerating trend that covered a period of two years between 2018 to the year 2020. However, capital adequacy among commercial banks began to drop after hitting its peak during the end of the 2020.This depicts a normal variation of the capital accumulation level among commercial banks in Kenya. These findings are consistent with previous research carried out by Miller (2022) on the effects of financial sustainability among commercial banks in Kenya. He noted that commercial banks in Kenya are not financially sustainable due to the fluctuation of capital accumulated with the institutions, hence affecting the level of investment and diversification policy implementation among the financial institutions in Kenya.

5.4 Effect of Asset Quality on Degree of Diversification

The analysis of descriptive statistics on the effect of asset quality on diversification revealed that there was a normal variation between the asset quality and degree of diversification among the commercial banks during the period under study. Commercial banks experienced a constant

growth in asset quality during the first year before experiencing a sharp decline during the year that followed. Furthermore, the asset quality began to grow steadily during the year 2018 before stabilizing in the year 2019 and it reached its peak at the beginning of the year 2020. There after the asset quality began to drop leading to diversification in futility among commercial banks. The result of the diagnostic test shows a normal trend in the quality of asset as far as diversification among commercial banks is concerned. This shows commercial bank's asset quality has an influence on the degree of the bank's diversification strategy though not significant. These findings are consistent with the research done by Njuguna (2021) on the growth capacity of financial institutions in Kenya. He found out that the quality of assets held by commercial banks has a greater impact on growth trajectory of financial institutions in Kenya.

5.5 Effect of Management Efficiency on Degree of Diversification

Descriptive statistics show that management efficiency has been on the fluctuation end meaning it is not consistent. Trend lines shows that there is a low goodness of fit (R squared) for management efficiency. The implication of this is that management efficiency trend has been inconsistent. The findings revealed that Commercial banks in Kenya experienced a steady increase in the management efficiency, which in return show a significant positive effect on the degree of diversification in the first year, but followed by a normal variation in the preceding two years. This implies that commercial banks could not enhance diversification of their investments between 2017 to 2018, although in 2019 the financial institutions experienced a

slight improvement in management. The analysis shows an abnormal variation in the management efficiency among commercial banks. Therefore, implying existence of a significant effect on degree of diversification among commercial banks in Kenya. The finding of this research is consistent with the outcome of the study done by Liu (2021) on the importance of management efficiency on the financial performance of financial institutions in Kenya. He noted that management efficiency plays a significant role in ensuring growth and investment mobilization among financial institutions

5.6 Effect of Liquidity management on Degree of Diversification

The trend line shows that there is a low goodness of fit (R squared) for liquidity management. Descriptive statistics show that liquidity management had a significant effect on the degree of diversification based on the fluctuation witnessed from the trend line. Liquidity management between 2017 and 2018 liquidity management shows an increasing trend while the period between 2018 and 2020 had a sharp decline before showing an increasing trend during the remaining period covered by this study. The implication of this is that liquidity management trend has been inconsistent and this fluctuation has a significant effect on the degree of diversification among the commercial banks in Kenya. The diagnostic test reveals that investment diversification among commercial banks is unsustainable.

5.7 Conclusions

Based on the findings above, it can be concluded that capital adequacy, asset quality, management efficiency and liquidity management had a significant effect on the degree of diversification among commercial banks in Kenya. A sharp decline on the degree of diversification among commercial banks in 2018 can be attributed to political instability occasioned by post-election pressure in the country. The findings show that commercial banks have unsustainable diversification strategies. The fluctuation in the level of the capital adequacy among commercial banks is highly influenced by risk-weighted assets. Significant fluctuation in asset quality among commercial bank is associated with bank's portfolio diversification and operational efficiency. In conclusion it is clear that bank management components like asset quality, liquidity management, capital adequacy and management efficiency affect the degree of diversification among commercial banks in Kenya.

5.8 Recommendations

In order for commercial banks in Kenya to enhance a high degree of diversification, there should be a clear framework on how commercial banks will enhance the effectiveness and implementation of financial soundness indicators such asset quality, capital adequacy, management efficiency and liquidity management. Focus on cost cutting alone is not a formula for a long-term success among commercial banks. A balanced approach will be one that enables a bank not only to improve operating efficiency but also to upgrade its capabilities to respond to market needs and prepare for the future through investment diversification.

Policy makers should consider enhancing the regulatory framework to incentivize prudent capital adequacy standards that can withstand economic and political shocks. This would involve revising regulations to ensure that banks maintain adequate capital buffers and risk management mechanisms. Additionally, fostering political stability and working towards creating an environment conducive to sustainable economic growth and banking stability is crucial. A stable political climate can mitigate the adverse effects of political instability on the banking sector and the overall economy.

Commercial banks should reevaluate and fine-tune their diversification strategies to ensure they are sustainable and well-aligned with the bank's risk tolerance. Special attention should be given to asset quality, with banks prioritizing the quality of assets in their portfolios. Robust credit risk assessment mechanisms can help maintain a healthy loan portfolio. Furthermore, effective liquidity management practices should be implemented to ensure that banks remain stable during periods of economic volatility. Monitoring and adjusting capital adequacy levels in response to changes in risk-weighted assets is also essential to safeguard against unforeseen economic challenges.

Researchers should consider conducting further studies to delve deeper into the specific factors influencing diversification strategies among Kenyan commercial banks. This may involve examining how political instability affects diversification decisions in greater detail. Longitudinal studies tracking the evolution of diversification practices and their impact over time can provide valuable insights. Additionally, researchers can compare diversification

practices and their effects in Kenya with those in other countries to draw broader conclusions and contribute to the international discourse on banking practices.

Banking and finance students should focus on gaining a strong understanding of core components such as capital adequacy, asset quality, liquidity management, and management efficiency. These components are fundamental to effective banking operations and should be incorporated into educational curricula. Students can benefit from analyzing case studies of banks that have effectively managed these components, gaining practical insights into successful banking practices. This practical knowledge can prepare them for future roles in the banking sector and equip them with the skills needed to address challenges in the industry.

In summary, these recommendations aim to promote a stable and sustainable banking sector in Kenya by fostering informed decision-making, encouraging research to enhance industry knowledge, and providing students with the necessary skills and insights to contribute effectively to the banking and finance field.

5.9 Limitations of the Study

The conclusions drawn from this survey should not be broadly applied to all sectors of the Kenyan economy. The survey exclusively relies on secondary data obtained from 38 registered commercial banks in Kenya, as per the Central Bank's records as of December 31, 2022. Therefore, the research outcomes are specific to the commercial banking sector and do not encompass other critical financial sectors, making them not universally applicable. Moreover, as this study predominantly utilized secondary data, the potential value of incorporating primary

data may have been underestimated. Lastly, it's essential to note that this research exclusively concentrated on analyzing the impact of four financial soundness indicators, namely asset quality, capital adequacy, management efficiency, and liquidity management, on the degree of diversification within the commercial banking sector.

5.10 Suggestions for Further Studies

Future research in this area needs to incorporate a wide range of sectors to determine whether the effects of financial soundness indicators on the degree of diversification could be similar across various sectors. This study only focused on the four financial soundness indicators namely: asset quality, capital adequacy, management efficiency, and liquidity management. Further research may consider other components not discussed in this study. The present study has relied largely on secondary data and is therefore not enriched by the primary data which would have enabled the study to provide a more in-depth view of the subject matter. Therefore, primary data need to be included in the future to complement secondary data and to provide a wider perspective to the present study.

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APPENDICES

Appendix I: Data Collection Sheets

	Capital Adequacy		Asset quality		Management efficiency		Liquidity management	
Year	Total Equity	Total Assets	Nonperforming loans	Gross loan	Total revenue	Total Assets	Current Assets	Total Liabilities
2016								
2017								
2018								
2019								
2020								
2021								

Appendix II: List of Selected Registered Commercial Banks

Number	Bank Name	Date Licensed
1	Standard Chartered Bank Kenya Limited	1910
2	ABSA Bank Kenya	1916
3	Victoria Commercial Bank Limited	11th January 1996
4	DIB Bank Kenya Limited	13th April 2017
5	Guaranty Trust Bank (K) Ltd	13th January 1995
6	Diamond Trust Bank Kenya Limited	15th November 1994
7	Ecobank Kenya Limited	16th June 2008
8	Consolidated Bank of Kenya Limited	18th December 1989
9	SBM Bank Kenya Limited	1st April 1996
10	KCB Bank Kenya Limited	1st January 1896
11	National Bank of Kenya Limited	1st January 1968
12	Bank of Baroda (K) Limited	1st July 1953
13	Co-operative Bank of Kenya Limited	1st July 1968
14	Citibank N.A Kenya	1st July 1974
15	Habib Bank A.G Zurich	1st July 1978
16	Stanbic Bank Kenya Limited	1st June 2008
17	Family Bank Limited	1st May 2007
18	Gulf African Bank Limited	1st November 2007
19	Guardian Bank Limited	20th December 1995
20	Mayfair CIB Bank Limited	20th June 2017
21	Development Bank of Kenya Limited	20th September 1996
22	Spire Bank Ltd	23rd June 1995
23	Sidian Bank Limited	23rd March 1999
24	UBA Kenya Bank Limited	25th September 2009
25	I&M Bank Limited	27th March 1996
26	Equity Bank Kenya Limited	28th December 2004
27	Middle East Bank (K) Limited	28th November 1980
28	First Community Bank Limited	29th April 2008
29	Kingdom Bank Limited	2nd March 2010
30	Bank of Africa Kenya Limited	30th April 2004
31	Credit Bank Limited	30th November 1994
32	Prime Bank Limited	3rd September 1992
33	Paramount Bank Limited	5th July 1995
34	Bank of India	5th June 1953
35	NCBA Bank Kenya PLC	5th November 2019

36	African Banking Corporation Limited	8th December 1994
37	M-Oriental Bank Limited	8th February 1991
38	Access Bank Kenya	8th January 1985

Appendix III: Schedule of Activities

Activity	January 2023	February 2023	March 2023	April 2023	May 2023	June 2023	July 2023	August 2023
Proposal development								
Proposal submission								
Data collection								
Data entry and Analysis								
Thesis writing								
Thesis submission and examination								

Appendix IV: Project Budget

ACTIVITY	**COST (Kshs)**
Internet expense	6,000
Telephony	4,800
Typesetting and printing	5, 000
Total project cost	**15, 800**