

**THE INFLUENCE OF RISK MANAGEMENT ON THE FINANCIAL
PERFORMANCE OF TIER 1 COMMERCIAL BANKS IN KENYA IN
POST COVID-19 PANDEMIC**

BY


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DECLARATION

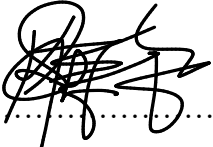
This research project is my original work and has not been presented for examination in any other university.

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This research project has been submitted for examination with my approval as university supervisor.

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DEDICATION

I dedicate this creation to my family for their unwavering support during the whole process of completing it.

ABBREVIATIONS AND ACRONYMS

ANOVA:	Analysis of Variance
CBK:	Central Bank
COVID:	Coronavirus Disease
CRB:	Credit Reference Bureau
MFBs:	Microfinance Banks
NIM:	Net Interest Margin
NPL:	Non-Performing Loans
ROA:	Return on Assets
ROE:	Return on Equity
SACCOs:	Saving and Credit Cooperative Organisation
SPSS:	Statistical Package for the Social Sciences

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ABSTRACT

The COVID-19 pandemic has had a profound impact on the global economy, including the banking sector. In the aftermath of the pandemic, the financial performance of commercial banks has become a critical concern, particularly with regards to risk management. Tier 1 commercial banks recorded a decline in performance post Covid 19 compared to the pre-Covid 19 period. The profit before tax of Tier 1 commercial banks decreased by Ksh.46 billion in the year 2020 from Ksh.143 billion in the year 2019 to Ksh 97 in the year 2020. The objective of the research was to determine the influence of risk management on financial performance of Tier 1 commercial banks in Kenya in post Covid pandemic. The theoretical review focused on major theories that include Finance Distress theory, Risk Management theory and Organizational Performance theory. The method of descriptive research was employed in this study. The study through the researcher collected data in form of secondary data by use of data collection sheet. The secondary data was obtained from Bank Supervision Reports from the Central Bank of Kenya. The data collected was in a form of panel data from the 9 Tier 1 commercial banks in Kenya. The research covered a 5-year period from the year 2018 to the year 2022 from which data was derived. The analysis of this data was conducted using SPSS version 27 and STATA. It was concluded that credit risk management had a positive effect on financial performance of commercial banks in Kenya since it helps in identifying and mitigating high-risk borrowers and loans. It was concluded that liquidity risk management had a positive effect on financial performance of commercial banks in Kenya as adequate liquidity management ensures that an organization has the funds to cover its short-term liabilities. It was concluded that operating risk management had a positive effect on financial performance of commercial banks in Kenya. This is because investors and customers are more likely to bank with financial institutions with effective operating risk management strategies in place. Asset quality had a positive effect on financial performance of commercial banks in Kenya. This is because when loans and investments are of high quality, the bank's interest income is more secure, and the need for provisions and write-offs due to non-performing assets (NPAs) is reduced, leading to improved net earnings. It was recommended that commercial banks should diligently oversee the credit reports of their customers to ensure that they extend credit to individuals with a strong creditworthiness, thereby minimizing the likelihood of loan defaults. The research suggests that commercial banks should strike a balance in retaining an optimal level of liquidity, ensuring they avoid customer-induced panic withdrawals while simultaneously providing sufficient credit to customers to boost their interest income. The banks must establish effective internal controls and protocols to minimize instances of fund mismanagement, forgery, check fraud, hacking, and the acquisition of unauthorized information, all of which can have detrimental effects on the banks' performance. Commercial banks should consider diversification of Loan Portfolio so as to avoid overconcentration of loans in a single sector or industry.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Risk management has gained significant importance in the banking industry due to various factors, including the growing volatility of financial markets, financial innovations, and the increasing role of financial products in the process of financial intermediation. Additionally, the industry has witnessed significant financial losses suffered by banks that lacked proper risk management systems (Schonharl, 2017). According to Hoffmann et al. (2019), insufficient risk management leaves banking institutions more vulnerable to shocks and is a crucial factor influencing their financial performance. The study further highlights that the financial performance of financial institutions plays a critical role in determining their approach to risk management. Institutions experiencing a decline in net worth tend to reduce their hedging activities, while those facing financial distress significantly cut back on risk management. Furthermore, limited risk management exposes financial institutions, especially those with financial constraints, to various risks that have negative implications for their financial performance (Kimani, 2018).

This study will be anchored on Risk Management theory, Finance Distress theory and Organizational Performance theory. The proponent of Risk Management theory was Peter Bernstein who indicated that investor portfolio selection as a problem of utility maximization under conditions of risks and uncertainty which is crucial in establishing the relationship between risks and returns (Mangram, 2013). The proponent of Finance Distress theory is Edward Altman who explained the circumstances under which firms experience financial difficulties and the impact of these difficulties on performance (Altman, 2018). The proponents of Organizational Performance theory was Richard Daft who emphasized the identification and understanding of key drivers that impact individual

and organizational performance. These drivers may include factors such as goal clarity, performance feedback, skill development, resource allocation, teamwork, and organizational culture (Daft, 2014).

Similar to other financial institutions, Tier 1 commercial banks fulfill a crucial economic role within a country by providing loans to support individual members' development. Nonetheless, the financial performance of commercial banks has become a matter of concern due to the associated risks (Nguny, 2019). Tier 1 commercial banks recorded a decline in performance post Covid 19 compared to the pre-Covid 19 period. The profit before tax of Tier 1 commercial banks decreased by Ksh.46 billion in the year 2020 from Ksh.143 billion in the year 2019 to Ksh 97 in the year 2020 (Central Bank Report, 2020). The profit after of Tier 1 commercial banks improved after Covid 19 in the year 2021 to Ksh. 171 billion and to Ksh. 209 in the year 2022 (Central Bank Report, 2022). In the year 2020, the loans and advances in the substandard, doubtful and loss categories increased by 81.6 percent, 16.0 percent and 32.1 percent respectively. In the year 2021, the loans and advances in the doubtful and loss categories increased by 6.7 percent and 13.0 percent respectively. In the year 2022, the loans and advances in the doubtful and loss categories further increased by 13.6 percent and 13.5 percent respectively (Central Bank Report, 2022). Thus, in post Covid 19 era there has been concern in non-performing loans of Tier 1 commercial banks which have in turn had an impact on financial performance.

1.1.1 Risk Management Practices

According to Kanchu and Kumar (2013), risk management refers to a process that involves the proactive identification, analysis, and response to specific risks. It not only entails reducing the likelihood of negative events but also ensures the possibility of positive outcomes. Tschemernjak (2004) defines risk management as the systematic process of

identifying, measuring, controlling, and monitoring potential risks that could adversely impact an organization's returns. In financial institutions like commercial banks, risk management is of paramount importance. Shareholders, regulators, practitioners, and scholars must pay close attention to this aspect, as poor risk management has resulted in significant losses for organizations (Serwadda, 2018). Fadun and Oye (2020) emphasize the necessity for financial institutions to develop comprehensive risk management frameworks, as sustainable growth is increasingly reliant on such frameworks being in place.

Osayi, Ezuem, and Daniel (2019) emphasize that incorrect approaches to risk management can lead to the deterioration of commercial banks' asset portfolios. Conversely, an effective and timely engagement with risk management has the potential to enhance the investment performance of deteriorating assets in banks' portfolios. Commercial banks encounter numerous risks in their operations, dealing with cash whose value is unsecured (Wood & McConney, 2018). Additionally, they provide services like lending and accepting deposits, which further expose them to risk in the business environment. Therefore, it is crucial for commercial banks to manage their risk exposure and conduct thorough analyses of borrowers before granting loans (Echwa & Atheru, 2020). Hubbard (2020) points out that risk management practices that primarily impact commercial banks include market risk management, liquidity risk management, operational risk management, and equity risk management.

The measures of risk management in this study will be liquidity risk management, credit risk management, operating risk management and equity risk management (Echwa & Atheru 2020; Wamalwa & Mukanzi, 2018). Liquidity risk management is a critical aspect of financial risk management that focuses on ensuring an organization's ability to meet its

short-term financial obligations promptly and efficiently (Ghenimi, Chaibi & Omri, 2021). Credit risk management is a fundamental aspect of financial risk management that focuses on identifying, assessing, and mitigating the risk of potential losses arising from the failure of borrowers or counterparties to meet their credit obligations (Ekinici & Poyraz, 2019). Operating risk management focuses on identifying, assessing, and mitigating risks that arise from internal processes, people, systems, and external events that can adversely impact the achievement of the organization's objectives (Serwadda, 2018). Equity risk management refers to the process of identifying, assessing and mitigating risks associated with investments in equities or stocks which arises from the volatility and uncertainty of stock prices (Hubbard, 2020).

1.1.2 Financial Performance

According to Englund and Graham (2019), an organization's financial performance refers to its ability to successfully achieve set objectives by efficiently utilizing available physical and human resources. It indicates the level of a firm's operations over a specific period, expressed in terms of returns and losses during that duration (Fadun & Oye, 2020). Financial performance assesses an organization's achievements in monetary terms based on its goals, policies, and operations. It reflects the financial health of the organization and can be compared with similar firms in the same industry (Fatihudin & Mochklas, 2018). Financial performance is a primary objective for all organizations, including commercial banks. A well-performing banking industry is essential for maintaining the stability of the economy, as poor financial performance hampers banks' ability to absorb negative shocks, consequently affecting their solvency (Matayo & Muturi, 2018).

Financial performance enables commercial banks to generate resources from their operations over a specific period (Odhiambo, 2019). Positive financial performance

rewards shareholders for their investments, fostering additional investment and contributing to economic growth (Mishra & Mohanty, 2018). Improved financial performance allows lenders to recover costs or generate profits, creating institutions capable of sustaining themselves without continued reliance on government subsidies or donor funds (Wamalwa & Mukanzi, 2018). The evaluation of banks' financial performance serves various purposes, including assessing their operational results and overall financial condition, measuring asset quality, management efficiency, and goal achievement. It also helps ascertain their earnings quality, liquidity, capital adequacy, and level of banking services (Fatihudin & Mochklas, 2018).

Financial performance is gauged by the improvement in investors' and shareholders' positions at the end of a given period compared to the start. This evaluation typically involves using ratios derived from comprehensive income and financial position statements, as well as data on securities prices (Njeru, 2018). Key measures of financial performance include return on assets (ROA), return on equity (ROE), and Net Interest Margin (NIM) (Ngunyu, 2019). From a shareholder's perspective, a firm's financial performance is assessed based on how much better off the shareholder is at the end of the period compared to the beginning (Fatihudin & Mochklas, 2018). Various financial measures, such as profit after tax, ROA, ROE, earnings per share, and generally accepted market value ratios, can be employed to assess financial performance (Echwa & Atheru, 2020). In the context of commercial banks, financial performance is commonly measured in terms of ROA and ROE (Odhiambo, 2019). The financial performance in this study in regard to Tier 1 commercial banks in Kenya will be measured in terms of return on assets.

1.1.3 Risk Management Practices and Financial Performance

Effective risk management often results in improved financial performance as it enables organizations to achieve regulatory compliance and control risks, leading to cost savings (Banks, 2018). Moreover, proper risk management ensures the continuity of the firm's financial performance and can increase the overall value of the organization (Banks, 2018). In the banking industry, it is crucial to have robust risk management practices to prevent financial losses and avoid bankruptcy. Imane (2019) discovered that liquidity, credit, and operational risk management negatively and significantly impact financial performance, while market risk management shows a positive and significant correlation with financial performance. Kodithuwakku (2019) also found that adequate risk management practices in Kenyan banks can result in positive financial performance. To improve the financial performance of commercial banks, it is essential for them to prioritize and enhance their risk management practices.

Kamil, Ismail, and Isa (2020) highlighted the rapid growth and increasing significance of the financial industry in the global financial landscape. They emphasized that risk management plays a crucial role in the financial performance of banks, given their involvement in the intermediation process. As the financial industry is inherently risky, several critical risk factors, such as credit, liquidity, operational, and market risks, must be addressed to maintain banks' stability amid fierce competition in the industry (Odhiambo, 2019). The survival and success of a financial organization depend heavily on the efficiency of risk management. Prudent risk management by financial institutions is essential to avoid financial distress that could potentially lead to a severe financial crisis. Additionally, banks must ensure that their risk management techniques, including risk identification and management, align with the principles of the bank and do not conflict with its core values (Ekinici & Poyraz, 2019).

Osayi, Ezuem, and Daniel (2019) observed significant and dramatic losses in the financial industry resulting from failures in risk management. Firms that had previously performed well experienced sudden and substantial losses due to credit risk exposures turning sour, unfavorable interest rate positions, or derivative exposures that may or may not have been intended to hedge balance sheet risk. Incorrect approaches to risk management were found to contribute to the deterioration of asset portfolios (Fadun & Oye, 2020). However, effective and timely engagement with risk management has the potential to enhance the performance of deteriorating asset portfolios. Improved risk management, such as well-managed funds, reduced bad and doubtful loans costs, and better management of market risk, leads to improved portfolio investment performance for banks (Imane, 2019). Risk management aims to quantitatively enhance the measurement and management of specific risks, including liquidity, leverage, market, financial, solvency, and credit risks, and this has a direct impact on financial performance (Inegbedion, Vincent & Obadiaru, 2020).

1.1.4 Tier 1 Commercial Banks in Kenya

Tier 1 commercial banks hold a crucial position in Kenya's financial system and economy, as they offer a diverse range of financial services to individuals, businesses, and other entities. Their services support economic activities, foster savings, enable investments, and provide access to credit. Regulation of the banking sector in Kenya falls under the Central Bank of Kenya (CBK), responsible for licensing, supervision, and regulation of commercial banks. The CBK sets prudential guidelines and monitors compliance to ensure the stability and soundness of the banking system. As of December 31, 2022, the Kenyan banking sector consisted of 42 institutions, comprising 38 commercial banks and 1 mortgage finance company, as reported by the Central Bank of Kenya (2022). The sector's asset base experienced a growth of 10.0 percent, reaching approximately Ksh. 6.6 trillion in 2022 from Ksh. 6.0 trillion in 2021. The capital adequacy ratio of the sector stood at 19.0 percent

in 2022, showing a slight decline from 19.5 percent in 2021. Additionally, profit before tax witnessed a significant increase of 22.0 percent, amounting to Ksh. 240.4 billion in 2022, compared to Ksh. 197.0 billion in 2021 (Central Bank Report, 2022).

In Kenya, commercial banks can be classified into three types based on their operations: Tier 1 banks (large banks with significant market presence), Tier 2 banks (medium-sized banks), and Tier 3 banks (smaller banks with limited regional presence). As of December 31, 2022, there were a total of 9 Tier 1 banks, which included Kenya Commercial Bank (KCB) Ltd, Equity Bank Kenya Ltd, Co-operative Bank of Kenya Ltd, NCBA Bank Kenya PLC, Absa Bank Kenya Plc, Standard Chartered Bank (K) Ltd, Diamond Trust Bank Kenya Limited, Stanbic Bank Kenya Ltd, and I &M Bank Limited. The total assets of Tier 1 Commercial banks were valued at Ksh 4.9 trillion, representing a 75.44 percent share in the market (Central Bank Report, 2022). Each Tier 1 Commercial bank in Kenya has implemented different risk management policies, mainly influenced by factors such as ownership, credit policies, credit scoring systems, regulatory environment, and management styles. These policies significantly impact their financial performance. In 2022, the loans and advances in the doubtful and loss categories experienced a further increase of 13.6 percent and 13.5 percent, respectively (Central Bank Report, 2022).

1.2 Research Problem

The COVID-19 pandemic has had a profound impact on the global economy, including the banking sector. In the aftermath of the pandemic, the financial performance of commercial banks has become a critical concern, particularly with regards to risk management (Darjana, Wiryono & Koesrindartoto, 2022). Although risk management frameworks and regulations exist, the banking sector in Kenya faces various risks, such as credit risk, market risk, liquidity risk, and operational risk. The pandemic has exacerbated these risks as banks

contend with loan defaults, reduced economic activity, and financial market instability (Elnahass, Trinh & Li, 2021). In the post-pandemic era, effective risk management practices have become essential for commercial banks to navigate these challenges and maintain their performance. Therefore, commercial banks must adopt effective risk management practices to overcome these challenges and adapt to the new normal (Song & Zhou, 2020).

The financial performance of commercial banks has become a matter of concern due to the associated risks (Ngunyu, 2019). Tier 1 commercial banks recorded a decline in performance post Covid 19 compared to the pre-Covid 19 period. The profit before tax of Tier 1 commercial banks decreased by Ksh.46 billion in the year 2020 from Ksh.143 billion in the year 2019 to Ksh 97 in the year 2020 (Central Bank Report, 2020). The profit after Tax of Tier 1 commercial banks improved after Covid 19 in the year 2021 to Ksh. 171 billion and to Ksh. 209 in the year 2022 (Central Bank Report, 2022). In the year 2020, the loans and advances in the substandard, doubtful and loss categories increased by 81.6 percent, 16.0 percent, and 32.1 percent respectively. In the year 2021, the loans and advances in the doubtful and loss categories increased by 6.7 percent and 13.0 percent respectively. In the year 2022, the loans and advances in the doubtful and loss categories further increased by 13.6 percent and 13.5 percent respectively (Central Bank Report, 2022). Thus, in the post Covid 19 era there has been concern in non-performing loans of Tier 1 commercial banks which have in turn had an impact on financial performance.

Ashraf, Yazid and Remli (2021) studied the impact of financial risk management practices on Islamic banks performance in Pakistan and found that financial risk management practices had an impact on bank's performance. Mwaura (2020) studied financial risk management and financial performance of SACCOs in Nairobi City County, Kenya and

showed that there was a significant effect of financial risks management on financial performance of SACCOs. However, the extent to which risk management strategies have influenced the performance of Tier 1 commercial banks in Kenya in post pandemic era remains unclear. This study aims to address this gap by investigating the influence of risk management on financial performance of Tier 1 commercial banks in Kenya in post Covid pandemic.

1.3 Research Objective

The objective of the research was to determine the influence of risk management on financial performance of Tier 1 commercial banks in Kenya in post Covid pandemic.

1.4 Value of the Study

The research will contribute to the advancement of Risk Management theory, which posits that an effective risk management structure enhances decision-making by providing a comprehensive understanding of risks and their potential impact on firms. The study will also align with Finance Distress theory, as it can assist firms in avoiding financial distress. When a company's business deteriorates to the extent that it cannot meet its financial obligations, its overall performance is compromised. Lastly, the research will support Performance theory, enabling firms to formulate effective goals and policies crucial for enhancing their financial performance.

The research will assist policymakers in the banking industry to formulate efficient risk management strategies, aiming to mitigate risks faced by commercial banks in Kenya. Key institutions involved in policymaking, such as the Credit Reference Bureau (CRB) and the Central Bank of Kenya, will be able to devise strategies like credit information sharing among commercial banks and implement policies that help alleviate the risks faced by these banks.

The study will be relevant to Tier 1 commercial banks in Kenya who are the biggest lenders in the banking industry. This will be in terms of adopting risk management practices, especially in the post Covid period where businesses have faced challenges leading to increased default rates. Through adopting of risk management practices the banks will be able to reduce their risk exposure and in turn enhance their performance.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The chapter focuses on the influence of risk management on financial performance of Tier 1 commercial banks in Kenya in post Covid pandemic. The chapter include empirical review, conceptual framework and the summary of literature review.

2.2 Theoretical Review

The theoretical review focused on major theories that include Finance Distress theory, Risk Management theory and Organizational Performance theory.

2.2.1 Finance Distress Theory

The proponent of Finance Distress theory was Edward Altman whose idea is that financial distress occurs when an individual or entity is unable to meet its financial obligations and this has significant implications for economic decision-making and financial outcomes (Altman, 2018). The theory assumes that financial distress is a real and possible situation for individuals, companies, and other economic entities. Financial distress can be caused by factors such as high levels of debt, poor cash flow, economic downturns, and operational challenges. Financial distress is assumed to impact the decision-making processes of individuals and companies. For instance, firms facing financial distress may need to make difficult choices related to cost-cutting, divestitures, layoffs, and restructuring in order to survive or recover (Altman & Benhenni, 2019).

Financial distress is assumed to impact the valuation of assets and companies. When a company faces financial difficulties, its value may decline due to increased uncertainty, potential bankruptcy risk, and other negative factors (Purnanandam, 2008). The critique of the theory is that it centers around the concept of bankruptcy, but in reality, many distressed

companies may not necessarily go bankrupt. Some firms may find alternative solutions such as renegotiating debt terms, asset sales, or financial restructuring, which can have different implications than outright bankruptcy (Purnanandam, 2008). The theory is relevant to this study as it can help commercial banks identify, assess and manage the risks associated with potential financial distress.

2.2.2 Risk Management Theory

The proponent of Risk Management theory was Peter Bernstein who indicated that investor portfolio selection as a problem of utility maximization under conditions of risks and uncertainty which is crucial in establishing the relationship between risks and returns (Mangram, 2013). The theory assumes that the future is uncertain and that there is variability in outcomes. Risks arise due to the potential for unexpected events, changes in circumstances, and fluctuations in variables that impact decision outcomes. The theory assumes that risks can be quantified using probability and likelihood assessments. It recognizes that some events are more likely to occur than others and that probabilities can be estimated based on historical data, statistical models, expert judgment, and other methods (Nocco & Stulz, 2006).

Risk management acknowledges that taking actions to mitigate one risk may introduce or increase another risk. It assumes that decisions involve trade-offs between different risks, costs of mitigation, and potential benefits of risk reduction. It emphasizes the importance of informed decision-making by considering the potential consequences and probabilities associated with different options (Nocco & Stulz, 2006). The critique of the theory is that overreliance on risk management can stifle creativity and innovation. Organizations might become overly focused on avoiding risks, which could prevent them from taking calculated risks that lead to significant growth and progress (Krause & Tse, 2016). The theory is relevant to this study as it focuses on how commercial banks can identify, assess, mitigate and monitor risks and in turn improve financial performance.

2.2.3 Organizational Performance Theory

The proponents of Organizational Performance theory was Richard Daft who emphasized the identification and understanding of key drivers that impact individual and

organizational performance (Daft, 2014). The theory assumes that organizations have specific goals and objectives they aim to achieve. These goals can be financial, strategic, operational, or related to social and environmental responsibility. The theory assumes that performance can be measured and evaluated. Organizations use various metrics, indicators, and benchmarks to assess their performance against established goals. The theory emphasizes the concepts of effectiveness and efficiency. Organizations strive to balance both aspects to ensure that resources are not wasted while achieving desired outcomes (Gomez-Mejia, Berrone & Franco-Santos, 2014).

The theory assumes that organizations can achieve higher performance through continuous improvement efforts. Organizations that adopt a culture of learning and innovation can enhance their performance over time. The critique of the theory is that it often relies heavily on quantitative metrics to measure performance, such as financial indicators or productivity measures (Osabiya, 2015). This focus on quantitative measures might neglect the qualitative aspects of performance, such as organizational culture, employee morale, and social impact. Applying Risk Management theory involves not only understanding its assumptions but also tailoring its concepts to the specific needs and challenges of the organization (Rehman, Mohamed & Ayoup, 2019). The theory is thus relevant to this study as it focuses on understanding and explaining the factors that influence the effectiveness, efficiency, and overall performance of commercial banks.

2.3 Determinants of Financial Performance

This section focuses on determinant of financial performance in specific to commercial banks.

2.3.1 Risk Management

Risk management in commercial banks is a vital practice aimed at identifying, assessing, and mitigating potential risks that can impact the financial stability and reputation of these institutions (Rehman, Mohamed & Ayoup, 2019). Commercial banks face a range of risks, including credit risk, market risk, operational risk, and liquidity risk. Commercial banks assess borrowers' creditworthiness and the potential for default before extending loans, thereby managing credit risk. Market risk is managed by monitoring fluctuations in interest rates, foreign exchange rates and other market variables to ensure that the bank's investment portfolio remains balanced and aligned with its risk tolerance. Operational risk is mitigated through robust internal controls, audits, and contingency plans. Compliance with regulatory requirements is also a fundamental aspect of risk management, ensuring that banks operate within legal frameworks (Altaf et al., 2022).

2.3.2 Net Interest Margin

Net Interest Margin (NIM) is a key financial metric used in banking and financial analysis to measure the difference between the interest income earned from loans, investments, and other interest-bearing assets, and the interest expenses incurred on deposits and other interest-bearing liabilities (Abbas et al., 2019). It provides insight into how well a financial institution is managing its interest rate spread and generating profit from its core lending and borrowing activities. A higher NIM indicates that a bank is earning more interest income from its assets than it is paying out in interest expenses on liabilities, suggesting stronger profitability. Banks that effectively manage their NIM can generate healthy profits

from their core activities while balancing the risks associated with interest rate fluctuations and asset-liability mismatches. NIM is a critical measure for assessing the financial health and performance of banks, as it reflects their ability to generate income from their core operations (Angori, Aristei & Gallo, 2019).

2.3.3 Loan Portfolio Quality

Loan portfolio quality refers to the overall health and performance of a bank's loans that it has extended to borrowers. It reflects the degree to which loans are being repaid as agreed and the level of credit risk associated with the portfolio (Afrifa, Gyapong & Zalata, 2019). The quality of a bank's loan portfolio has a direct impact on its financial stability, profitability, and overall reputation within the financial industry. Loan portfolio quality plays a pivotal role in determining the financial performance and stability of commercial banks. Banks with prudent lending practices, effective risk management, and a focus on maintaining high-quality loan portfolios are more likely to achieve sustained profitability and long-term success. Banks with strong loan portfolio quality can leverage their reputation and credibility to attract and retain high-quality borrowers, further enhancing their competitive advantage (Goucha, Belaid & Omri, 2020).

2.3.4 Asset Quality

Asset quality is a critical factor that significantly impacts the performance and overall health of commercial banks (Al-Homaidi et al., 2020). Asset quality refers to the quality and soundness of the assets held by a bank, including loans, investments, and other earning assets. A strong asset quality contributes to financial stability, profitability, and investor confidence, while poor asset quality can lead to financial distress and adverse consequences. Sound asset quality contributes to higher profitability (Nguyen, 2022). When loans and investments are of high quality, the bank's interest income is more secure,

and the need for provisions and write-offs due to non-performing assets (NPAs) is reduced, leading to improved net earnings. A bank with high-quality assets demonstrates prudent lending decisions, comprehensive credit risk assessment, and appropriate loan monitoring mechanisms (Al-Homaidi et al., 2020).

2.3.5 Capital Adequacy

Capital adequacy is a crucial regulatory requirement and financial metric that directly influences the financial performance and stability of commercial banks. It refers to the proportion of a bank's capital, primarily shareholders' equity and retained earnings, relative to its risk-weighted assets (Baldwin, Alhalboni & Helmi, 2019). Adequate capital reduces the risk of insolvency and enhances the bank's ability to withstand adverse events. Capital adequacy determines a bank's lending capacity. Higher capital ratios allow banks to lend more since they can take on a proportionally larger amount of risk-weighted assets. Higher capital adequacy ratios enhance a bank's financial stability by providing a cushion against potential losses. Banks with strong capital adequacy ratios may be perceived as less risky by creditors. Consequently, they can borrow funds at lower interest rates, reducing their borrowing costs (Anggari & Dana, 2020).

2.3.6 Bank Size

The size of a commercial bank, often measured by its total assets, can significantly impact its financial performance (Chodorow-Reich et al., 2022). Larger banks benefit from economies of scale, allowing them to spread fixed costs over a larger asset base which lowers average costs of operation and potentially higher profitability. Larger banks have more diversified operations including a wider range of products, services, and geographic presence. This diversification can help mitigate risks associated with economic fluctuations in specific regions or sectors (Afrifa, Ggyapong & Zalata, 2019). Larger banks often have

greater lending capacity due to their larger capital base. This allows them to extend more loans, earn interest income, and generate higher revenue. Larger banks might have more resources to invest in advanced risk management technologies and processes contributing to better risk mitigation and financial stability (Chodorow-Reich et al., 2022).

2.4 Empirical Studies

2.4.1 International Evidence

Ashraf, Yazid and Remli (2021) focused on the impact of financial risk management practices on Islamic banks performance in Pakistan where a descriptive research design was used and both primary and secondary data was used. The target population was 22 Islamic banks, and a census was undertaken. A multiple regression and correlation analysis was used. It was established that the practices of Islamic banks in Pakistan indicated better financial risk management resulting to better financial performance. However, a gap exists as the study context was in global context and it was limited to Islamic banks and financial risk management while the present study focuses on the influence of risk management on financial performance of Tier 1 commercial banks in Kenya in post Covid pandemic.

Yeasin (2022) studied the impact of credit risk management on financial performance of commercial banks in Bangladesh. The study applied a deductive research design with targeting 6 commercial banks in Bangladesh, all with data spanning ten years between 2010 to 2019 with secondary data by employing panel regression analysis model. It was established that for a bank credit creation is the principal income generating activity. When credit borrower or counter party fails to accomplish the coercions on agreed term this is known as credit risk. Managing credit risk involves identifying, analyzing, measuring, rating, controlling and expressing risk combined with banks activity or procedure to minimize losses and maximize advantages. Like many banking sectors of developed and

developing economy, Bangladeshi banking sector is facing the problem of financial crime. However, a gap exists as the study context was in global context and the focus was on credit risk management while the present study focuses on the influence of risk management on financial performance of Tier 1 commercial banks in Kenya in post Covid pandemic.

Atsakpo (2019) assessed the effect of risk management practices on financial performance of insurance companies in Ghana where a survey research design was used, and the target population was 600 respondents while the sample size was 60 respondents. A regression model was used, and findings revealed that risk identification and mitigation influence financial performance most. Risk identification, risk mitigation and risk monitoring significantly influenced the financial performance of the companies. However, a gap exists as the study context was in global context and its focus was on insurance companies while the current study focuses on the influence of risk management on financial performance of Tier 1 commercial banks in Kenya in post Covid pandemic.

Fadun and Oye (2020) studied the impacts of operational risk management on financial performance, a case of commercial banks in Nigeria where 20 commercial banks were used. The study employed longitudinal (panel) research design and a regression model was adopted. The findings revealed that there was a positive relationship between operational risk management practices and the financial performance of banks and thus bank staff should have regular scheduled trainings on operational risk management. However, a gap exists as the study context was in regional context and its focus was limited to operational risk management while the present study focuses on the influence of risk management on financial performance of Tier 1 commercial banks in Kenya in post Covid pandemic.

Kwashie, Baidoo and Ayesu (2022) investigated the impact of credit risk on financial performance of commercial banks in Ghana. Panel data spanning the period 2013 to 2018 on 15 commercial banks in Ghana was used for the analysis. The results from the random

effect estimation technique showed that non-performing loans had a negative impact on both measures of financial performance. Also, monetary policy rate had a negative impact on both measures of financial performance, albeit insignificant for economic value-added measure. It was further revealed that the size of bank, age of bank, and gross domestic product had a significant positive effect on both measures of financial performance although significant for return on asset. However, a gap exists as the study context was in regional context and the focus was on credit risk while the current study focuses on the influence of risk management on financial performance of Tier 1 commercial banks in Kenya in post Covid pandemic.

2.4.2 Local Evidence

Mohamed and Onyiego (2018) studied the effect of risk management on financial performance of commercial banks in Kenya, a case study of commercial banks in Mombasa County. A descriptive and analytical research design was adopted and the target population was 13 commercial banks. The data was analysed using a multiple regression model, correlation analysis and ANOVA analysis. The study concluded that operational risk management, credit risk management, liquidity risk management and interest rate risk management had a significant influence on financial performance of commercial banks. However, a gap exist as the context of the above study was only on commercial banks in Mombasa County and used primary data while the current study focuses on Tier 1 commercial banks in Kenya where secondary data will be used.

Kagunda (2018) evaluated the influence of liquidity risk management practices on financial performance of deposit taking SACCOs in Nairobi Kenya. The study used descriptive research design and the targeted population was 41 SACCOs. The study relied on secondary data sources and descriptive and inferential statistics were employed. The study

employed panel regression analysis model using SPSS version 24. The study concluded that asset quality management practice, capital adequacy practice and capital leverage practice had an influence on the financial performance. However, a gap exist as the study was limited to liquidity risk management and its focus was on deposit taking SACCOs while the present study focuses on the influence of risk management on financial performance of Tier 1 commercial banks in Kenya in post Covid pandemic.

While evaluating the effect of credit risk management on financial performance of deposit taking SACCOs in Western Kenya, Kemunto, Kisavi and Momanyi (2020) adopted a correlational research design. A census of 19-deposit taking SACCOs for the period 2013 to 2017 yielding 95 data points. Before regression model was developed Normality, Multicollinearity and Autocorrelation tests were carried out. It was established that there was a significant relationship between non-performing loan ratio and financial performance of deposit taking SACCOs. However, a gap exists as the study was limited to credit risk management and its focus was on deposit taking SACCOs while the current study focuses the influence of risk management on financial performance of Tier 1 commercial banks in Kenya in post Covid pandemic.

Kachumbo (2020) focused on determinants of financial performance of commercial bank Fintechs in Kenya. The Philosophical approach used was positivism while panel data research design was employed. The population of the study was 33 banking Fintechs and 10 commercial banks where a census was adopted. Secondary data was used, and STATA software was used to analyze the data. The study concluded that there existed a significant effect between capital adequacy, number of customer deposits, size of loan and financial performance of commercial banks. However, a gap exists as the study focused on Fintechs in Kenya and it didn't focus on the influence of risk management on financial performance of Tier 1 commercial banks in Kenya in post Covid pandemic.

Ishmail, Memba and Muriithi (2023) studied credit risk and financial performance of microfinance banks (MFBs) in Kenya. The study employed census method where secondary data from 13 microfinance banks was collected from published annual reports for the period 2011-2019. The study employed explanatory research design. The study found that there exists relationship between credit risk and financial performance. The regressions result revealed that credit risk metrics are highly statistically significant with adverse effect on financial performance of MFBs in Kenya. The study recommends that MFBs should manage their credit risk through adopting effective credit policy and diversify investment portfolio. However, a gap exists as the study focus was on microfinance banks and credit risk while the current study focuses on the influence of risk management on financial performance of Tier 1 commercial banks in Kenya in post Covid pandemic.

Amira, Alala and Musiega (2023) studied the influence of liquidity risk management on financial performance of commercial banks in Kenya. The study incorporated both explanatory and longitudinal research designs into its methodology. The target population consisted of 32 Commercial Banks in Kenya. The study utilized panel data from 2010 to 2019. Using Eviews, descriptive and inferential statistics were used to analyze the collected data which was then presented in tables and figures. The study found out that liquidity risk management had a negative but insignificant effect on financial performance of commercial banks both for ROE and ROA. However, a gap exists as the study focus was on liquidity risk management while the current study focuses on the influence of risk management on financial performance of Tier 1 commercial banks in Kenya in post Covid pandemic.

2.5 Summary of Literature Review

Globally, Ashraf, Yazid and Remli (2021) established that the practices of Islamic banks in Pakistan indicated better financial risk management resulting to better financial performance. Yeasin (2022) indicated that like many banking sectors of developed and developing economy, Bangladeshi banking sector is facing the problem of financial crime. Regionally, Atsakpo (2019) indicated that risk identification, risk mitigation and risk monitoring significantly influenced financial performance of the companies. Fadun and Oye (2020) revealed that there was a positive relationship between operational risk management practices and the financial performance of banks and thus bank staff should have regular scheduled trainings on operational risk management. Kwashie, Baidoo and Ayesu (2022) revealed that the size of bank, age of bank, and gross domestic product had a significant positive effect on both measures of financial performance although significant for return on asset.

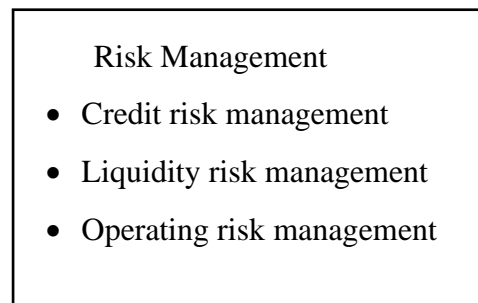
Locally, Mohamed and Onyiego (2018) concluded that operational risk management, credit risk management, liquidity risk management and interest rate risk management had a significant influence on financial performance of commercial banks. Kagunda (2018) concluded that asset quality management practice, capital adequacy practice and capital leverage practice had an influence on the financial performance. Kemunto, Kisavi and Momanyi (2020) established that there was a significant relationship between non-performing loan ratio and financial performance of deposit taking SACCOs. Kachumbo (2020) concluded that there existed a significant effect between capital adequacy, number of customer deposits, size of loan and financial performance of commercial banks. Ishmail, Memba and Muriithi (2023) revealed that credit risk metrics are highly statistically significant with adverse effect on financial performance of MFBs in Kenya. Amira, Alala

and Musiega (2023) found out that liquidity risk management had a negative but insignificant effect on financial performance of commercial banks both for ROE and ROA.

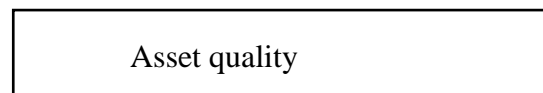
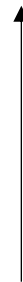
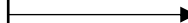
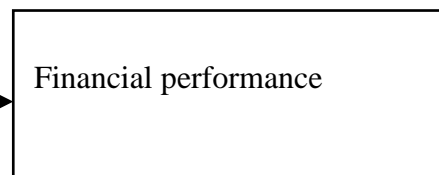
2.6 Conceptual Framework

The independent variables are liquidity risk management, credit risk management and operating risk management. The moderating variable will be the asset quality while the dependent variable will be financial performance.

Independent Variable



Dependent Variables



Moderating Variable

Figure 2.1: Conceptual Framework

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The underlying chapter outlined the overall methodology that will be used in this research. It encompassed the research design, methods of collecting data and analysis.

3.2 Research Design

Kothari (2014) characterizes it as a structure employed to offer suitable answers to research inquiries. The method of descriptive research was employed in this study due to its capability to efficiently, conveniently, and effectively gather extensive data from a significant population through panel data (Saunders, Lewis & Thornhill, 2016). This method is also advantageous as it allows the inclusion of multiple variables within the same timeframe (Erik & Marko, 2011).

3.3 Data Collection

The study through the researcher collected data in form of secondary data by use of data collection sheet. The secondary data was obtained from Bank Supervision Reports from the Central Bank of Kenya. The data collected was in a form of panel data from the 9 Tier 1 commercial banks in Kenya. The research covered a 5-year period from the year 2018 to the year 2022 from which data was derived. The data was used to ensure that there are enough data points for the research so as to ensure that the changes that have occurred in the commercial banks are accounted for.

3.4 Data Analysis

The data analysis tools employed in this study aim to provide insights into the research questions, including the exploration of the influence of risk management on financial performance of Tier 1 commercial banks in Kenya in post Covid pandemic. The gathered

data underwent processes of editing, sorting, and coding to ensure its quality and accuracy. The analysis of this data was conducted using SPSS version 27 and STATA.

3.4.1 Diagnostic Tests

3.4.1.1 Multicollinearity

Multicollinearity arises when there is a linear correlation among independent variables, leading to infinite standard errors (Gujarati, 2014). The researcher employed the VIF test to ascertain whether there is substantial and concerning evidence of multicollinearity.

3.4.1.2 Test for Normality

Before conducting a regression analysis, it is anticipated that the research data should adhere to a normal distribution. Non-normal distribution of research data can result in estimates that are both biased and ineffective. The Shapiro-Wilk test was utilized to assess data normality.

3.4.1.3 Heteroscedasticity

Detection of heteroscedasticity does not impact the impartiality or linear relationship of regression coefficients. Heteroscedasticity arises when the variability of the error term differs across independent variables. To assess the presence of heteroscedasticity in the data, the Breusch-Pagan test will be employed (Gujarati, 2014).

3.4.1.4 Test for Autocorrelation

Given the utilization of time series data, the examination of autocorrelation will be deemed essential. Autocorrelation would be present if the null hypothesis is upheld, whereas its absence would be indicated if the alternative hypothesis is favored. If the null hypothesis is supported, it suggests a connection or covariance among the error terms for the

parameters. To evaluate autocorrelation, the Breusch Godfrey test was employed (Gujarati, 2014).

3.4.2 Analytical Model

The regression model had a multivariate model as per the equation indicated below.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where:

Y= Financial performance; measured by return on assets

β_0 - Y intercept

$\beta_1 - \beta_4$ = Measure of the sensitivity of variable X to changes in financial performance

X_1 - Credit risk management; measured by total debt to total assets ratio.

X_2 – Liquidity risk management; measured by loan to deposit ratio.

X_3 – Operating risk management; measured by operational costs to total assets ratio.

X_4 – Asset quality; measured by Non-Performing Loans (NPL) ratio.

ε – This is the regression equation Error term

3.4.3 Test of Significance

In order to examine the hypothesis and determine if there is sufficient evidence to infer that the independent variables influence the dependent variables, ANOVA was employed, with a confidence level of 95% set. This approach aims to address the limitations associated with the t-test and aims to reveal the relationships between the variables. The t-test was used to assess the individual significance of the predictor variables in this study. The interpretation of p-values was conducted at a significance level of 5%. If the p-value is less than 0.05, it indicates the variables' significance.

3.5 Operationalization and Measurement of Variables

The table below include operationalization and measurement of variables that include financial performance, credit risk management, liquidity risk management, operating risk management and asset quality.

Table 3.1: Operationalization and Measurement of Variables

Variable Name	Definition	Data Source	Data Preprocessing	Measurements
Financial performance	Evaluation of a company's fiscal health and its ability to generate profits and maximize the efficient use of its resources	CBK, Bank Supervision Reports	Percentage	Return on assets
Credit risk management	It is the identification, assessment, and mitigation of the potential for financial loss due to borrowers failing to meet their financial obligations	CBK, Bank Supervision Reports	Ratios	Total debt to total assets ratio
Liquidity risk management	An organization's ability to meet its short-term financial obligations and maintain sufficient cash or cash equivalents to fund its operations and cover unexpected financial needs	CBK, Bank Supervision Reports	Ratios	Loan to deposit ratio
Operating risk management	It is identification, assessment and mitigation of the risks associated with the day-to-day operational activities and processes of an organization	CBK, Bank Supervision Reports	Ratios	Operational costs to total assets ratio
Asset quality	The overall health and performance of a financial institution's loan portfolio and other assets	CBK, Bank Supervision Reports	Ratios	Non-Performing Loans ratio

CHAPTER FOUR: DATA ANALYSIS, RESULTS, AND INTERPRETATION

4.1 Introduction

The results findings are clearly and adequately explained in this chapter along with their respective interpretations.

4.2 Descriptive Statistics

This research aimed to examine the descriptive statistics of the study's variables with the specific objective of ascertaining and establishing their mean values and standard deviations.

Table 4.2: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Net Profit	45	0	33184	12964	8206.61499
Total Assets	45	0	758345	323480.9	1.74E+05
Total Loans	45	0	544837	193114.6	1.26E+05
Total Deposits	45	0	591067	242130.6	1.36E+05
Non-Performing Loans	45	0	66810	19054.53	14172.03944
Operational Costs	45	0	44229	19395.38	9647.07461
Operating Income	45	0	71641	31975.22	15830.94839

Descriptive results showed that net profit trend of the banks in the 5-year period recorded a mean average of Ksh 12.964 billion with the highest net profit recording at Ksh 33.184 billion and the lowest at zero profit. The mean average value of total assets was Ksh 323.480 billion with the highest recording at Ksh 758.345 billion. The average total loans were at Ksh 193.114.6 billion with the highest recording at Ksh 544.837 billion. The average total deposits were at Ksh 242.130 billion with the highest recording at Ksh

591.067 billion. The average non-performing loans were at Ksh 19.054 billion with the highest recording at Ksh 66.810 billion. The average operational costs were at Ksh 19.395 billion with the highest recording at Ksh 44.229 billion. The average operating income were at Ksh 31.975 billion with the highest recording at Ksh 71.641 billion.

4.3 Diagnostic Tests for Regression

The study will carry out diagnostic tests to test for multicollinearity, normality, heteroscedasticity and autocorrelation.

4.3.1 Test for Multicollinearity

Table 4.3: Test for Multicollinearity

Variable	VIF	1/VIF
X1	12.76	0.078388
X2	11.59	0.086315
X3	1.66	0.60357
X4	1.28	0.784247
Mean VIF	6.82	

The study assessed the data for multicollinearity, which involves examining how much the variance is inflated using the variance inflation factor (VIF). Multicollinearity is considered to be an issue when the VIF score exceeds 10 or the threshold surpasses 0.2. In this case, the overall VIF was 6.82, which falls below the threshold of 10, suggesting that the research data did not exhibit any evidence of multicollinearity.

4.3.2 Test for Normality

Table 4.4: Test for Normality

Variable	Obs	W	V	z	Prob>z
Y	45	0.98055	0.842	-0.364	0.64213
X1	45	0.93523	2.805	2.186	0.01442
X2	45	0.90828	3.972	2.923	0.00173
X3	45	0.94391	2.429	1.881	0.03
X4	45	0.81473	8.023	4.413	0.00001

To assess the normality of the error term, the researcher employed the Shapiro-Wilk test. The null hypothesis posits that the population follows a normal distribution, while the alternative hypothesis suggests otherwise. When the p-value is below 0.05, the null hypothesis is discarded, indicating compelling evidence that the data in question does not originate from a population with a normal distribution.

The results indicated that financial performance had a p-value of 0.64213, as a result, the null hypothesis was retained, suggesting there is substantial evidence that the datasets originate from a normally distributed population. In contrast, credit risk management had a p-value of 0.01442, liquidity risk management had a p-value of 0.00173, operating risk management had a p-value of 0.03 and asset quality rate had a p-value of 0.00001. In these cases, the null hypothesis was rejected, indicating that the datasets did not adhere to a normal distribution.

4.3.3 Heteroscedasticity

Table 4.5: Heteroscedasticity

Breusch-Pagan / Cook-Weisberg test for	heteroskedasticity
Ho: Constant variance	
Variables: fitted values of Y	
chi2(1)	= 2.22
Prob > chi2 =	0.136

To examine the presence of heteroscedasticity, the researchers employed the Breusch Pagan test. When the chi-squared value exceeds the critical threshold, suggesting evidence of heteroscedasticity, or when the p-value falls below 0.05, the null hypothesis is rejected, indicating the presence of heteroscedasticity. However, the results showed a chi-squared value of 2.22, signifying an absence of heteroscedasticity. Additionally, the p-value of 0.136 exceeded 0.05, signifying that the research retained the null hypothesis of homoscedasticity, confirming the absence of heteroscedasticity.

4.3.4 Test for Autocorrelation

Table 4.6: Test for Autocorrelation

lags (<i>p</i>)	chi2	df	prob > chi2
1	7.164	1	0.309

If serial correlation is present, the Breusch–Godfrey test can lead to misleading conclusions from other tests. In this case, we fail to reject the null hypothesis that there is no serial relationship because the p-value (0.309) exceeds the significance threshold (0.05) from the dataset. These findings indicate that there is no serial correlation among the variables.

4.4 Correlations Analysis

Table 4.7: Correlations Analysis

		Financial Performance	Credit Risk Management	Liquidity risk management	Operating risk management	Asset quality
Financial Performance	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	45				
Credit Risk Management	Pearson Correlation	0.285	1			
	Sig. (2-tailed)	0.058				
	N	45	45			
Liquidity risk management	Pearson Correlation	0.159	.949**	1		
	Sig. (2-tailed)	0.296	0			
	N	45	45	45		
Operating risk management	Pearson Correlation	.740**	.421**	.302*	1	
	Sig. (2-tailed)	0	0.004	0.044		
	N	45	45	45	45	
Asset quality	Pearson Correlation	0.265	0.234	0.205	.454**	1
	Sig. (2-tailed)	0.078	0.122	0.178	0.002	
	N	45	45	45	45	45

A positive correlation coefficient was revealed after analyzing the data between financial performance and credit risk management as exhibited by correlation factor of 0.285 and the relationship was considered to be statistically insignificant as depicted by the p value of 0.058 which was more than 0.05. A positive correlation coefficient was revealed after analyzing the data between liquidity risk management and financial performance as exhibited by correlation factor of 0.159; however, the relationship was considered to be statistically insignificant as depicted by the p value of 0.296 which was more than 0.05.

A positive correlation coefficient was revealed after analyzing the data between operating risk management and financial performance as exhibited by correlation factor of 0.74 and the relationship was considered to be statistically significant as depicted by the p value of 0 which was more than 0.05. A positive correlation coefficient was revealed after analyzing the data between asset quality and financial performance as exhibited by correlation factor of 0.265 and the relationship was considered to be statistically insignificant as depicted by the p value of 0.078 which was more than 0.05.

4.5 Regression Analysis

4.5.1 Model Summary

Table 4.8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.754a	.569	.526	.0118064

R which is the correlation of coefficient showed that there existed a positive correlation between risk management and financial performance of Tier 1 commercial banks as revealed by 0.754 correlation co-efficient. The R², showed that 56.9% of the variations of financial performance were explained by risk management.

4.5.2 Analysis of Variance

Table 4.9: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.007	4	0.002	13.184	.000a
	Residual	0.006	40	0		
	Total	0.013	44			

At a 5% level of significance, the overall model was declared significant since F computed (13.184) was above the F crucial (value = 2.606), indicating that risk management had a significant effect on financial performance. The p value was 0 which was less than 0.05 an indication that there was a significant effect between risk management and financial performance at 5 % significant level.

4.5.3 Coefficients

Table 4.10: Coefficients

Model	Unstandardized		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 (Constant)	0.013	0.006		2.222	0.032
Credit Risk Management	0.026	0.025	0.375	1.012	0.318
Liquidity risk management	-0.022	0.019	-0.405	-1.144	0.259
Operating risk management	0.496	0.09	0.738	5.523	0
Asset quality	-0.02	0.031	-0.075	-0.642	0.524

$$Y = 0.013 + 0.026 X_1 + 0.022 X_2 + 0.496 X_3 - 0.02X_4$$

From the above model on regression, it was noted that when all independent variables were held to constant zero, financial performance would be at 0.013. A unit increase in credit risk management would result to a 0.026 increase in financial performance. A unit increase in liquidity risk management would result to a -0.022 decrease in financial performance. A unit increase in operating risk management would result to a 0.496 increase in financial performance. A unit increase in asset quality would result to a -0.02 decrease in financial performance.

4.6 Discussion of Findings

A positive correlation coefficient was revealed after analyzing the data between financial performance and credit risk management as exhibited by correlation factor of 0.285 and the relationship was considered to be statistically insignificant as depicted by the p value of 0.058 which was more than 0.05. The results supported Yeasin (2022) findings that effective credit risk management helps in identifying and mitigating high-risk borrowers and loans. By ensuring that loans are extended to creditworthy individuals and businesses, a financial institution can reduce the likelihood of loan defaults and non-performing assets, leading to a healthier loan portfolio. By monitoring and managing the credit risk associated with loans and investments, a financial institution can maintain high asset quality.

A positive correlation coefficient was revealed after analyzing the data between liquidity risk management and financial performance as exhibited by correlation factor of 0.159; however, the relationship was considered to be statistically insignificant as depicted by the p value of 0.296 which was more than 0.05. The results supported Kagunda (2018) findings that adequate liquidity management ensures that an organization has the funds to cover its short-term liabilities. This stability is crucial for maintaining investor and stakeholder confidence, contributing to a positive reputation and financial health. Effective liquidity management allows an organization to secure funds at favorable terms and conditions, reducing borrowing costs and positively impacting financial performance.

A positive correlation coefficient was revealed after analyzing the data between operating risk management and financial performance as exhibited by correlation factor of 0.74 and the relationship was considered to be statistically significant as depicted by the p value of 0 which was more than 0.05. The results supported Fadun and Oye (2020) findings that by proactively addressing operational risks, organizations can reduce costs associated with inefficiencies, rework, accidents, and legal liabilities. Lower operational costs contribute

to improved profitability. Financial institutions and investors are more likely to provide capital to organizations with effective operating risk management strategies in place. Access to capital at favorable terms can lead to financial performance improvements.

A positive correlation coefficient was revealed after analyzing the data between asset quality and financial performance as exhibited by correlation factor of 0.265 and the relationship was considered to be statistically insignificant as depicted by the p value of 0.078 which was more than 0.05. When loans and investments are of high quality, the bank's interest income is more secure, and the need for provisions and write-offs due to non-performing assets (NPAs) is reduced, leading to improved net earnings. A bank with high-quality assets demonstrates prudent lending decisions, comprehensive credit risk assessment, and appropriate loan monitoring mechanisms (Al-Homaidi et al., 2020).

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This final chapter highlights the study summary of the discussed findings in the previous chapter so as to adequately develop appropriate conclusion based on the findings and later develop appropriate recommendations which can be used by the policy makers.

5.2 Summary of Findings

Descriptive results showed that net profit trend of the banks in the 5-year period recorded a mean average of Ksh 12.964 billion with the highest net profit recording at Ksh 33.184 billion and the lowest at zero profit. The mean average value of total assets was Ksh 323.480 billion with the highest recording at Ksh 758.345 billion. The average total loans were at Ksh 193.114.6 billion with the highest recording at Ksh 544.837 billion. The average total deposits were at Ksh 242.130 billion with the highest recording at Ksh 591.067 billion. The average non-performing loans were at Ksh 19.054 billion with the highest recording at Ksh 66.810 billion. The average operational costs were at Ksh 19.395 billion with the highest recording at Ksh 44.229 billion. The average operating income were at Ksh 31.975 billion with the highest recording at Ksh 71.641 billion.

A positive correlation coefficient was revealed after analyzing the data between financial performance and credit risk management as exhibited by correlation factor of 0.285 and the relationship was considered to be statistically insignificant as depicted by the p value of 0.058 which was more than 0.05. A positive correlation coefficient was revealed after analyzing the data between liquidity risk management and financial performance as exhibited by correlation factor of 0.159; however, the relationship was considered to be statistically insignificant as depicted by the p value of 0.296 which was more than 0.05.

A positive correlation coefficient was revealed after analyzing the data between operating risk management and financial performance as exhibited by correlation factor of 0.74 and the relationship was considered to be statistically significant as depicted by the p value of 0 which was more than 0.05. A positive correlation coefficient was revealed after analyzing the data between asset quality and financial performance as exhibited by correlation factor of 0.265 and the relationship was considered to be statistically insignificant as depicted by the p value of 0.078 which was more than 0.05.

There existed a positive correlation between risk management and financial performance of Tier 1 commercial banks as revealed by 0.754 correlation co-efficient. The R^2 , showed that 56.9% of the variations of financial performance were explained by risk management. At a 5% level of significance, the overall model was declared significant since F computed (13.184) was above the F crucial (value = 2.606), indicating that risk management had a significant effect on financial performance. The p value was 0 which was less than 0.05 an indication that there was a significant effect between risk management and financial performance at 5 % significant level.

When all independent variables were held to constant zero, financial performance would be at 0.013. A unit increase in credit risk management would result to a 0.026 increase in financial performance. A unit increase in liquidity risk management would result to a - 0.022 decrease in financial performance. A unit increase in operating risk management would result to a 0.496 increase in financial performance. A unit increase in asset quality would result to a -0.02 decrease in financial performance.

5.3 Conclusions

Credit risk management had a positive effect on financial performance of commercial banks in Kenya since it helps in identifying and mitigating high-risk borrowers and loans. By ensuring that loans are extended to creditworthy individuals and businesses, a financial institution can reduce the likelihood of loan defaults and non-performing assets, leading to a healthier loan portfolio and hence improved financial performance.

Liquidity risk management had a positive effect on financial performance of commercial banks in Kenya as adequate liquidity management ensures that an organization has the funds to cover its short-term liabilities. This stability is crucial for maintaining investor and stakeholder confidence, contributing to a positive reputation and financial health and hence improved financial performance.

Operating risk management had a positive effect on financial performance of commercial banks in Kenya. This is because investors and customers are more likely to bank with financial institutions with effective operating risk management strategies in place. Lower operational costs also contribute to improved profitability through mitigating the financial impact of certain operational risks.

Asset quality had a positive effect on financial performance of commercial banks in Kenya. This is because when loans and investments are of high quality, the bank's interest income is more secure, and the need for provisions and write-offs due to non-performing assets (NPAs) is reduced, leading to improved net earnings.

5.4 Policy Recommendations

Commercial banks should diligently oversee the credit reports of their customers to ensure that they extend credit to individuals with a strong creditworthiness, thereby minimizing the likelihood of loan defaults. Additionally, these banks should optimize their internal lending processes to prevent any conflicts between their staff and customers who may pose a higher risk of default when considering loan approvals.

The research suggests that commercial banks should strike a balance in retaining an optimal level of liquidity, ensuring they avoid customer-induced panic withdrawals while simultaneously providing sufficient credit to customers to boost their interest income.

The banks must establish effective internal controls and protocols to minimize instances of fund mismanagement, forgery, check fraud, hacking, and the acquisition of unauthorized information, all of which can have detrimental effects on the banks' performance. Moreover, they should prioritize the hiring of capable and trustworthy personnel to mitigate operational risks.

Commercial banks should consider diversification of Loan Portfolio so as to avoid overconcentration of loans in a single sector or industry. Diversify the loan portfolio to spread risk across various sectors, reducing the impact of economic downturns on asset quality.

5.5 Limitations of the Study

The research encountered several limitations. The study was restricted to only 5-year period from the year 2018 to the year 2022 from which data was derived, a longer term of the study might have captured periods of different financial significance such as booms and recessions. This may have likely given a longer time centre thus given a broader measurement to the issues involved. Future studies should consider increasing the duration

of study. The banks were limited to Tier 1 commercial banks in Kenya, a study of all the commercial banks would have given a better overview of risk management and performance of the entire banking sector.

Secondary data collected from the Bank Supervision and Banking Sector Reports from CBK was the only data used. The data for analysis was not readily available in one database; this made data collection to be a time and effort consuming exercise as the researcher had to collect data from different sources. The study used four variables that is credit risk management, liquidity risk management, operating risk management and asset quality as the variables affecting financial performance. The study therefore overlooked other variables such as firm size, managerial effectiveness and market risks affecting bank performance.

5.6 Suggestions for Further Study

This study sought to determine the influence of risk management on financial performance of Tier 1 commercial banks in Kenya in post Covid pandemic and was confined to credit risk management, liquidity risk management, operating risk management and asset quality as the variables of the study. There were still other variables that affect financial performance of commercial banks such as firm size, managerial effectiveness and market risks and hence future studies should consider incorporating them and establishing their effect on financial performance of commercial banks.

There is need for a study in other Tier commercial banks in Kenya so as to give a better overview of risk management and performance of the entire banking sector and also consider other periods apart from the post Covid pandemic so as to have a better comparison.

The study was restricted to secondary data hence its suggested that other variables from which primary data can be sought be used in determining factors that affect financial performance of commercial banks. This would thus help compare the result findings from the primary data and secondary effect on financial performance of commercial banks.

REFERENCES

- Abbas, F., Butt, S., Masood, O., & Javaria, K. (2019). The effect of bank capital buffer on bank risk and net interest margin: Evidence from the US. *Global Journal of Social Sciences Studies*, 5(2), 72-87.
- Afrifa, G. A., Gyapong, E., & Zalata, A. M. (2019). Buffer capital, loan portfolio quality and the performance of microfinance institutions: A global analysis. *Journal of Financial Stability*, 44, 100691.
- Al-Homaidi, E. A., Almaqtari, F. A., Yahya, A. T., & Khaled, A. S. (2020). Internal and external determinants of listed commercial banks' profitability in India: dynamic GMM approach. *International Journal of Monetary Economics and Finance*, 13(1), 34-67.
- Altaf, K., Ayub, H., Shabbir, M. S., & Usman, M. (2022). Do operational risk and corporate governance affect the banking industry of Pakistan?. *Review of Economics and Political Science*, 7(2), 108-123.
- Altman, E. I. (2018). Applications of distress prediction models: what have we learned after 50 years from the Z-score models? *International Journal of Financial Studies*, 6(3), 70.
- Altman, E. I., & Benhenni, R. (2019). The anatomy of distressed debt markets. *Annual Review of Financial Economics*, 11, 21-37.
- Amira, E. A., Alala, B. O., & Musiega, M. (2023). Influence of Liquidity Risk Management on Financial Performance of Commercial Banks in Kenya. *African Journal of Empirical Research*, 4(2), 7-13.
- Anggari, N. L. S., & Dana, I. M. (2020). The effect of capital adequacy ratio, third party funds, loan to deposit ratio, bank size on profitability in banking companies on IDX. *American Journal of Humanities and Social Sciences Research (AJHSSR)*, 4(12), 334-338.
- Angori, G., Aristei, D., & Gallo, M. (2019). Determinants of banks' net interest margin: Evidence from the Euro area during the crisis and post-crisis period. *Sustainability*, 11(14), 3785.
- Ashraf, M. S., Yazid, A. S., & Remli, N. B. (2021). Impact of Financial Risk Management Practices on Islamic Banks Performance in Pakistan. *Research Journal of Finance and Accounting*, 12(14), 12-22.
- Baldwin, K., Alhalboni, M., & Helmi, M. H. (2019). A structural model of "alpha" for the capital adequacy ratios of Islamic banks. *Journal of International Financial Markets, Institutions and Money*, 6(2), 267-283.

- Banks, E. (2018). *Alternative risk transfer: integrated risk management through insurance, reinsurance, and the capital markets*. John Wiley & Sons.
- Central Bank Report (2020). Retrieved from <https://www.centralbank.go.ke/reports/bank-supervision-and-banking-sector-reports/>.
- Central Bank Report (2022). Retrieved from <https://www.centralbank.go.ke/reports/bank-supervision-and-banking-sector-reports/>.
- Chodorow-Reich, G., Darmouni, O., Luck, S., & Plosser, M. (2022). Bank liquidity provision across the firm size distribution. *Journal of Financial Economics*, 144(3), 908-932.
- Daft, R. L. (2014). *The leadership experience*. Cengage Learning.
- Darjana, D., Wiryono, S. K., & Koesrindartoto, D. P. (2022). The COVID-19 Pandemic Impact on Banking Sector. *Asian Economics Letters*, 3(3) 19-36.
- Echwa, M., & Atheru, G. (2020). Risk Management and Financial Performance of Commercial Banks in Kenya. *Journal of Finance and Accounting*, 4(2), 14-30.
- Ekinci, R., & Poyraz, G. (2019). The effect of credit risk on financial performance of deposit banks in Turkey. *Procedia Computer Science*, 158, 979-987.
- Elnahass, M., Trinh, V. Q., & Li, T. (2021). Global banking stability in the shadow of Covid-19 outbreak. *Journal of International Financial Markets, Institutions and Money*, 72, 101322.
- Englund, R., & Graham, R. J. (2019). *Creating an environment for successful projects*. Berrett-Koehler Publishers.
- Erik, M., & Marko, S. (2011). *A Concise Guide to Market Research: The Process, Data, and Methods Using IBM SPSS statistics*, New York: Springer Heidelberg Dordrecht.
- Fadun, O. S., & Oye, D. (2020). Impacts of operational risk management on financial performance: a case of commercial banks in Nigeria. *International Journal of Finance & Banking Studies*, 9(1), 22-35.
- Fatihudin, D., & Mochklas, M. (2018). How Measuring Financial Performance. *International Journal of Civil Engineering and Technology*, 6(9), 553-557.
- Ghenimi, A., Chaibi, H., & Omri, M. A. B. (2021). Liquidity risk determinants: Islamic vs conventional banks. *International Journal of Law and Management*, 63(1), 65-95.
- Gomez-Mejia, L. R., Berrone, P., & Franco-Santos, M. (2014). *Compensation and organizational performance: Theory, research, and practice*. Routledge.

- Goucha, N. B. S., Belaid, F., & Omri, A. (2020). Bank ownership concentration, board of directors and loan portfolios' quality: evidence from the Tunisian banking sector. *International Journal of Business Performance Management*, 21(3), 329-345.
- Gujarati, N. D. (2014). *Basic Econometrics*, (4 th Ed). New Delhi: Tata McGraw-Hill.
- Hoffmann, P., Langfield, S., Pierobon, F., & Vuillemeys, G. (2019). Who bears interest rate risk? *The Review of Financial Studies*, 32(8), 2921-2954.
- Hubbard, D. W. (2020). *The failure of risk management: Why it's broken and how to fix it*. John Wiley & Sons.
- Imane, Y. (2019). *Risk Management Practices and Financial Performance in Jordan: Empirical Evidence from Islamic Banks*. Setif University.
- Inegbedion, H., Vincent, B. D., & Obadiaru, E. (2020). Risk management and the financial performance of banks in Nigeria. *International Journal of Financial Research*, 11(5), 115-128.
- Ishmail, D. M., Memba, F., & Muriithi, J. (2023). Credit Risk and Financial Performance of Microfinance Banks in Kenya. *Journal of Economics and Finance*, 14(1),67-74.
- Kamil, K. H., Ismail, A. G., & Isa, Z. (2020). Multi-Choice Goal Programming Model for Optimal Financial Resources in Islamic Bank. *Journal of Management*, 59(2), 46-51.
- Kanchu, T., & Kumar, M. M. (2013). Risk management in banking sector—an empirical study. *International journal of marketing, financial services & management research*, 2(2), 145-153.
- Kimani, M. W. (2018). *Relationship Between Credit Risk Management Techniques and Loan Performance of SASRA Regulated Deposit Taking Saccos in Nairobi County* (Doctoral dissertation, University of Nairobi).
- Kodithuwakku, S. (2019). Impact of credit risk management on the performance of commercial banks in Sri Lanka.
- Kothari C. R (2014). *Research methodology: methods and techniques*, (2nd Ed). New Delhi, New Age International.
- Krause, T. A., & Tse, Y. (2016). Risk management and firm value: recent theory and evidence. *International Journal of Accounting and information management*, 24(1), 56-81.

- Kwashie, A. A., Baidoo, S. T., & Ayesu, E. K. (2022). Investigating the impact of credit risk on financial performance of commercial banks in Ghana. *Cogent Economics & Finance*, 10(1), 2109281.
- Mangram, M. E. (2013). A simplified perspective of the Markowitz portfolio theory. *Global journal of business research*, 7(1), 59-70.
- Matayo, W., & Muturi, W. (2018). Effect of financial risk on financial performance of large-scale supermarkets in Nairobi County, Kenya. *International Journal of Social Sciences and Information Technology*, 4(10), 574-591.
- Mishra, S., & Mohanty, P. (2018). Does good governance lead to better financial performance? *International Journal of Corporate Governance*, 9(4), 462-480.
- Mwaura, J. W. (2020). *Financial risk management and financial performance of savings and credit cooperative societies in Nairobi City County, Kenya*. MBA Project Kenyatta University.
- Nguny, D. M. (2019). *Effect of prudential regulatory standards on the financial performance of deposit taking SACCOS in Kenya* (Doctoral dissertation).
- Nguyen, Q. K. (2022). Audit committee structure, institutional quality, and bank stability: Evidence from ASEAN countries. *Finance Research Letters*, 46, 102369.
- Nocco, B. W., & Stulz, R. M. (2006). Enterprise risk management: Theory and practice. *Journal of applied corporate finance*, 18(4), 8-20.
- Odhiambo, O. N. (2019). *Financial Risks and Financial Performance of Commercial Banks in Kenya* (Doctoral dissertation, Kenyatta University).
- Osabiya, B. J. (2015). The effect of employees motivation on organizational performance. *Journal of public administration and policy research*, 7(4), 62-75.
- Osayi, V. I., Ezuem, H. S., & Daniel, M. (2019). Risk Management Approach and Banks' Portfolio Investment Performance in Nigeria. *Risk Management*, 10(6), 42-51.
- Purnanandam, A. (2008). Financial distress and corporate risk management: Theory and evidence. *Journal of Financial Economics*, 87(3), 706-739.
- Rehman, S. U., Mohamed, R., & Ayoup, H. (2019). The mediating role of organizational capabilities between organizational performance and its determinants. *Journal of Global Entrepreneurship Research*, 9(1), 1-23.
- Saunders, M., Lewis, P., & Thornhill, A. (2012). *Research Methods for Business Students* (4th Ed). Harlow: FT Prentice Hall.

- Schonharl, K. (2017). *Decision Taking, Confidence and Risk Management in Banks from Early Modernity to the 20th Century*. Springer.
- Serwadda, I. (2018). Impact of credit risk management systems on the financial performance of commercial banks in Uganda. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*.
- Song, L., & Zhou, Y. (2020). The COVID-19 pandemic and its impact on the global economy: what does it take to turn crisis into opportunity?. *China & World Economy*, 28(4), 1-25.
- Tschemernjak, R. (2004). Assessing the regulatory impact: Credit risk—Going beyond Basel II. *Balance sheet*.
- Wamalwa, M. F., & Mukanzi, C. (2018). Influence of financial risk management practices on financial performance of commercial banks in Kenya, a case of banks in Kakamega county. *The Strategic Journal of Business & Change Management*, 5(4), 1040-1056.
- Wood, A., & McConney, S. (2018). The impact of risk factors on the financial performance of the commercial banking sector in Barbados. *Journal of governance & regulation*, 2(1), 76-93.
- Yeasin, H. M. (2022). Impact of credit risk management on financial performance: A study of commercial banks in Bangladesh. *Interdisciplinary Journal of Applied and Basics Subjects*, 2(1), 14-22.

APPENDICES: RESEARCH DATA

Appendix I: Research Data 2018

	Bank	Net Profit	Total Assets	Total Loans	Total Deposits	Non-Performing Loans	Operational Costs	Operating Income
1.	KCB Bank Kenya Ltd	31,385	621,723	434,361	486,613	30,012	31,583	53,629
2.	Co-operative Bank of Kenya Ltd	17,587	408,304	257,566	304,593	28,953	27,920	47,409
3.	Equity Bank Kenya Ltd	24,382	438,509	231,026	341,782	17,064	29,477	50,053
4.	I & M Bank Ltd	8,725	229,161	118,271	177,250	9,271	14,651	24,878
5.	Absa Bank Kenya Plc	10,250	325,363	186,984	213,033	13,910	14,476	24,580
6.	Standard Chartered Bank Kenya Ltd	11,434	281,516	155,498	220,784	16,644	14,366	24,394
7.	NCBA Bank Kenya PLC	0	0	0	0	0	0	0
8.	Stanbic Bank Kenya Ltd	8,798	280,953	144,434	212,282	21,115	12,414	21,079
9.	Diamond Trust Bank Kenya Limited	5,643	123,014	133,166	102,007	21,661	11,668	19,813

Appendix II: Research Data 2019

	Bank	Net Profit	Total Assets	Total Loans	Total Deposits	Non-Performing Loans	Operational Costs	Operating Income
1.	KCB Bank Kenya Ltd	33,184	674,302	468,258	536,830	34,786	33,052	55,151
2.	Co-operative Bank of Kenya Ltd	20,326	449,616	281,516	330,113	31,156	24,367	40,658
3.	Equity Bank Kenya Ltd	25,974	507,525	290,564	381,138	26,185	24,034	40,102
4.	I & M Bank Ltd	12,012	254,252	281,516	195,841	30,516	22,963	38,316
5.	Absa Bank Kenya Plc	11,857	374,109	244,395	242,375	13,519	16,181	27,000
6.	Standard Chartered Bank Kenya Ltd	12,691	302,296	205,304	236,461	19,345	15,158	25,292
7.	NCBA Bank Kenya PLC	0	0	0	0	0	0	0
8.	Stanbic Bank Kenya Ltd	8,240	292,705	155,307	205,516	18,799	13,445	22,433
9.	Diamond Trust Bank Kenya Limited	5,279	287,251	60,677	81,345	8,244	6,163	10,284

Appendix III: Research Data 2020

	Bank	Net Profit	Total Assets	Total Loans	Total Deposits	Non-Performing Loans	Operational Costs	Operating Income
1.	KCB Bank Kenya Ltd	23,586	758,345	544,837	591,067	66,810	44,229	71,641
2.	Co-operative Bank of Kenya Ltd	16,961	496,823	355,630	370,085	42,825	36,989	59,913
3.	Equity Bank Kenya Ltd	14,207	667,650	307,324	502,423	51,781	30,536	49,460
4.	I & M Bank Ltd	10,289	283,569	259,698	218,153	35,995	30,095	48,746
5.	Absa Bank Kenya Plc	8,300	377,936	229,677	253,630	17,099	19,612	31,767
6.	Standard Chartered Bank Kenya Ltd	7,018	325,873	176,597	256,498	25,038	19,203	31,104
7.	NCBA Bank Kenya PLC	6,955	491,614	165,948	394,813	19,747	18,888	30,594
8.	Stanbic Bank Kenya Ltd	6,237	318,986	160,665	216,805	20,178	17,717	28,697
9.	Diamond Trust Bank Kenya Limited	5,791	166,313	152,711	135,000	22,337	17,408	28,197

Appendix IV: Research Data 2021

	Bank	Net Profit	Total Assets	Total Loans	Total Deposits	Non-Performing Loans	Operational Costs	Operating Income
1.	KCB Bank Kenya Ltd	27,472	555,630	411,666	445,398	34,182	31,354	50,133
2.	Co-operative Bank of Kenya Ltd	16,502	382,830	139,406	285,990	17,621	26,454	42,297
3.	Equity Bank Kenya Ltd	23,086	406,402	221,698	298,703	12,615	28,494	45,559
4.	I & M Bank Ltd	7,516	183,953	126,983	134,247	435	15,766	25,208
5.	Absa Bank Kenya Plc	10,006	271,682	156,843	189,305	2,666	14,901	23,825
6.	Standard Chartered Bank Kenya Ltd	9,510	285,125	107,038	226,051	7,798	14,568	23,294
7.	NCBA Bank Kenya PLC	8,228	239,408	135,443	178,696	18,714	12,462	19,925
8.	Stanbic Bank Kenya Ltd	6,373	96,132	68,153	77,694	27,658	10,599	16,947
9.	Diamond Trust Bank Kenya Limited	5,676	98,232	7,741	65,461	809	10,244	16,380

Appendix V: Research Data 2022

	Bank	Net profit	Total assets	Total loans	Total deposits	Non-performing loans	Operational costs	Operating income
1.	KCB Bank Kenya Ltd	28,482	504,778	373,031	386,611	28,333	30,538	51,125
2.	Co-operative Bank of Kenya Ltd	18,024	349,998	241,395	277,275	11,273	25,990	43,510
3.	Equity Bank Kenya Ltd	22,778	379,749	221,039	259,472	15,457	30,972	51,850
4.	I & M Bank Ltd	12,764	164,116	132,497	178,448	15,038	15,161	25,381
5.	Absa Bank Kenya Plc	10,440	259,498	176,349	186,598	11,472	15,161	25,381
6.	Standard Chartered Bank Kenya Ltd	8,876	250,274	19,354	169,600	272	13,861	23,206
7.	NCBA Bank Kenya PLC	7,593	204,895	105,082	121,989	7,450	11,046	18,492
8.	Stanbic Bank Kenya Ltd	6,910	82,907	4,339	104,160	816	9,746	16,316
9.	Diamond Trust Bank Kenya Limited	6,033	103,324	40,170	103,741	1,855	8,880	14,866