

Financial Risks and Financial Performance of Tier III Commercial Banks in Kenya

Mohamud Dubow Korane^{1*}, ²Salome Musau

¹Student, School Business, Economics and Tourism, Kenya

² Lecturer, School of Business, Economics and Tourism, Kenya

*Email of Corresponding Author: mkorane9@gmail.com

ABSTRACT

Kenya commercial banks' financial performance is influenced by myriad of challenges that can impact their profitability, operational efficiency and overall stability. Therefore, this review endeavored to ascertain financial risks impacts on Kenya's commercial banks financial performance, specifically targeting operational, credit, liquidity and market risk impacts. Theories of Miller and Modigliani, financial distress, financial intermediation and modern portfolio underpinned the review. Employing descriptive research, all 22 tier III banks formed the target populace and census was used. Financial data was collated from existing published statements using secondary designated collection sheet from 2019-2023. Data collected was analyzed using descriptive techniques (mean, median and standard deviation) and inferential statistics (multiple regression). The study revealed that operational, credit, liquidity and market risks had a positive significant effect on Tier III Kenya's commercial banks' financial performance. The research concludes that operational risks have the potential to result in operational failures, which may incur additional costs for mitigation and compliance, thereby placing financial strain on banks. The credit risk may occur in a situation whereby the bank does not effectively evaluate the borrower's creditworthiness resulting to increased number of loan defaulters which also leads to more provisioning costs for bad debts affecting negatively the bank's profitability. The existence of liquidity risk can hinder a bank's ability to effectively manage its liquidity, leading to increased costs related to borrowed funds necessary to meet its obligations, which ultimately diminishes profit margins and impacts the bank's overall financial performance. Fluctuations in interest rates have an impact on the net interest income of banks, which constitutes their revenue stream. This can lead to a reduction in their ability to adapt to such changes, thereby influencing their financial performance. The research suggests that Tier III banks ought to improve their investment in technology by upgrading their information technology systems and implementing more advanced security protocols to reduce the risk of cyber threats. The Tier III banks should adopt a diversified loan portfolio to minimize more reliance of certain industries that could bring higher risks upon economic fluctuations. Tier III banks can properly manage liquidity risks through maintenance of a wider range of financing base such as mix of deposits, loans and other sources of capital. The Tier III banks should adopt a comprehensive structure managing risks, carry out a frequent stress test and have a more diversified lending portfolio to solve the possible losses.

Keywords: *Financial Performance, Financial Risk, Operational Risk, Credit Risk, Liquidity Risk, Market Risk*

DOI 10.35942/0yf66t03

Cite this Article:

Korane, M., (2025). Financial Risks and Financial Performance of Tier III Commercial Banks in Kenya. *International Journal of Current Aspects in Finance, Banking and Accounting*, 7(1), 49-69. <https://doi.org/10.35942/0yf66t03>

<i>Submitted</i> 26 th Aug 2025	<i>Reviewed</i> 30 th Sep 2025	<i>Accepted</i> 04 th Nov 2025	<i>Published</i> 16 th Nov 2025
--	---	---	--

1.0 Introduction

Commercial banks aim to enhance their financial performance through a variety of strategic initiatives and operational improvements with the aim of building a resilient and sustainable business model that can adapt to the changing landscape of the financial industry (Elamer & Benyazid, 2018). According to Liang, Wang and Dawes Farquhar (2021), banks seek to increase their income by expanding their product and service offerings, entering new markets, and attracting a larger customer base. This may involve developing innovative financial products, such as new investment vehicles or digital banking solutions, to meet the evolving needs of consumers and businesses. Adeusi, Akeke, Adebisi and Oladunjoye (2019) establishes effective risk management as organizational success cornerstone, crucial in ensuring financial stability and enhancing overall performance. This is because in current's complex and fast-paced business environment, organizations recognize the importance of proactively addressing potential risks that could jeopardize their operations and financial health. Elamer and Benyazid (2023) observe that to navigate diverse risk categories, organizations develop comprehensive risk management frameworks that encompass policies, procedures, and governance structures. These frameworks provide a systematic approach to risk assessment and management, helping organizations proactively detect emerging risks and establish effective countermeasures to safeguard operations.

Elamer and Benyazid (2018) highlight that financial risk management integration by international financial institutions is vital in enhancing their financial performance. Globally, international financial institutions in United States and United Kingdom have implemented advanced risk management practices that have significantly improved their resilience during economic downturns. The 2008 financial crisis highlighted robust risk management systems' prominence, prompting several institutions to enhance their risk assessment methodologies and stress testing capabilities. As a result, these institutions have been able to maintain stability and protect their assets, leading to improved financial performance in the long run (Bastomi, Salim & Aisjah, 2021; Poudel, 2022). Silva, Silva and Chan (2019) point that financial risk management integration in Brazil has facilitated greater access to international capital markets whereby by demonstrating a commitment to sound risk management practices, the country has attracted foreign investment, which has contributed to economic growth and development. De-Oliveira, Basso, Kimura and Sobreiro (2022) observe that the adoption of technology and data analytics in financial risk management has transformed the way Brazilian financial institutions operate enabling these institutions can identify potential risks more accurately and respond proactively. This technological advancement not only improves risk management efficiency but also enhances decision-making processes, leading to better financial outcomes.

Munangi and Sibindi (2020) observe that South Africa's financial institutions have embraced comprehensive risk assessment frameworks encompassing wide range of financial risks, including credit, market, operational, and liquidity risks. Chiliya, Rungani, Chiliya and Chikandiwa (2022) observe that implementation of advanced analytics and stress testing has allowed these institutions to better anticipate potential financial shocks, thereby positioning themselves to respond more effectively to adverse economic conditions contributing to a more resilient banking sector, which is crucial for maintaining investor confidence and fostering economic growth. Therefore, by systematically identifying, measuring, and mitigating these risks, South African banks have not

only enhanced their stability but also improved their profitability. According to Adeusi, Akeke, Adebisi and Oladunjoye (2019) Nigeria banks have recognized vitality of robust risk management strategies in achieving favorable fiscal outcomes and the Nigerian financial sector has faced numerous challenges, including economic volatility and regulatory changes. Chiliya, Rungani, Chiliya and Chikandiwa (2022) observe that many banks in Nigeria have developed and implemented comprehensive risk management frameworks that prioritize risk identification and mitigation including the use of technology to enhance data analysis and reporting, as well as the establishment of dedicated risk management teams tasked with overseeing compliance and risk exposure. As a result, Nigerian banks have reported improved financial performance, characterized by increased profitability and reduced non-performing loans. In Kenya, Otieno, Nyagol and Onditi (2020) observe that the Central Bank has established various guidelines and regulations aimed at promoting sound risk management practices among financial institutions and through adhering to these regulations, banks not only avoid potential penalties but also position themselves as responsible entities in the eyes of regulators and the public. Lelgo and Obwogi (2022) posits that financial risk management integration within financial institutions in Kenya is not merely a regulatory requirement but a strategic imperative that significantly enhances their financial performance. This compliance can further enhance financial performance by reducing the costs associated with regulatory breaches and fostering a stable operating environment. Therefore, by improving decision-making, fostering transparency, ensuring regulatory compliance, and facilitating better capital allocation, banks can navigate the challenges of the financial landscape more effectively.

1.1.1 Financial Performance

This is a comprehensive company's fiscal health evaluation, encompassing various dimensions that reflect its potential in profit generation, manage expenses and provide value to stakeholders, like employees, shareholders, broader community and customers (Fatihudin, 2018). This evaluation is crucial for understanding how well a company is positioned in its industry and how effectively it is utilizing its resources to achieve its financial goals. Waddock and Graves (2022) accentuate vitality of profitability as financial performance fundamental measure. Profitability is not merely a reflection of a company's ability to earn money; it also functions as a vital metric reflecting organization's knack to operate efficiently and execute strategic goals effectively. Barker (2020) argues for including market performance metrics, like stock price growth and market capitalization, in assessing a company's financial performance. This approach broadens success evaluation beyond traditional indicators focused on internal efficiency and profitability. Purdy, Langemeier, and Featherstone (2021) support this view, emphasizing that financial success is influenced not only internally but also externally like investor sentiment and market trends. In addition, recognizing market performance metrics allows commercial banks to align their strategies with investor expectations and market dynamics, enhancing their public image and investor relations. Therefore, integrating market performance metrics into financial assessments marks a significant evolution in evaluating corporate success in today's complex economy.

Collison, Cobb, Power, and Stevenson (2023) present a framework for understanding financial performance by integrating liquidity and solvency ratios. This highlights the importance of a bank's capacity to cover short-term liabilities, essential for operational continuity and avoiding financial distress. Liquidity ratios, like the current and quick ratios, indicate short-term financial health by showing the capacity to convert assets into cash for immediate liabilities. Supporting this, Smith and Taffler (2022) identify key metrics for evaluating liquidity and solvency, including the current

ratio, debt-to-equity and quick ratio. Together, these insights emphasize the need for a balanced approach to liquidity and solvency in assessing fiscal performance. However, Return on Assets (ROA) measured commercial banks' financial performance. ROA is a vital financial indicator assessing how adeptly a bank leverages its assets to optimize revenue streams, reflecting overall operational performance and managerial effectiveness, allowing stakeholders to evaluate bank's ability to convert investments in assets into net income (Lassala, Apetrei & Sapena, 2017). Alie, Hermansyah, Maryana and Oktaria (2023) observe that a higher ROA reflects effective asset management and operational efficiency, making it an important metric for investors, analysts, and company management alike. Therefore, by understanding and leveraging ROA, stakeholders can obtain clearer understanding of commercial bank's financial stability and operational performance.

1.1.2 Financial Risks

Financial risk is generally chance of incurring financial loss or experiencing adverse financial outcomes due to multifaceted influences, including market fluctuations, credit and operational challenges (Dionne, 2021). Financial risk is frequently analyzed by Adler and Dumas (2023) through quantitative models that assess the likelihood and impact of various risk factors. These models help organizations and investors make informed decisions by quantifying potential losses and identifying risk mitigation strategies. Therefore, through this definition stakeholder are able to navigate the financial landscape effectively and to implement robust risk management practices. Gabriel and Baker (2022) provide a comprehensive analysis of financial risk, specifically focusing on market risk as the potential for financial losses that arise from market conditions shifts, particularly fluctuations in market prices and interest rates which reflects the uncertainty associated with the overall market environment. Kuritzkes (2022) define financial risk in terms of operational risk, encompassing loss potential emanating from deficient ineffectual internal processes, external events, systems and people. This broad spectrum of definitions underscores the complexity of financial risk and comprehensive risk management strategies need. Further, Central Bank of Kenya categorizes risk into the following: Strategic, credit, liquidity, market, operational, information and communication technology, reputational, compliance and country/transfer risks (CBK, 2013). Therefore, operational, credit, liquidity and market risk operationalized financial risk in this review.

Fadun & Oye (2020) observe operational risk as loss potential emanating from deficient ineffectual internal processes, external events, people and systems and encompasses diverse risks like fraudulent behavior, system outages, human errors and natural calamities. Santika, Fakhruhozy, Nur and Lestari (2022) observe that when operational risks are realized, companies often incur costs related to fixing the issues, such as hiring consultants, implementing new systems, or training employees. Therefore, operational risk is a multifaceted challenge that can have far-reaching consequences for a company's financial health. Credit risk denotes likelihood of a borrower defaulting on their contractual commitments, causing potential financial setbacks for the lender and may arise from various sources, including loans, bonds and other forms of credit exposure (Al-Eitan & Bani-Khalid, 2019). Otieno, Nyagol and Onditi (2021) observe that credit risk directly affects a financial institution's profitability. High non-performing loans (NPLs) levels can lead to increased provisions for loan losses, which reduce net income. Conversely, effective credit risk management can enhance profitability by curtailing losses and optimizing the risk-return profile of the loan portfolio.

Liquidity risk arises when an organization is unable to liquidate assets without enduring considerable value reduction and it's particularly pertinent in financial markets, where the ability

to buy or sell assets quickly can be crucial for maintaining operational stability (Effiong & Ejabu, 2020). According to Ariffin (2022), liquidity risk directly affects an organization's cash flow though insufficient liquidity can lead to cash flow shortages, making it difficult to pay suppliers, employees, and other operational expenses which precipitate operational disturbances and harm supplier relationships. Market risk encompasses losses risk in financial markets owing to factors that affect entire market or a particular segment of it which include economic changes, interest rate, currency exchange rate and commodity prices fluctuations (Ekinci, 2019). According to Heckmann, Comes and Nickel (2023), market risk can lead to unpredictable revenue streams since a decline in consumer demand due to economic downturns can reduce sales, directly impacting revenue. In addition, companies may become more conservative in their investment strategies during periods of high market risk, potentially leading to missed opportunities for growth and innovation.

1.1.3 Commercial Banks in Kenya

Kenyan commercial banks operate within Central Bank of Kenya (CBK) regulatory scope. CBK's roles include designing and enforcing monetary policy, overseeing banking industry and maintaining financial stability. These banks deliver diverse financial offerings such as deposit accounts like savings, current and fixed deposits; credit products like personal, business, mortgage and overdraft loans; investment solutions including wealth management, advisory and brokerage services; foreign exchange operations, such as currency conversion and cross-border transfers; and mobile banking platforms, enabling clients to conduct transactions conveniently via their mobile devices. Kenyan banks have consistently reported a healthy ROA, often averaging between 2% to 3% over the past few years. This indicates efficient management of assets to generate profits. Kenyan banks ROE has been robust, often exceeding 15%. This reflects the banks' ability to generate returns for their shareholders. The Net Interest Margin (NIM) for Kenyan banks has remained relatively stable, typically ranging from 4% to 6%. This margin is indicative of the banks' ability to manage interest income and expenses effectively. Their total assets have also shown consistent growth, often increasing by 10% to 15% annually. This growth is driven by an increase in customer deposits, which have also seen similar growth rates. The total deposits in the banking sector have surpassed KES 4 trillion, indicating a strong public confidence in the banking system (CBK, 2023).

1.2 Statement of the Problem

Kenyan commercial banks' financial performance has come under scrutiny recently. CBK's 2023 report shows that average ROA is below regional average, indicating asset utilization inefficiencies. Decline in ROE has also been reported by many banks, with figures falling below the 10% benchmark for strong performance. Additionally, the Non-Performing Loan (NPL) ratio exceeds 12% in some institutions, well above the regulatory limit of 5%, raising concerns about loan quality and credit risk management. Many banks struggle to maintain a Liquidity Coverage Ratio (LCR) above the 100% minimum, indicating liquidity issues. While the minimum Capital Adequacy Ratio (CAR) is 14.5%, some banks are close to this threshold, questioning their ability to absorb losses. The 2016 interest rate cap has also negatively impacted profitability by constraining competitive loan pricing and reducing net interest margins.

Inadequate management of financial risk has also been a substantial concern, particularly the country's evolving economic landscape. For instance, the report indicate that NPL ratio in Kenya has fluctuated, with figures hovering around 13% in 2022, indicating non-repayment of significant

loan portions. This is a clear indicator of credit risk management inadequacies. The average lending rate has been reported to fluctuate between 12% and 14%, impacting banks' profitability and risk management strategies. The Liquidity Coverage Ratio (LCR) for many banks has been reported to be below the recommended levels, indicating potential liquidity risk. A ratio below 100% suggests that banks have deficient liquid assets to cover current debts. Growing dependence on technological advancements in banking operations has ushered novel operational risks. Cybersecurity threats have become a pressing concern, with reports indicating that Kenyan banks have faced numerous cyberattacks, leading to financial losses and reputational damage. Juma & Atheru (2018) established a substantial foreign exchange risk negative correlation with ROA. They identified a conceptual gap, noting strong correlations between liquidity, credit, market, and operational risks and financial performance, but their reliance on primary data posed a methodological issue. Baraza (2020) also studied financial risk's influence on banks listed on the Nairobi Securities Exchange, while Mwanzia (2021) found weak insignificant financial performance relationship with both liquidity and credit risk management. Mwanzia's examination was limited to 2016-2020, highlighting a contextual gap. Therefore, this review endeavored to ascertain financial risks impacts on Kenya's banks fiscal performance.

1.4 Research Hypotheses

HO₁: Operational risk has no significant effect on financial performance of Tier III commercial banks in Kenya

HO₂: Credit risk has no significant effect on financial performance of Tier III commercial banks in Kenya

HO₃: Liquidity risk has no significant effect on financial performance of Tier III commercial banks in Kenya

HO₄: Market risk has no significant effect on financial performance of Tier III commercial banks in Kenya

2.0 Review of Literature

2.1 Theoretical Review

2.2.1 Miller and Modigliani Theory (MM)

Miller and Modigliani Theory is a key corporate finance concept introduced by economists Franco Modigliani and Merton H. Miller in 1958. It transformed understanding firm's capital structure relationship with its value. Their first proposition states that in a perfect market without taxes, bankruptcy costs, or asymmetric information a firm's value is unaffected by its financing method, whether through equity or debt. The second proposition indicates that as a firm increases its leverage, the cost of equity rises to offset the higher risk, but the overall weighted average cost of capital remains unchanged. Glickman (2019) argue that that primary critic of the Miller and Modigliani Theory is its reliance on the perfect capital markets assumption. In reality, markets are often imperfect due to factors such as transaction costs, taxes, and information asymmetries. These imperfections can lead to situations where capital structure does affect firm's value. Brusov, Filatova, Orekhova and Eskinarov (2022) critics about the theory point to behavioral finance as a challenge to the Miller and Modigliani Theory. Investors may not always act rationally, and their perceptions of risk and return can be influenced by psychological factors culminating into market inefficiencies. MM Theory helps identify several financial risks. For Kenyan banks, effective management of these risks is crucial in sustaining stability and profitability. The theory encourages

utilization of risk-adjusted performance metrics to evaluate banks' performance. This is particularly relevant in Kenya, where economic volatility can significantly impact financial outcomes.

2.2.2 Financial Distress Theory (FDT)

Edward I. Altman introduced the financial distress theory in 1968, aiming to systematically assess companies' financial health and predict bankruptcy. He developed the Altman Z-score, a formula that uses various financial ratios profitability, leverage, liquidity, solvency, and activity to evaluate a company's condition. The Z-score combines five key metrics: working capital to total assets, retained earnings to total assets, earnings before interest and taxes to total assets, market value of equity to total liabilities, and sales to total assets, providing a numerical value indicating the likelihood of financial distress. Altman's (1968) work emphasized the importance of early detection of financial issues, allowing stakeholders to take proactive measures. The Z-score has become a vital tool in financial analysis, used by analysts, credit rating agencies, and corporate finance professionals to assess creditworthiness. Raza, Gillani, Ramakrishnan, Gillani and Imran (2020) criticize the finance distress theory by indicating that it oversimplifies the complex relationship between financial distress and corporate performance, failing to consider various factors like market conditions, management decisions, and industry dynamics. On the other hand, Anvary (2021) contend that the theory's reliance on quantitative metrics, such as debt-to-equity and liquidity ratios, does not fully capture a firm's operational capabilities or strategic positioning. For example, a company with high debt may still have strong cash flows and a competitive edge, suggesting that financial distress may not be as harmful as the theory suggests. This theory is crucial for analyzing how financial risks affects commercial banks' stability and profitability as it helps identify specific financial risks that can lead to distress. Therefore, by understanding these risks, banks can execute more effective risk management strategies. For instance, FDT emphasizes the importance of maintaining adequate capital reserves and liquidity to absorb shocks from unexpected financial downturns.

2.2.3 Theory of Financial Intermediation

Founded by Allen and Santomero (1998), financial intermediation theory, primarily pegged on information asymmetry concept. It posits that financial intermediaries are present in an economy due to information asymmetry especially between savers and borrowers (Havrychuk & Verdier, 2018). In other words, the driving force in financial intermediation is due to lack of perfect information in the market hence there is need to find a common platform for the stakeholders. Moreover, the motive behind establishment of numerous forms of financial institutions is due to existence of different levels of information asymmetry in the economies (Bongomin, Ntayi, Munene, & Akol, 2017). This theory has been used in this study as it provides insights on the existence of banks as financial intermediaries between the savers and the lenders. As intermediaries, they exist to make sure the interests of each group are taken care of. By so doing, they have to make sure the businesses are profitable enough to give return on investment to the savers. And therefore, the managers have a duty to make care the financial risks are well taken care of and well managed (Nobili, Scalia, Iannamorelli, & Zaccaria, 2023). Therefore, understanding the theory offers information on existence of different financial risks in the banking sector. In this aspect, many of the risks occurs due to the market's information asymmetry.

2.2.4 Modern Portfolio Theory (MPT)

MPT, developed by Harry Markowitz in 1952, provides a structure for portfolio optimization, advocating for diversification as a means to reduce overall risk while maximizing returns (Lekovic, 2018). It asserts that individual assets should not be analyzed in isolation but in relation to the overall portfolio, allowing investors, including financial institutions, to construct asset combinations that achieve greater returns without necessarily increasing risk exposure. The theory operates under key assumptions, including investor rationality, risk aversion, a normal distribution of returns, equal access to market information, and the efficiency of financial markets (Yu & Zhang, 2023). Given these premises, MPT has significant implications for commercial banks, especially Tier III institutions in Kenya, where financial risk management directly impacts financial performance.

MPT is crucial in financial risk management by providing a systematic method of evaluating risk and return trade-offs across multiple assets. It allows banks to construct diversified portfolios that mitigate exposure to financial shocks while enhancing expected returns. The theory suggests that financial institutions should assess risk through a multidimensional lens, incorporating insights from various data resources like financial statements, market sentiment and economic indexes. Relying solely on one risk assessment method, such as interpreting news reports, may lead to incomplete evaluations, potentially overlooking critical risk factors embedded in financial reports or macroeconomic data. A holistic approach ensures that banks consider the broader market dynamics affecting financial stability.

Despite its advantages, MPT has notable limitations. One key concern is its reliance on historical data to inform portfolio decisions, which may not account for sudden market disruptions or shifting economic conditions. The assumption that investors behave uniformly and share common risk preferences overlooks variations in financial strategies and institutional objectives. Additionally, MPT does not inherently predict future events, leaving banks vulnerable to unforeseen financial crises that could significantly alter portfolio performance (Zhang, 2024). Another critique involves the assumption that market volatility follows a normal distribution. Empirical studies have shown that financial returns may exhibit skewness or kurtosis, challenging the conventional risk estimations within MPT (Schulmerich et al., 2015). When combined with measures such as the Sharpe ratio, these assumptions may affect risk-adjusted performance calculations, requiring financial institutions to explore alternative distribution models for more accurate assessments. This examination underscores the relevance of MPT in structuring investment decisions. Effective diversification strategies and risk assessment models enable banks to mitigate financial vulnerabilities while optimizing profitability. However, the limitations of MPT suggest the need for complementary risk management approaches that account for market uncertainties and institutional variations. By integrating traditional risk evaluation techniques with advanced financial modeling, banks can achieve a more resilient approach to financial performance optimization, ensuring long-term sustainability and competitiveness in the evolving financial landscape.

2.3 Empirical Review

2.3.1 Operational Risk and Financial Performance

Qabajeh, Almajali, Natour, Alqsass and Maali (2023) studied operational risk impacts on MENA banking sector profitability, using 20 Islamic banks from 12 nations over a decade (2011-2020) with fixed effect models. They analyzed ROA and ROE as indicators of financial health, with

operational risk indicated by efficiency ratio. Outcomes exhibited strong inverse connection between operational risk and profitability, indicating that higher operational risk leads to poor management control, increased operating expenses, and lower profit levels. Nevertheless, the study presents both contextual and methodological gap. Lyambiko (2019) examined operational risk management impacts on Tanzania's 36 commercial banks financial performance as of December 31, 2013. Using a census approach, the research analyzed Bank of Tanzania secondary data and banks' financial reports from 2009 to 2013. A descriptive survey method was employed, and regression analysis assessed the influence of credit risk, insolvency and operational efficiency on financial performance, indicated by ROA. The findings revealed varying independent variables' correlations, indicating that effective operational risk management positively affected their returns. However, a contextual gap exists, given that the study's scope was confined to Tanzanian commercial banks.

Ishmail, Memba & Muriithi (2023) explored operational risk connection with financial outcomes within Kenyan microfinance banks overseen by CBK. Adopting a census approach, they evaluated secondary data derived from annual reports of 13 MFI's spanning 2011 to 2019. It involved an explanatory research framework coupled with an unbalanced panel regression model. Outcomes demonstrated a noteworthy inverse relationship between the variables, as indicated by ROA. Conversely, link with ROE appeared weak and statistically insignificant. It is important to note that their focus on microfinance banks introduces a contextual limitation to the results generalizability. Mrindoko, Macha & Gwahula (2020) examined the performance of Tanzanian commercial banks from 2006 to 2019 using panel data from all 41 licensed banks, sourced from the Bank of Tanzania and the National Bureau of Statistics. Employing a longitudinal quantitative approach and analyzing data with STATA14, the research focused on operational risk variables such as portfolio concentration ratio (PCR), operating expense ratio (OER), bank leverage ratio (BLR) and cost-to-income ratio (CIR). Findings revealed that PCR and BLR negatively but insignificantly impacted ROE, while OER and CIR negatively and significantly impacted ROE. Regarding Return on Assets (ROA), PCR and CIR significantly reduced bank performance; BLR had a positive but insignificant effect, and OER's impact was insignificant. Results suggest that increasing PCR and CIR diminish bank performance, and the study advises that bank management adopt MPT Theory and information asymmetry theory to choose less risky portfolios and borrowers, thereby reducing operational costs and risks. However, a contextual gap is presented by Tanzania being the focus country, whole findings generalization maybe impossible maybe due to contrasting regulatory frameworks

2.3.2 Credit Risk and Financial Performance

Bhattarai (2021) examined credit risk impacts on Nepal's 14 commercial banks performance from 2010 to 2019 utilizing both descriptive and causal comparative designs and regression model for analysis. Outcomes indicated NPL adverse effects, 'cost per loan assets' and bank size positive influences. However, capital adequacy ratio and cash reserves were not identified as significant factors affecting bank performance. Existence of notable bank performance relationship with credit risk indicators was established. However, a contextual gap since was identified in the analysis of Nepalese commercial banks from year 2010 to 2019. Siriba (2020) ascertained credit risk impacts on Kenyan commercial banks financial performance (2014-2018), grounded in credit risk theory which suggests credit risk inverse connection with firm performance. Utilizing bank financial statements secondary data, the analysis employed descriptive statistics and multiple regression. Results indicated that NPL ($p= 0.394$) and loan loss provisions ($p= 0.653$) negligibly

negatively impacted profitability, while loans and advances significantly positively influenced bank profitability ($p= 0.001$). The findings recommend that banks enhance client assessment and loan analysis to better manage credit risks. A methodological gap is identified in the study of all commercial banks instead of top tier banks that this study intends to zero in.

Ukpong and Essien (2020) ascertained credit risk impacts on Nigeria's largest publicly listed commercial banks fiscal outcomes, by Ex-post facto design. The research zeroed on the ten largest banks as of December 2021, analyzing data from 2017-2021. Secondary data were sourced from annual reports, and descriptive statistics summarized key metrics. Regression analysis tested the hypotheses, revealing liquidity ratios' notable connection with financial performance, but no significant correlation with exchange and interest rates. The findings indicated that rising exchange and interest rates led to decreased return on assets, concluding that higher interest rates negatively impact bank performance. However, the study analysed financial performance data from 2017 to 2021. Mercylynne and Omagwa (2017) studied credit risk management link with selected Kenyan commercial banks' fiscal performance. Employing descriptive research and probability sampling, they collected data from 42 respondents via questionnaires. Outcomes indicated that debt recovery efforts effectiveness had little to no significant impact on overall bank performance. In contrast, critical processes such as loan evaluation, lending criteria and credit policy were more influential. Consequently, the review emphasized banks' needs to proactively manage their credit risk exposure to optimize returns and recommended that commercial banks implement stricter loan appraisal measures and ensure compliance with lending requirements to enhance financial performance. However, the study was limited on sample size as it zeroed on selected Kenyan commercial banks.

2.3.3 Liquidity Risk and Financial Performance

Onywera (2022) explored financial risk influence on Kenyan commercial banks performance, recognizing that despite numerous studies on this topic, conclusive evidence remains elusive. The primary focus is to determine how four key financial risks—market risk, operational risk, credit risk, and liquidity risk—affect banks' financial performance. The theoretical frameworks underpinning the study include the financial distress theory and stakeholder theory, providing insights into how financial risks can lead to distress or influence stakeholder perceptions. Employing descriptive research, the study targeting all 42 commercial banks licensed by CBK, using CBK and bank database secondary data. Data analysis was conducted using Microsoft Excel for initial data presentation and SPSS for statistical testing. Insights are expected offer invaluable insights for legislative bodies and banks aiming to boost risk management strategies and improve bank performance. Rahman and Saeed (2019) examined liquidity risk impacts on Malaysian banks performance from 2005 to 2018, using three liquidity risk indicators. Their findings revealed that Malaysian banks maintain reasonable liquid assets and a strong capital position without excessive lending. However, not all liquidity risk indicators significantly affected bank performance. Loan-to-deposit ratio negligibly impacted, while liquid asset to total assets ratio imposed opportunity costs. Capital to asset ratio showed mixed results. Overall, the study concluded that liquidity risk impact is complex and varies by performance metric. However, the study analysed financial performance from the year 2005 to 2018.

Ezelda (2019) reviewed credit and liquidity risks impacts on listed Johannesburg Stock Exchange (JSE) South African banks financial performance from 2017 to 2022, focusing on the pre- and post-COVID-19 periods. Data was sourced from Bloomberg, and the methodology included descriptive paired t-tests and multiple regression analysis to assess pandemic's effects on financial

metrics. The paired t-test revealed significant impact differences in ROA and ROE before, during, and after the pandemic. Additionally, significant differences in liquidity and credit risks were noted between the pre- and during-pandemic periods, but no significant differences were found post-pandemic, suggesting stabilization of these risks. Multiple regression further examined risk factors connection with profitability, providing deeper insights into the banks' financial dynamics. However, a contextual gap was identified in reviewing South African banks from 2017 to 2022. Ratemo and Ndede (2021) investigated liquidity risk impacts on 42 Kenya's commercial banks financial performance, using causal research and bank records secondary data from CBK. Analysis with Stata 14.0 revealed that bank size positively impacts financial performance, while asset quality negatively affects it. Capital adequacy showed a positive but insignificant correlation, contrasting to the strong positive association of operational efficiency. Additionally, money supply was found to moderate liquidity risks connection with overall bank performance. However, a methodological limitation was identified, as it employed causal research, which may restrict causal inferences depth drawn from the outcomes.

2.3.4 Market Risk and Financial Performance

Siddique, Khan & Khan (2022) examined market risk management influences on banking factors on South Asian commercial banks financial performance, using secondary data from 19 banks (10 from Pakistan and 9 from India) from 2009 to 2018. Utilizing GMM to derive coefficient estimates, outcomes exhibited that higher levels NPLs, CIR and LR detrimentally impacted financial success, indicated by ROA and ROE. On the other hand, the capital adequacy ratio (CAR) and asset-liability ratio (ALR) showed a positive association with overall performance. However, the review's reliance on secondary data presents a methodological limitation. Uddin, Hossain, and Rahman (2023) studied market risk management impacts on Bangladesh's banking sector financial performance, focusing on nine listed commercial banks from 2016 to 2022. Using robust least squares regression and a dynamic model to address indigeneity, they found that non-performing loans (NPL) negatively affect performance, while average lending rate, capital adequacy, inflation and liquidity ratios. The study identified cross-sectional dependency and autocorrelation in the data. It recommends reducing NPL ratios and improving capital adequacy and liquidity ratios, along with implementing stricter fiscal and banking regulations for better governance and financial stability. However, the study focused on Bangladesh's banking sector financial performance from 2016 to 2022.

Gathigia, Munyua and Muturi (2020) examined how market risk affects financial outcomes of 43 Kenyan commercial banks, using balance sheet data and financial ratios. They applied panel data methods, including fixed effects and GMM, to control for unobserved effects and endogeneity. Their analysis involved pairwise correlations, F-tests for regression significance, and R^2 to assess explanatory power. Outcomes indicated credit risk negative connection with profitability, suggesting that high NPL ratios and poor asset quality undermine both short and long term bank performance. The review focused on data from 2016 to 2019. Maniagi (2018) investigates how various financial risks influence Kenyan commercial banks performance. Covering data from 2006 to 2015, both panel primary and secondary data were utilized from 30 banks and responses from 220 risk-related managers. Using descriptive statistics, correlation analysis, and regression models in E-Views and SPSS, findings revealed credit risk negatively influences bank performance, emphasizing the need for effective credit management. Conversely, market and interest rate risk positively influenced performance, suggesting that fluctuations in these areas can enhance profitability. The study recommends that banks implement policies to manage credit exposure,

assess borrower creditworthiness, hedge against macroeconomic factors, and actively trade foreign exchange to boost performance. Additionally, maintaining adequate liquidity and establishing early warning systems are crucial for effective risk management and sustaining bank profitability.

3.0 Methods

Descriptive research was utilized to collate comprehensive information regarding subject matter. This approach aligns with the observations made by Morrow (2020), who noted that such a design facilitates a clearer understanding of the topic by gathering data through questionnaires. Consequently, by concentrating on specific characteristics, the study was positioned to identify patterns and trends that might not be readily apparent. Similarly, Tetnowski and Damico (2021) assert that descriptive research is instrumental in comprehending the present state of a situation without implementing alterations. Thus, this method enabled the researcher to offer a thorough overview and derive significant conclusions from data amassed. Target population encompasses all entities within the interest's scope on which a study is to be conducted and is defined as having similar characteristics (Harris *et al.*, 2019). It can be vents, people, subjects, or objects which the study focuses to draw conclusion, inference, and generalization. CBK (2022) reports 22 tier III Kenyan commercial banks formed the target population The study adopted census sampling survey design due to small population size. All 22 tier III Kenyan commercial banks were chosen for this examination. The census sampling survey design concerns with examination of the entire group of interest in a research activity.

Secondary data collected from audited published financial statements for the 22 tier III Kenyan commercial banks. In addition, it utilized the CBK supervision reports. The relevant statistics were collected for the last financial five years i.e., 2018/2019, 2019/2020, 2020/2021, 2021/2022, ad 2022/2023. The study adopted the SPSS Version 26 software to compute descriptive and inferential statistics to be used in the data analysis. Mean, standard deviation, minimum, and maximum, formed descriptive statistics while coefficient of determination (R-square), p-value, t-statistics, F-statistics, and regression correlation coefficients formed inferential. Summary writing on the output statistics were done through the Microsoft word application. The panel regression model was adopted as given below

The panel multiple regression equation is represented as follows;

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \varepsilon_{it}$$

Where: β_0 – intercept

X_1 – Operational risk

X_2 – Credit risk

X_3 – Liquidity risk

X_4 – Market risk

$\beta_1 \dots \beta_4$ - Coefficients

ε - Error term

4.0 Results

4.1 Descriptive Statistics Results

The results of descriptive statistics were based on Mean, standard deviation, minimum, and maximum for each specific variable to establish distribution and variability of data. The findings are presented in Table 1.

Table 1: Descriptive Statistics Results

Variable	Mean	Standard deviation	Minimum	Maximum
Operational risk (Operating expenses/operating income)	12.515	5.562	10.263	19.541
Credit risk (Non-performing loans ratio)	21.623	10.366	15.263	31.246
Liquidity risk (Liquidity ratio)	11.264	4.134	9.100	15.457
Market risks (Net interest margin)	12.634	21.205	14.619	23.154
Financial performance (ROA)	16.321	22.528	12.691	17.125

Source: Survey Data, 2025

The results in Table 1 indicate that the operational risk variable measured in terms of operating expenses/operating income had a mean value of 12.515, the standard deviation value of 5.562, minimum and maximum value of 10.263 and 19.541 respectively. The finding shows a significant disparity in operational risks amongst the Tier III Kenya's commercial banks studied making a suggestion that while Tier III Kenya's commercial banks maintained a lower ratio of expenses to income proportion, there are other banks that encounters significantly higher operational risks. The finding concurs with Qabajeh, Almajali, Natour, Alqsass and Maali (2023) who studied operational risk impacts on MENA banking sector profitability, using 20 Islamic banks from 12 nations over a decade (2011-2020) with fixed effect models. They analyzed ROA and ROE as indicators of financial health, with operational risk indicated by efficiency ratio. Outcomes exhibited strong inverse connection between operational risk and profitability, indicating that higher operational risk leads to poor management control, increased operating expenses, and lower profit levels.

The study found that credit risk variable measured in terms of Non-performing loans ratio had a mean value of 21.623, the standard deviation value of 10.366, minimum and maximum value of 15.263 and 31.246 respectively. The results obtained indicates the credit risks of Tier III Kenya's commercial banks had a significant range showing a possible fear about the performance of loans given to the borrowers on the financial status of these banks. The finding is consistent with Siriba (2020) who ascertained credit risk impacts on Kenyan commercial banks financial performance (2014-2018), grounded in credit risk theory which suggests credit risk inverse connection with firm performance. The results indicated that NPL ($p= 0.394$) and loan loss provisions ($p= 0.653$) negligibly negatively impacted profitability, while loans and advances significantly positively influenced bank profitability ($p= 0.001$).

The research findings revealed that the liquidity risk variable, which was evaluated using the liquidity ratio, had an average value of 11.264. Additionally, the analysis showed a standard deviation of 4.134, indicating variability in the data. The minimum and maximum values recorded were 9.100 and 15.457, respectively. Therefore, significant variations in liquidity risk are identified among these banks according to the finding presenting the need for effective tracking of

liquidity level so as to effectively manage possible financial risks. Therefore, significant variations in liquidity risk are identified among these banks according to the finding presenting the need for effective tracking of liquidity level so as to effectively manage possible financial risks. The finding concurs with Rahman and Saeed (2019) who examined liquidity risk impacts on Malaysian banks performance from 2005 to 2018, using three liquidity risk indicators. Their findings revealed that Malaysian banks maintain reasonable liquid assets and a strong capital position without excessive lending.

The research findings revealed that the liquidity risk variable, which was evaluated using the liquidity ratio, had an average value of 11.264. Additionally, the analysis showed a standard deviation of 4.134, indicating variability in the data. The minimum and maximum values recorded were 9.100 and 15.457, respectively. The finding indicates a wide range of market risk among Tier III Kenya's commercial banks suggesting a change in financial performance due to fluctuations. The finding agrees with Siddique, Khan & Khan (2022) who examined market risk management influences on banking factors on South Asian commercial banks financial performance, using secondary data from 19 banks (10 from Pakistan and 9 from India) from 2009 to 2018. Utilizing GMM to derive coefficient estimates, outcomes exhibited that higher levels NPLs, CIR and LR detrimentally impacted financial success, indicated by ROA and ROE.

The study found that financial performance variable measured in terms of return on assets had a mean value of 16.321, the standard deviation value of 22.528 minimum and maximum value of 12.691 and 17.125 respectively. The finding suggests that the Tier III Kenya's commercial banks' financial performance varied which is an indicator that the use of assets varied across these banks.

4.2 Inferential Statistics Results

Table 4.2: Panel Multiple Regression

Financial performance (FP)	Coef.	Std.Err	Z	P> z 	95 Conf.	Interval
Operational risk (OR)	-9.116	3.201	0.218	0.002	5.002	15.231
Credit risk (CR)	4.162	4.034	0.119	0.004	4.120	11.229
Liquidity risk (LR)	-8.884	2.207	0.306	0.002	-2.415	5.6637
Market risk (MR)	7.009	1.116	0.224	0.001	3.374	12.323
_cons	14.021	3.054	0.399	0.002	12.227	42.226
Wald $\lambda^2(3) = 19.001$; Prob > $\lambda^2 = 0.002$; Pseudo R-sq. = 0.799						

Source: Survey Data, 2025

4.2.1 Optimal Model

The model obtained is;

$$FP_{it} = 14.021 - 9.116OR_{it} + 4.162CR_{it} - 8.884LR_{it} + 7.009MR_{it} + \epsilon$$

Where;

FP_{it} = Financial performance

OR_{it} = Operational Risk

CR_{it} = Credit Risk

LR_{it} = Liquidity Risk

MR_{it} = Market Risk

$\hat{\epsilon}$ = Error term

The Wald test statistic, $\lambda^2(3) = 19.001$, shows that there is strong relationship between financial risks and financial performance of Tier III commercial banks in Kenya. The $\text{Prob} > \lambda^2 = 0.002$ indicate that operational risk, credit risk, liquidity risk and market risk had a statistically significant relationship with financial performance of Tier III commercial banks in Kenya. The Pseudo R-squared value was 0.799 showing that there was a variation of 79.9% of financial performance of Tier III commercial banks in Kenya due to the effect of operational risk, credit risk, liquidity risk and market risk. Therefore, the remaining 20.1% could account for other risks not studied.

4.2.2 Test of Hypotheses

The study examined the following null hypotheses at 95% level of significance.

HO₁: Operational risk does not substantially affect Tier III Kenya's commercial banks financial performance

The findings of the study indicated a leverage coefficient of -9.116, the standard error was 3.201, the Z-value was 0.218 and a p value of 0.002. The finding proves that operational risk had a significant effect on the financial performance of Tier III commercial banks in Kenya. Therefore, the null hypothesis was rejected. The finding is in line with Lyambiko (2019) who examined operational risk management impacts on Tanzania's 36 commercial banks financial performance as of December 31, 2013. The findings revealed varying independent variables' correlations, indicating that effective operational risk management positively affected their returns.

HO₂: Credit risk does not does not significantly impact Tier III Kenya's commercial banks financial performance

The study found that credit risk had a significant effect on the financial performance of Tier III commercial banks in Kenya based on the finding of a leverage coefficient of 4.162, the standard error of 4.034, the Z-value of 0.119 and a p value of 0.004. The finding proves that that null hypothesis could be rejected. The finding is consistent with Ukpong and Essien (2020) who ascertained credit risk impacts on Nigeria's largest publicly listed commercial banks fiscal outcomes, by Ex-post facto design. The findings indicated that rising exchange and interest rates led to decreased return on assets, concluding that higher interest rates negatively impact bank performance.

HO₃: Liquidity risk does not notably affect Tier III Kenya's commercial banks financial performance

The findings of the study indicated a leverage coefficient of -8.884, the standard error was 2.207, the Z-value was 0.306 and a p value of 0.002. The finding proves that liquidity risk had a significant effect on the financial performance of Tier III commercial banks in Kenya. The finding is in line with Ratemo and Ndede (2021) who investigated liquidity risk impacts on 42 Kenya's commercial banks financial performance, using causal research and bank records secondary data from CBK and revealed that bank size positively impacts financial performance, while asset quality negatively affects it. Additionally, money supply was found to moderate liquidity risks connection with overall bank performance.

HO4: Market risk does not notably affect Tier III Kenya's commercial banks financial performance

The findings of the study indicated a leverage coefficient of 7.009, the standard error was 1.116, the Z-value was 0.224 and a p value of 0.001. The finding shows that market risk had a significant effect on the financial performance of Tier III commercial banks in Kenya. Therefore, the null hypothesis was rejected. The finding agrees with Siddique, Khan & Khan (2022) who examined market risk management influences on banking factors on South Asian commercial banks financial performance, using secondary data from 19 banks (10 from Pakistan and 9 from India) from 2009 to 2018. The outcomes exhibited that higher levels NPLs, CIR and LR detrimentally impacted financial success, indicated by ROA and ROE. On the other hand, the capital adequacy ratio (CAR) and asset-liability ratio (ALR) showed a positive association with overall performance.

5.0 Conclusions and Recommendations

5.1 Conclusions

The research concludes that operational risks have the potential to result in operational failures, which may incur additional costs for mitigation and compliance, thereby placing financial strain on banks. Service disruptions can lead to the loss of business opportunities, as any transaction process missed due to system failures can result in revenue loss and diminished customer trust. Furthermore, non-compliance with regulatory requirements may lead to penalties or sanctions, which could further reduce the profitability of banks. The study concludes that the credit risk may occur in a situation whereby the bank does not effectively evaluate the borrower's creditworthiness resulting to increased number of loan defaulters which also leads to more provisioning costs for bad debts affecting negatively the bank's profitability. The higher the credit risk the more the cash reserves required limiting the capability of the bank and investment in growth opportunities. When the bank encounters a higher non-performing loans it can lose investors which may possibly affect its capability to attract additional investments or deposits.

The study concludes that the existence of liquidity risk can hinder a bank's ability to effectively manage its liquidity, leading to increased costs related to borrowed funds necessary to meet its obligations, which ultimately diminishes profit margins and impacts the bank's overall financial performance. Furthermore, liquidity risk can tarnish the bank's reputation, as it may struggle to optimally fulfill its obligations. During economic downturns, liquidity risk may compel banks to liquidate certain assets, resulting in substantial losses and adversely affecting their financial results. The study concludes that fluctuations in interest rates have an impact on the net interest income of banks, which constitutes their revenue stream. This can lead to a reduction in their ability to adapt to such changes, thereby influencing their financial performance. An increase in market rates raises the borrowing costs for customers, potentially leading to a higher number of loan defaults. Additionally, a sudden shift in currency value can lead to considerable losses, as many Tier III banks are involved in foreign currency transactions.

5.2 Recommendations

The research suggests that Tier III banks ought to improve their investment in technology by upgrading their information technology systems and implementing more advanced security protocols to reduce the risk of cyber threats. Furthermore, Tier III banks should increase the frequency of training programs for their employees to minimize human errors and improve adherence to regulations. The study recommends that the Tier III banks should adopt a diversified

loan portfolio to minimize more reliance of certain industries that could bring higher risks upon economic fluctuations. The Tier III banks should conduct a constant evaluation of borrower's financial health for proper identification of possible defaulters in advance. The Tier III banks should leverage technology to be guided by data analytics to AI-driven credit scoring models to have accurate credit assessments.

The study recommends that Tier III banks can properly manage liquidity risks through maintenance of a wider range of financing base such as mix of deposits, loans and other sources of capital. The banks can implement a stronger management of risk structures to assist in monitoring of their daily liquidity positions. The banks can do stress testing and analysis of events to come up with better contingency plans. The banks should also factor the regulatory environment provide by the Central Bank of Kenya they must follow to ensure their stability within the industry. The study recommends that the Tier III banks should adopt a comprehensive structure managing risks, carry out a frequent stress test and have a more diversified lending portfolio to solve the possible losses. The Tier III banks should leverage technology aimed at enhancing ability in evaluating risk and enhance operational efficiency.

References

- Adeusi, S. O., Akeke, N. I., Adebisi, O. S., & Oladunjoye, O. (2019). Risk management and financial performance of banks in Nigeria. *Risk Management*, 6(31), 123-129.
- Adeusi, S. O., Akeke, N. I., Adebisi, O. S., & Oladunjoye, O. (2019). Risk management and financial performance of banks in Nigeria. *Risk Management*, 6(31), 123-129.
- Adler, M., & Dumas, B. (2023). Exposure to currency risk: definition and measurement. *Financial management*, 5(1), 41-50
- Al-Eitan, G. N., & Bani-Khalid, T. O. (2019). Credit risk and financial performance of the Jordanian commercial banks: A panel data analysis. *Academy of Accounting and Financial Studies Journal*, 23(5), 1-13.
- Alie, M. S., Hermansyah, H., Maryana, T., & Oktaria, E. T. (2023). Analysis Of CR, DAR and ROA In Measuring Financial Performance. *Innovative: Journal Of Social Science Research*, 4(4), 4114-4123.
- Anvary, R. A. A. (2021). A Review of Theories, Models, and Techniques for Predicting Corporate Financial Distress and Bankruptcy. *Journal of Asset Management and Financing*, 12(1), 59-110.
- Ariffin, N. M. (2022). Liquidity risk management and financial performance in Malaysia: empirical evidence from Islamic banks. *Aceh International Journal of Social Science*, 1(2), 9 – 16
- Baraza, W. K. (2020). *Effect Of Financial Risk On Financial Performance Of Commercial Banks Listed On Nairobi Securities Exchange In Kenya* (Doctoral dissertation, Kca University)
- Barker, R. (2020). Reporting financial performance. *Accounting horizons*, 18(2), 157-172
- Bastomi, M., Salim, U., & Aisjah, S. (2021). The role of corporate governance and risk management on banking financial performance in Indonesia. *Jurnal Keuangan dan Perbankan*, 21(4), 670-680
- Batterton, K. A., & Hale, K. N. (2017). The Likert scale what it is and how to use it. *Phalanx*, 50(2), 32-39
- Bhattarai, Y. R. (2021). Effect of credit risk on the performance of Nepalese commercial banks. *NRB Economic Review*, 28(1), 41-64.

- Brusov, P., Filatova, T., Orekhova, N., & Eskindarov, M. (2022). Capital Structure: Modigliani–Miller Theory. *Modern corporate finance, investments, taxation and ratings*, 5(1), 9 – 27
- Chandrashekar, M., & Walker, B. A. (2022). Meta-analysis with heteroscedastic effects. *Journal of Marketing Research*, 30(2), 246-255.
- Chiliya, W., Rungani, E. C., Chiliya, N., & Chikandiwa, C. T. (2022). The impact of risk on the financial performance of small medium enterprises in the construction industry in Eastern Cape, South Africa. *Risk Governance and Control: Financial Markets and Institutions*, 5(3), 224-234.
- Cliff, A. D., & Ord, K. (2020). Spatial autocorrelation: a review of existing and new measures with applications. *Economic Geography*, 46(sup1), 269-292.
- Collison, D. J., Cobb, G., Power, D. M., & Stevenson, L. A. (2023). The financial performance of the FTSE4Good indices. *Corporate Social Responsibility and Environmental Management*, 15(1), 14-28.
- Curti, F., Gerlach, J., & Kazinnik, S. (2023). Cyber risk definition and classification for financial risk management. *Journal of Operational Risk*, 7(1), 9 – 16
- De-Oliveira, J. A. S., Basso, L. F. C., Kimura, H., & Sobreiro, V. A. (2022). Innovation and financial performance of companies doing business in Brazil. *International Journal of Innovation Studies*, 2(4), 153-164
- Dionne, G. (2021). Risk management: History, definition, and critique. *Risk management and insurance review*, 16(2), 147-166
- Effiong, S. A., & Ejabu, F. E. (2020). Liquidity risk management and financial performance: are consumer goods companies involved. *International Journal of Recent Technology and Engineering*, 9(1), 580-589.
- Ekinci, A. (2019). The effect of credit and market risk on bank performance: Evidence from Turkey. *International Journal of Economics and Financial Issues*, 6(2), 427-434.
- Elamer, A. A., & Benyazid, I. (2018). The impact of risk committee on financial performance of UK financial institutions. *International Journal of Accounting and Finance*, 8(2), 161-180.
- Elamer, A. A., & Benyazid, I. (2018). The impact of risk committee on financial performance of UK financial institutions. *International Journal of Accounting and Finance*, 8(2), 161-180.
- Elamer, A. A., & Benyazid, I. (2023). The impact of risk committee on financial performance of UK financial institutions. *International Journal of Accounting and Finance*, 8(2), 161-180.
- Ezelda, S. (2019). *The impact of credit and liquidity risks on the financial performance of South African Banks Listed on the JSE: A Pre-and Post-COVID-19 Analysis* (University of South Africa)
- 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. (2018). How measuring financial performance. *International Journal of Civil Engineering and Technology (IJCIET)*, 9(6), 553-557.
- Gabriel, S. C., & Baker, C. B. (2022). Concepts of business and financial risk. *American journal of agricultural economics*, 62(3), 560-564

- Gathigia, M., J., Munyua, W. K., & Muturi, W. M. (2020). Effect of Credit Risk on Financial Performance of Commercial Banks Kenya. *IOSR Journal of Economics and Finance (IOSR-JEF)*, 4(1), 72 – 83
- Glickman, M. (2019). Modigliani-Miller on capital structure: A post-Keynesian critique. *UEL Department of Economics Working Paper*, 7(1), 9 – 16
- Goodhue, D. L., Lewis, W., & Thompson, R. (2022). Does PLS have advantages for small sample size or non-normal data?. *MIS quarterly*, 1(2), 981-1001
- Heckmann, I., Comes, T., & Nickel, S. (2023). A critical review on supply chain risk–Definition, measure and modeling. *Omega*, 52, 119-132
- Ishmail, D. M., Memba, F., Muriithi, J. (2023). Operational risk and financial performance of microfinance banks in Kenya. *International Academic Journal of Economics and Finance*, 3(8), 265-278.
- Izah, S. C., Sylva, L., & Hait, M. (2023). Cronbach's Alpha: A Cornerstone in Ensuring Reliability and Validity in Environmental Health Assessment. *ES Energy & Environment*, 23, 1057
- Jawale, K. V. (2019). Methods of sampling design in the legal research: Advantages and disadvantages. *Online International Interdisciplinary Research Journal*, 2(6), 183-190.
- Juma, A. M., & Atheru, G. (2018). Financial risks analysis and performance of commercial banks in Kenya. *Journal of Finance and Accounting*, 2(2), 76-95.
- Kalina, J. (2018). Testing heteroscedasticity in robust regression. *Research Journal of Economics, Business and ICT*, 4.
- Kuritzkes, A. (2022). Operational risk capital: a problem of definition. *The Journal of Risk Finance*, 4(1), 47-56.
- Lassala, C., Apetrei, A., & Sapena, J. (2017). Sustainability matter and financial performance of companies. *Sustainability*, 9(9), 1498 - 1502
- Lelgo, K. J., & Obwogi, J. (2022). Effect of financial risk on financial performance of micro finance institutions in Kenya. *International Academic Journal of Economics and Finance*, 3(2), 357-369
- Leon, R. J., Lapkin, S., Fields, L., & Moroney, T. (2022). Developing a self-administered questionnaire: Methods and considerations. *Nurse researcher*, 30(3), 8 – 14
- Liang, C. J., Wang, W. H., & Dawes Farquhar, J. (2021). The influence of customer perceptions on financial performance in financial services. *International Journal of Bank Marketing*, 27(2), 129-149
- Lyambiko, M. R. (2019). *The effect of operational Risk Management Practices on the Financial Performance in Commercial banks in Tanzania* (Doctoral dissertation, University of Nairobi).
- Maniagi, G. M. (2018). *Influence of financial risk on financial performance of commercial banks in Kenya* (Doctoral dissertation, JKUAT).
- Mercylynne, M. W., & Omagwa, J. (2017). Credit risk management and financial performance of selected commercial banks in Kenya. *Journal of Business and Management (IOSR-JBM)*, 19(11), 92-98.
- Morrow, B. (2020). An overview of cohort study designs and their advantages and disadvantages. *International Journal of Therapy and Rehabilitation*, 17(10), 518-523.
- Mrindoko, A. E., Macha, S., & Gwahula, R. (2020). Effect of operational risk on the financial performance of banks in Tanzania. *International journal of business management and economic review*, 3(6), 115-151.

- Munangi, E., & Sibindi, A. B. (2020). An empirical analysis of the impact of credit risk on the financial performance of South African banks. *Academy of Accounting and Financial Studies Journal*, 24(3), 1-15
- Mwanzia, F. M. (2021). *The effect of risk management on financial performance of commercial banks in Kenya* (Doctoral dissertation, University of Nairobi)
- Obite, C. P., & Bartholomew, D. C. (2020). Multicollinearity effect in regression analysis: A feed forward artificial neural network approach. *Asian J. Probab. Stat*, 6(1), 22-33.
- Ord, J. K., & Getis, A. (2021). Testing for local spatial autocorrelation in the presence of global autocorrelation. *Journal of regional science*, 41(3), 411-432
- Onywera, A. S. (2022). *Effect of Financial Risk on Financial Performance of Commercial Banks in Kenya* (Doctoral dissertation, Doctoral Dissertation, Jomo Kenyatta University of Agriculture and Technology).
- Otieno, S., Nyagol, M., & Onditi, A. (2020). Relationship between Credit risk management and financial performance: empirical evidence from microfinance banks in Kenya. *Research Journal of Finance and Accounting*, 7(6), 115-138.
- Otieno, S., Nyagol, M., & Onditi, A. (2021). Relationship between Credit risk management and financial performance: empirical evidence from microfinance banks in Kenya. *Research Journal of Finance and Accounting*, 7(6), 115-138.
- Poudel, R. P. S. (2022). The impact of credit risk management on financial performance of commercial banks in Nepal. *International Journal of arts and commerce*, 1(5), 9-15.
- Purdy, B. M., Langemeier, M. R., & Featherstone, A. M. (2021). Financial performance, risk, and specialization. *Journal of Agricultural and Applied Economics*, 29(1), 149-161
- Qabajeh, M., Almajali, D., Natour, A., Alqsass, M., & Maali, H. (2023). The impact of operational risk on profitability: Evidence from banking sector in the MENA region. *Uncertain Supply Chain Management*, 11(4), 1459-1466.
- Rahman, A., & Saeed, M. H. (2019). An empirical analysis of liquidity risk and performance in Malaysia Banks. *Australian Journal of Basic and Applied Sciences*, 9(28), 80-84.
- Ratemo, S. K., & Ndede, F. S. (2021). Liquidity Risk and Financial Performance of Commercial Banks in Kenya. *Journal of Finance and Accounting*, 5(1), 115-128.
- Raza, H., Gillani, S. M. A. H., Ramakrishnan, S., Gillani, S. M. A. H., & Imran, M. (2020). Nonsystematic review of financial sustainability and financial distress. *International Journal of Psychosocial Rehabilitation*, 24(06), 885-900.
- Santika, E., Fakhruhozy, M. H., Nur, W. M., & Lestari, H. S. (2022). Effect of operational risk on financial performance in banking industry IDX. *Jurnal Ekonomi*, 27(1), 123-137.
- Siriba, R. M. (2020). Credit risk and financial performance of commercial banks in Kenya. *International journal of scientific and research publications*, 10(4), 448-454.
- Schulmerich, M., Leporcher, Y. M., Eu, C. H., Schulmerich, M., Leporcher, Y. M., & Eu, C. H. (2015). Modern portfolio theory and its problems. *Applied asset and risk management: A guide to modern portfolio management and behavior-driven markets*, 101-173.
- Siddique, A., Khan, M. A., & Khan, Z. (2022). The effect of credit risk management and bank-specific factors on the financial performance of the South Asian commercial banks. *Asian Journal of Accounting Research*, 7(2), 182-194.
- Silva, J. R., Silva, A. F. D., & Chan, B. L. (2019). Enterprise risk management and firm value: Evidence from Brazil. *Emerging Markets Finance and Trade*, 55(3), 687-703.
- Smith, M., & Taffler, R. (2022). The chairman's statement and corporate financial performance. *Accounting & Finance*, 32(2), 75-90

- Tetnowski, J. A., & Damico, J. S. (2021). A demonstration of the advantages of qualitative methodologies in stuttering research. *Journal of Fluency Disorders*, 26(1), 17- 42
- Tojib, D. R., & Sugianto, L. F. (2019). Content validity of instruments in IS research. *Journal of Information Technology Theory and Application (JITTA)*, 8(3), 5 -13
- Uddin, M. K., Hossain, H. M., & Rahman, M. (2023). Effect of credit risk management on the financial performance of banking sector of Bangladesh: A Study On Generation-Based Selected Listed Commercial Banks. *European Journal of Economic and Financial Research*, 7(3), 8 – 13
- Ukpong, E. G., & Essien, I. (2020). Credit Risk and Financial Performance of Quoted Commercial Banks in Nigeria. *AKSU Journal of Administration and Corporate Governance*, 2(4), 94-111
- Waddock, S. A., & Graves, S. B. (2022). The corporate social performance–financial performance link. *Strategic management journal*, 18(4), 303-319
- Yu, J., & Zhang, J. (2023). A comprehensive analysis of the modern portfolio theory. *BCP Business & Management*, 38(2), 2111-2114.
- Zhang, H. (2024). Limitations and Critique of Modern Portfolio Theory: A Comprehensive Literature Review. *Advances in Economics, Management and Political Sciences*, 60, 24-29.

This is an open-access article published and distributed under the terms and conditions of



the Creative Commons Attribution 4.0 International License of United States unless otherwise stated. Access, citation and distribution of this article is allowed with full recognition of the authors and the source. Copyright, content ownership and liability for content herein remain with the authors.

This is an internationally double-blind peer reviewed article.

We are members of Crossref and our articles are issued with digital identifiers and indexed with over 1000 databases globally.



© (2025) Mohamud Dubow Korane, Salome Musau