FINANCIAL RISKS AND PERFORMANCE OF DEPOSIT-TAKING MICROFINANCE BANKS IN KENYA

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ABSTRACT

This study examines the effect of financial risks on the performance of Deposit-Taking Microfinance Banks (DTMFBs) in Kenya from 2013 to 2022. The research focuses on four key financial risks credit risk, market risk, liquidity risk, and operational risk and their impact on financial performance, measured by Return on Investment (ROI). Using a descriptive research design and panel data analysis, the study analyzes secondary data from audited financial statements of all 13 licensed DTMFBs in Kenya. The findings reveal that all four financial risks have a statistically significant positive effect on financial performance, contrary to conventional expectations. The study concludes that proactive risk management strategies are essential for enhancing the financial stability and profitability of DTMFBs. Recommendations include adopting dynamic risk management frameworks, investing in modern risk assessment tools, and fostering collaboration with regulatory bodies. Future research should explore the long-term sustainability of these risk management practices and the impact of macroeconomic factors.

Keywords: Operational Risk, Liquidity Risk, Market Risk, Credit Risk and Financial Performance.

INTRODUCTION

Background of the Study

Microfinance banks play an essential role in the development of any economy by facilitating businesses, trade, and ensuring judicious allocation of idle funds. These institutions are also pivotal in the implementation of government monetary policies in providing access to financial services to micro or small enterprises and low-income households (Nguyen, et al., 2017).

However, the inability of DTMFBs to meet its intermediation obligations introduces some vulnerability into the financial system. In fact, some studies have shown that inadequate management of these vulnerabilities may fuel a sovereign debt crisis (Jongh et al., 2013). Though risk taking is an integral part of banking sector, albeit, bank management should balance its risk and return to make adequate profit and remain a going concern, else, the bank, financial system and the economy at large may be adversely impacted; as was the case of the

Asian Financial crisis of 1997 - 1998. DTMFBs are susceptible to two categories of risks: financial and non-financial risks. Financial risks are a result of the business operations/transactions of the bank and can be further categorized into credit risk, and market and liquidity risk. Non-financial risk on the other hand impact negatively on performance as a result of management failure, competitions, external factors etc. Non-financial risks mainly include operational risk, strategic risk and compliance risks (Patel, 2015).

Statement of the Problem

DTMFBs in the country cuts a significant niche in offering financial services to close to 3% of the population (KNBS,2021). Despite their contribution to financial inclusion, the sector faces escalating exposure to financial risks, which threatens their financial stability and ability to deliver essential services (Mbinga, 2022). Over the past decade, the sector has experienced a consistent decline in total assets, net advances, and customer deposits, as reported by the Central Bank of Kenya (CBK, 2022). Further, the DTMFBs have registered growth in NPLs by a massive 193.2% in the last eight years from Kshs. 4.2 billion in the year 2015 to Kshs.12.5 billion in the year 2022. (Financial Sector Regulators, 2023).

This downward trajectory raises concerns about the financial performance of DTMFBs, particularly between 2013 and 2022, as it directly impacts their capacity to sustain operations and contribute to Kenya's GDP. The sector's struggles with financial performance highlight the urgent need to address underlying risk factors to ensure their continued role in supporting economic growth and financial inclusion.

Despite the reforms they have continued to report poor financial performance. According to CBK (2022) bank supervision report the microfinance sector registered a 4.8 percent decline in total assets. Net advances decreased by 1.9percent as lending remained the single largest activity undertaken by microfinance banks with the net loan portfolio accounting for 56 percent of the microfinance bank's total assets. Customer deposits decreased by 7.8 percent from Ksh.50.4 billion in 2021 to Ksh.46.5 billion in 2022. The decline in deposits was due to transfer of funds to alternative attractive investments due to the overall increase in interest rates

A notable research studies in Kenya including Njiru (2020), Odhiambo (2019), Otieno (2016, Juma (2018) have attempted to address the issues of financial risks in the financial sector including the banks but little has been done to comprehensively assess the financial risks in the MFBs sector. Further, the ongoing shows that there is little study that has been done in Kenya to establish how the broader financial risks affects the financial performance of MFIs in Kenya including Lelgo et al. (2018), Karugu (2021) and Luyayi (2022).

Again, studies have produced varied and inconclusive results and have been studied in piecemeal manner and individually. For instance, Mbinga (2022), and Achieng (2020), Njiru (2020) researched financial risks in banks, while Muchai et al, (2021) who studied on liquidity risks, Wambua (2017), studied on the non-financial risks, RAO et al., (2021) studied on credit risk. By tackling the risks individually these studies fail to acknowledge the effect of financial risk on the financial performance. Thus, the need to take a comprehensive view. Therefore, the

study seeks to establish the effect of financial risk and performance of Deposit Taking Microfinance Banks in Kenya.

Research Objectives

1. To ascertain the effect of credit risk on financial performance of deposit taking Microfinance Banks in Kenya.
2. To evaluate the effect of market risk, on financial performance of deposit taking Microfinance Banks in Kenya.
3. To establish the effect of liquidity risk on financial performance of deposit taking Microfinance Banks in Kenya.
4. To assess the effect of operational risk on financial performance of deposit taking Microfinance Banks in Kenya.

Research Questions

1. What effect does credit risk have on financial performance of deposit taking Microfinance Banks in Kenya?
2. How does market risk effect financial performance of deposit taking Microfinance Banks in Kenya?
3. Does liquidity risk have a significant effect on financial performance of deposit taking Microfinance Banks in Kenya?
4. How much influence does operational risk have a significant effect on financial performance of deposit taking Microfinance Banks in Kenya?

LITERATURE REVIEW

Theoretical Framework

Modern Portfolio Theory (MPT) (Markowitz, 1952)

This theory emphasizes the importance of diversification in constructing an optimal portfolio that balances risk and return. It suggests that investors can minimize risk by holding a mix of assets with low correlations. MPT is particularly useful in managing market and liquidity risks through strategic asset allocation.

Extreme Value Theory (EVT)

EVT analyzes the probability and impact of rare, extreme events, such as financial crises, stock market crashes, or natural disasters. It is widely applied in risk management to model tail risks and safeguard against catastrophic losses. This theory is particularly relevant in assessing operational and market risks in volatile environments.

Financial Distress Theory

This theory explains how firms face financial distress due to poor liquidity management, excessive debt, or declining profitability. It highlights the role of credit risk and financial vulnerabilities that can ultimately lead to insolvency or bankruptcy. Effective risk management strategies can help mitigate financial distress and improve long-term sustainability.

Information Asymmetry Theory (Akerlof, 1970)

This theory describes situations where one party in a transaction has more or better information than the other, leading to inefficiencies. In credit risk management, it manifests through adverse selection (lenders misjudging borrower risk) and moral hazard (borrowers taking undue risks). Addressing information asymmetry through transparency and screening mechanisms enhances financial stability.

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Conceptual Framework

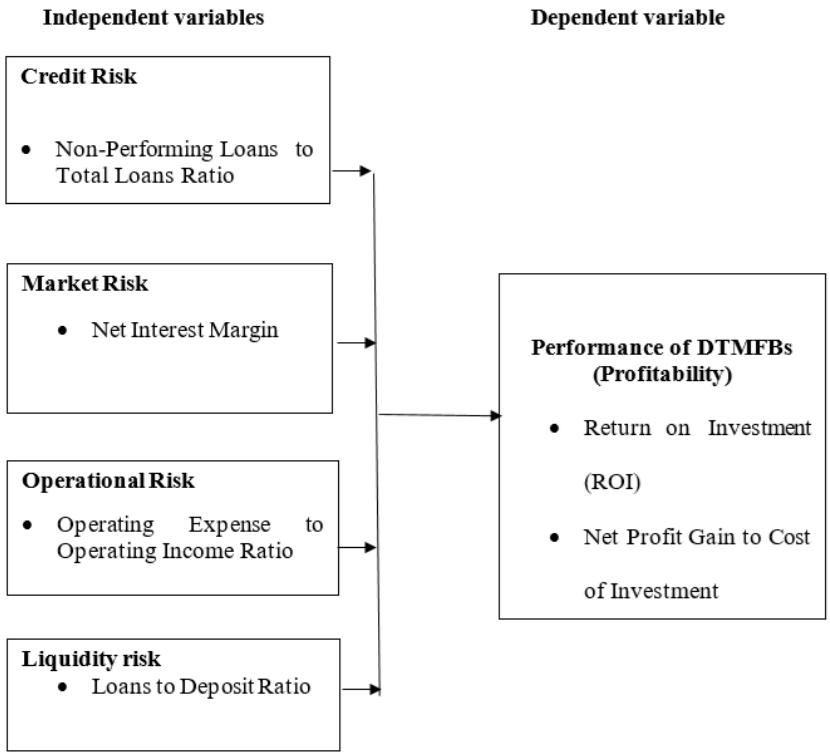

Figure 1: Conceptual Framework

Credit Risk

Credit risk is a key indicator of a financial firm's asset quality and stability, assessing the risks associated with non-performing loans (NPLs) and debtor costs (Athanasoglou et al., 2009). The quality of a bank's assets determines its financial health, as poor-quality assets increase the risk of financial instability (Binga, 2022). A well-functioning bank minimizes credit risk by maintaining low NPL ratios and ensuring appropriate interest margins to cover risks (Dang, 2011). The loan portfolio forms the primary income source for banks, making credit risk management crucial for profitability (Athanasoglou et al., 2005). Asset quality generally improves with bank size and age, reducing exposure to credit losses over time (Athanasoglou et al., 2005). Therefore, effective credit risk management enhances financial performance by minimizing losses and ensuring stable asset value (Dang, 2011).

Liquidity Risk

Liquidity risk arises when a bank cannot meet its financial obligations on time, often due to asset-liability mismatches (Adam & Buckle, 2013). It is crucial to manage liquidity risk to maintain solvency and operational efficiency (Almajali et al., 2012). A high Loan-to-Deposit Ratio (LDR) indicates aggressive lending but may lead to liquidity shortages during financial stress (Drehmann & Nikolaou, 2009). Conversely, an overly cautious approach with low LDR reduces risk but limits income from lending (Jenkinson, 2008). Kenyan DTMs must balance liquidity and lending activity to optimize financial performance while avoiding crises (Mwangi & Kamau, 2023; Omondi, 2023). The Central Bank of Kenya closely monitors LDRs to ensure financial stability within the sector (Mutua, 2022; Kilonzo & Wambui, 2023).

Operational Risk

Operational risk affects a firm's efficiency by increasing operational costs relative to income, leading to reduced profitability (Ongore & Kusa, 2013). A high operating expense-to-income ratio signals declining efficiency, making risk management crucial (Athanasoglou et al., 2009). Poorly managed operational risks lower gross profit margins, impairing financial sustainability (Ongore & Kusa, 2013). Firms must implement effective risk control strategies to mitigate operational inefficiencies and sustain profitability (Athanasoglou et al., 2009). Failure to manage these risks may result in financial distress or bankruptcy, reducing stakeholder confidence (Ongore & Kusa, 2013). Therefore, optimizing operational efficiency through cost management is essential for long-term success (Athanasoglou et al., 2009).

Market Risk

Market risk arises from fluctuations in financial market prices, impacting collateral values and financial stability (Worzala, 1995). Interest rate volatility affects microfinance institutions (MFIs), as higher deposit costs can reduce Net Interest Margin (NIM) and profitability (Bogan et al., 2022). Inflation further compresses NIM by increasing funding costs while reducing real interest income (Kimani, 2023). Economic downturns lead to lower credit demand, worsening revenue losses for DTMs (Koech & Njeru, 2023). Regulatory measures like interest rate caps limit risk-based loan pricing, increasing financial risk exposure (Ndung'u, 2022). Effective market risk management is crucial for financial stability, especially during economic crises (Mudanya & Muturi, 2018).

Financial Performance

Financial performance, often measured using Return on Investment (ROI), reflects a firm's ability to generate profits relative to investment costs (Hassanzadeh, 2019). ROI is influenced by operational efficiency, credit risk management, and loan portfolio quality (Juma, 2018). Studies show a strong positive relationship between operational efficiency and microfinance profitability (Nyanzu & Peprah, 2020). Loan default rates significantly impact ROI, making credit risk management essential (Muriithi et al., 2020). Technology adoption enhances efficiency, reducing costs and expanding financial services (Alaeddin et al., 2022). Successful firms leverage innovation and diversification to optimize financial performance while balancing profitability with risk (Gutierrez-Goiria et al., 2022).

Empirical Review

The empirical literature review examines how credit risk, market risk, liquidity risk, and operational risk impact the financial performance of deposit-taking microfinance banks (DTMFBs), revealing both consistencies and contradictions in existing research. Market risk emerges as a critical concern for Kenyan DTMFBs, with studies showing its multifaceted nature (exchange rate, inflation, and interest rate risks) and the need for tools like Value at Risk (VaR) to mitigate potential losses (Namasake, 2016; Mohd et al., 2022). Credit risk studies highlight the detrimental effects of non-performing loans (NPLs) on lending capacity and financial stability, though some findings suggest effective credit management can enhance profitability (Nyasaka, 2017; Gemechu, 2016). Liquidity risk is shown to significantly influence performance, with poor management leading to financial distress, while operational risk studies emphasize its negative impact on profitability due to inefficiencies and process failures (Wangalwa et al., 2018).

The review identifies gaps in the literature, such as fragmented risk assessments and inconclusive findings, particularly regarding the interplay between different risks and their collective impact on DTMFBs' performance. While some studies report negative effects (e.g., operational risk reducing ROA), others suggest positive relationships (e.g., liquidity improving profitability in certain contexts) (Tesfai, 2015; Bragg, 2020). The competitive microfinance landscape in Kenya further complicates performance dynamics, with factors like financial innovations and interest income playing pivotal roles (Ngumo et al., 2017; Muiruri & Ngari, 2014). This synthesis underscores the need for holistic risk management frameworks and contextualized strategies to address the unique challenges faced by DTMFBs.

RESEARCH METHODOLOGY

A descriptive research design was employed, utilizing panel data from 2013 to 2022 for all 13 licensed Deposit-Taking Microfinance Banks (DTMFBs) in Kenya. Secondary data were extracted from audited financial statements and Central Bank of Kenya (CBK) reports using a structured data collection sheet. The study applied panel regression analysis to examine the relationship between financial performance and risk factors. The model used was:

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

Where Y_{it} represents financial performance measured by Return on Investment (ROI), X_{1it} denotes credit risk measured by the non-performing loan (NPL) ratio, X_{2it} represents market risk measured by the net interest margin, X_{3it} captures liquidity risk measured by the loan-to-deposit ratio, and X_{4it} reflects operational risk measured by the operating expense ratio. To ensure the reliability and validity of the model, diagnostic tests for normality, heteroscedasticity, autocorrelation, and stationarity were conducted, confirming the robustness of the analysis.

Findings and Discussion

The descriptive statistics reveal substantial variations in financial risk factors among Deposit-Taking Microfinance Banks (DTMFBs) in Kenya. Credit risk, measured by the non-performing loan (NPL) ratio, exhibited a mean of 870.05, indicating significant variability across institutions. Market risk, represented by the net interest margin, had an average value of

2,413.85, with notable fluctuations suggesting dynamic interest rate adjustments. Liquidity risk, assessed through the loan-to-deposit ratio, displayed extreme values, with a maximum of 35,627.1, highlighting potential liquidity management challenges. Operational risk, measured by the operating expense ratio, averaged 10,164.63, reflecting inefficiencies in cost management within the sector.

The regression analysis results demonstrated that all financial risk factors had a statistically significant positive effect on financial performance. Credit risk had a coefficient of $\beta=0.242853$ with a p-value of 0.000, indicating a strong and highly significant impact. Market risk showed a coefficient of $\beta=0.169345$ with a p-value of 0.0593, suggesting a moderate but relevant influence. Liquidity risk had a coefficient of $\beta=0.46653$ with a p-value of 0.0049, while operational risk recorded a coefficient of $\beta=0.36258$ with a p-value of 0.00325, both highlighting statistically significant relationships.

The positive coefficients across all risk factors suggest that DTMFBs may be compensating for financial risks through higher interest margins or operational adjustments, ensuring profitability despite exposure to risk. However, these findings challenge the traditional risk-return trade-off, where higher risk typically corresponds to lower stability or performance. The results, therefore, warrant further investigation to understand the mechanisms through which DTMFBs manage financial risks and sustain profitability. Possible explanations may include strategic risk mitigation measures, diversification of revenue streams, or the ability to price risk effectively within the microfinance sector.

Conclusions

The study reveals that financial risks credit, market, liquidity, and operational positively influence the performance of DTMFBs in Kenya. This finding suggests that rather than hindering performance, these risks may create opportunities for financial institutions to optimize their revenue models. For instance, higher credit risk, indicated by a high NPL ratio, could signal that DTMFBs are extending credit to riskier borrowers, possibly charging higher interest rates to compensate for potential defaults. Similarly, market risk, measured by net interest margin fluctuations, reflects the ability of these institutions to adjust lending rates in response to market dynamics, ensuring sustained earnings. Liquidity risk, represented by the loan-to-deposit ratio, and operational risk, measured by the operating expense ratio, also play critical roles in shaping financial performance, as institutions that efficiently manage their liquidity and operational costs can maintain profitability despite inherent financial uncertainties.

These findings highlight the importance of dynamic risk management strategies in sustaining profitability and stability within the microfinance sector. Given the counterintuitive nature of the results where increased risk corresponds with improved financial performance it is crucial for DTMFBs to implement adaptive strategies that balance risk exposure with financial sustainability. Effective risk pricing, portfolio diversification, and leveraging financial technologies can enhance resilience while optimizing returns. Additionally, regulatory bodies such as the Central Bank of Kenya (CBK) may need to refine risk management frameworks to

ensure that while DTMFBs capitalize on financial risks for growth, they do not compromise long-term stability. Further research could explore how specific risk mitigation measures contribute to this positive risk-performance relationship and whether similar trends exist in other financial markets.

Recommendations

To enhance risk management, DTMFBs should adopt advanced tools such as Value at Risk (VaR) models and stress testing to better anticipate and mitigate financial risks. These tools provide a quantitative approach to assessing potential losses and enable institutions to develop proactive strategies for handling adverse market conditions. By integrating predictive analytics, scenario analysis, and machine learning-based risk assessment models, DTMFBs can improve their ability to detect early warning signs of credit, market, liquidity, and operational risks. Moreover, strengthening internal risk governance structures and setting up dedicated risk management committees can ensure continuous monitoring and swift response to emerging threats.

Collaboration with regulatory bodies such as the Central Bank of Kenya (CBK) is also crucial in aligning institutional policies with the evolving risk landscape. Regular engagement with policymakers can facilitate the development of regulatory frameworks that balance financial stability with institutional growth. Additionally, capacity building through targeted training programs can equip staff with the necessary skills to identify, assess, and manage financial risks effectively. Investing in technology-driven solutions, such as fintech platforms, can further enhance real-time risk monitoring and decision-making. Automation of risk assessment processes, digital credit scoring models, and blockchain-based transaction tracking can reduce fraud risks while improving operational efficiency. By implementing these strategies, DTMFBs can create a robust risk management culture that supports sustainable financial performance.

Future Research

Future research should explore the long-term effects of risk management practices on the financial sustainability and growth of DTMFBs. While this study highlights the immediate impact of financial risks on performance, a longitudinal analysis would provide deeper insights into how risk management strategies evolve over time and their effectiveness in different economic cycles. Researchers could examine whether institutions that proactively manage credit, market, liquidity, and operational risks achieve higher resilience during financial downturns and periods of economic uncertainty. Additionally, comparative studies across different financial institutions, such as commercial banks and microfinance institutions, could offer a broader perspective on best practices in risk management within Kenya's financial sector.

Another critical area for future research is the role of macroeconomic factors, such as inflation, interest rates, and political instability, in shaping risk exposure and mitigation strategies. Given the dynamic nature of Kenya's economic and political landscape, understanding how these external factors influence the performance of DTMFBs is essential for policymakers and

industry players. Furthermore, the impact of digital transformation on risk mitigation warrants further investigation. The adoption of fintech solutions, artificial intelligence, and blockchain technology has revolutionized financial services, potentially altering risk profiles and management approaches. Future studies could assess the effectiveness of digital tools in improving risk detection, enhancing regulatory compliance, and fostering financial inclusion while minimizing operational inefficiencies and fraud risks.

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