MODERATING EFFECT OF CORPORATE GOVERNANCE ON THE RELATIONSHIP BETWEEN FINANCIAL RISK EXPOSURE AND PROFITABILITY OF MICROFINANCE BANKS IN KENYA

By

GLADYS MUSENYA KAMWILWA

MASTER OF SCIENCE IN COMMERCE (FINANCE AND INVESTMENT)

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OCTOBER, 2025

DECLARATION

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

Student Name: Gladys Musenya Kamwilwa **Reg No:** 13/02626

Signature……  …… Date….11th August 2025……

I do here by confirm that I have examined the Masters dissertation of

Gladys Musenya Kamwilwa

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

Signature……  ……..… Date….29th October, 2025……

Dr. Fanice Waswa

Dissertation Supervisor

ABSTRACT

This study sought to investigate the moderating role of corporate governance on the linkage between exposure of banks to financial risks and the profitability of Kenyan microfinance banks. In particular, it aimed to evaluate the influence of credit risk exposure, liquidity risk exposure, and operational risk exposure on their profitability with corporate governance as a moderator variable in this relationship. The study was guided by the modern portfolio theory, theory of financial intermediation, liquidity preference theory, and agency theory. Utilizing an explanatory research design, the study targeted 14 registered microfinance banks with the Central Bank of Kenya as of December 2023, utilizing a census sampling method. Secondary data for the context of 2019-2023 were sourced from Central Bank publications, as well as financial statements of respective individual microfinance banks. The analysis of the findings employed panel data procedures with the help of Stata 18 as well as SPSS version 26, utilizing means, standard deviations, as well as multiple regression analysis. The study established that credit risk exposure ($\beta=0.105$, $p<0.05$), liquidity risk exposure ($\beta=0.121$, $p<0.05$), as well as operational risk exposure ($\beta=0.019$, $p<0.05$) had a significant positive influence on profitability. Moreover, it established that though corporate governance had a negative coefficient ($\beta=-0.221$, $p<0.05$) indicating its significance, after the inclusion of the interaction term with corporate governance as a moderating factor under the third scenario, both corporate governance as well as the interaction remained insignificant ($p<0.05$). The study concluded that exposure of banks to risks had a remarkable impact on their profitability, with partial modulation by corporate governance. The study recommends that credit risk managers of microfinance banks must formulate strong credit risk handling strategies with the intent of reducing non-performing loans, hence improving their profitability. Also, marketing managers have to invest in advertising and organizing activities for promoting mobilization of deposits, enhancing liquidity. Lastly, managers have to streamline operating costs while maximizing revenues for enhancing profitability, and owners of microfinance institutions have to have strong corporate governance mechanisms, such as enhancing board independence.

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DEDICATION

I dedicate this research project to my family and friends for their support.

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ABBREVIATIONS

CBK	Central Bank of Kenya
MFI	Microfinance Institution
MFB	Microfinance Bank
SPSS	Statistical Package for Social Sciences

OPERATIONAL DEFINITION OF TERMS

Credit risk exposure: It is a non performing loan ratio measured by non-performing loans against total loans of the microfinance banks in Kenya

Financial risk exposure: Microfinance banks in Kenya are exposed to credit risk, liquidity risk and operation risk

Liquidity risk exposure: It is loan deposit ratio represented by total loans against total deposits of the microfinance banks in Kenya

Microfinance Banks: These are financial institutions that are specialized in provision of a range of financial services

Operational risk exposure: This is an operating expense ratio that is measured by operating income against operating expenses of the microfinance banks in Kenya

Profitability: It is the proportion of income that is generated by utilizing assets measured by net income against total equity of the microfinance banks in Kenya

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Financial risk in financial institutions is defined as the possibility of losses on an investment. In the financial market risks may be caused by internal or external factors as a result of various macroeconomic forces (Oudat, Ali, Abdelhay, Hazaimeh, Altalay, Marie & El-Bannany, 2024). Changes in market rates, variations in interest rates, defaults in payments and low cost to income ratio are some of the causes of financial risks (Akinadewo, 2020). Risks can however be mitigated by implementing proactive measures to identify and plan on how to manage the risks through a well-structured corporate governance mechanism in an institution (Sapiri, 2025). Microfinance banks are exposed to a number of financial risks such as credit risk, liquidity risk, market risk and operation risk. Credit risk is defined as the possibility that MFB borrowers will default repayments (Fadeyi, Omojeso & Ityokumbul, 2021). Liquidity risk is the inability of the MFB to meet short term obligations as they fall due. Operational risk on the other hand is the risk of loss from inadequate/ failed internal processes, systems & external events. Market risk refers to the possibility of losses due to fluctuation in market prices/interest rates (Jafri, 2023).

Financial institutions like microfinance banks are exposed to a range of financial risks in the course of their operations. To effectively manage these risks, these institutions require strong risk committee which is an integral part of corporate governance (Musallam, 2025). Weak corporate governance mechanisms can increase exposure of these institutions to financial risks which may threaten their long-term stability and financial intermediation role in economies (Horvey & Odei-Mensah, 2025). On the other hand, strong corporate governance mechanisms provide assurance to managers on effective management of financial risks which in turn can

influence profitability. Thus, it is difficult to consider the relationship between financial risk exposure and profitability without a focus on corporate governance which was used as a moderator variable in the present study.

Empirical discourse on the relationship between financial risk exposure, corporate governance and profitability has gathered momentum across the world. For instance, evidence from Pakistan by Shair, Sun, Shaorong, Atta and Hussain (2019) indicate that while liquidity risk exposure has positive nexus with profitability, credit and insolvency risk were found to have negative relationship. In North America, Wood and McConney (2018) argued that while exposure to credit risk was found to have an inverse nexus with profitability, liquidity risk exposure was found to have positive effect. In Indonesia, Muthia, Ghasarma, Andaiyani and Setiawan (2020) noted that operational risk exposure measured through cost income ratio and cost to total assets was positively linked with profitability of the Islamic financial institutions. Toufaili (2021) pointed out existence of significant nexus between liquidity and credit risk exposure in regard to profitability.

In Nigeria, Ikponmwosa (2020) shared that while loans to deposit (LTD) ratio had insignificant implication on profitability, loan loss provision to total loans ratio was positive and significant. According to Achimugu, Abdullahidr and Adediran (2023), liquidity risk and market risk exposure exert significant effect on returns generated from assets (ROA) as a proxy of profitability and this nexus is moderated by firm size. Other evidence in Nigeria by Aluko, Kolapo, Adeyeye and Oladele (2019) indicate that credit and liquidity risk exposure positively influence profitability of the financial institution. According to Edor (2021), most commercial banks in Nigeria have collapsed in the past decade because of inadequate management of financial risk exposure. In Ghana, Duho, Onumah, Owodo, Asare and Onumah (2020) observed that credit risk,

operational risk and liquidity risk exposure significantly contribute towards profitability of the financial institutions. This relationship between risk exposure and profitability of the covered institutions was found to be moderated by age and size. In Namibia, Maseke and Swartz (2021) shared that there has been a rise in non-performing loans in the banking sector with the year 2018 reporting the highest record.

In Kenya, Mudanya and Muturi (2018) observed that market risk, credit risk, liquidity as well as operational risk exposure significantly affects profitability of banks. According to Njeru and No (2021), while credit risk exposure was positive and significant with profitability, interest rate risk exposure was not significant. Mudanya and Muturi (2018) shared that credit risk, market risk, operational risk and liquidity risk exposure have negative effect on profitability. Chepngetich (2022) indicated that liquidity risk exposure is negatively correlated with profitability. Toroitich (2018) shared that credit risk and operating risk exposure is negatively related with profitability. Lelgo and Obwogi, (2018) in their study on Effect of financial risk on financial performance of micro finance institutions in Kenya observed that liquidity was positively related with financial performance and that a significant negative relationship existed between interest rate risk and credit risk with financial performance. Kosasia and Njeru (2023) observed that risk exposure is negatively linked with profitability of an institution.

Microfinance banks play an important role and are necessary in a growing economy. They enhance financial inclusion by providing microfinance services such as financial intermediation, savings, credit and funds transfer services in low-income households more so those in remote areas. In order for their services and operations to remain sustainable, it is important for them to be profitable (Khan, 2020). The performance of Microfinance banks in Kenya has been on a downward trend. The sector reported a combined loss before tax of Ksh.980 million as at

December 31, 2022, compared to a loss of Ksh.877 million as at December 31, 2021. Four institutions reported profits, while the remaining ten institutions registered losses. Two MFB namely Maisha Microfinance Bank Limited and Rafiki Microfinance Bank Limited majorly contributed to the sector losses reporting losses before tax of Ksh.477 million and Ksh.314 million, respectively (Central Bank Supervisory Report, 2022).

Microfinance banks main aim is to meet incurred expenses, increase the return on invested capital and maximize the wealth of its shareholders (Afolabi, Obamuyi & Egbetunde, 2020). Remaining profitable especially for financial institutions and the banking sector in general is influenced by a range of factors key one being financial risk exposure (Toufaili, 2021). However, this has become unattainable with losses attributed to reduction in income thus exposing institutions to liquidity risk, funds transfer to alternative investments, competition from commercial banks and digital lenders. (Central Bank Supervisory Report, 2022). Other causes of losses in MFB also include non-performing loans which expose the institutions to credit risk and lack of proper management strategies and processes leading to operating risk. With the main objective being increasing profitability, MFB need to plan properly on the most effective risk management strategies.

Thus, from the foregoing discussion, it is evident that key aspects of financial risk include credit risk, liquidity as well as operational risk and the same will be adopted in the present study as independent variables. However, the other gap arising from the above literature is that they failed to capture an appropriate moderator variable and thus were merely limited to risk and financial performance. This will be bridged in the proposed study by incorporating corporate governance as a moderator variable in the proposed study. Against this background, the present

study will seek to establish the effect of financial risk exposure and corporate governance on profitability.

1.1.1 Financial Risk Exposure

Risk is an unforeseen circumstance that has some probability of occurrence (Akash, Reza & Alam, 2024). Some losses are likely to arise whenever a risk arises in an organization (Wood & McConney, 2018). On the other hand, financial risk exposure determines the probability of future losses that may be occasioned by an occurrence (Aluko, Kolapo, Adeyeye & Oladele, 2019). It is adopted as the base of ranking possibility of occurrence of diverse range of losses (Toroitich, 2018). A financial institution can be exposed to a range of financial risks that include liquidity risk, operational risk, credit risk, interest rate risk and market risk among other aspects. This study considered liquidity, credit and operational risk exposure (Eklemet, MacCarthy & Gyamera, 2024). In a financial institution, liquidity risk can be measured using loans to deposit ratio and loans to asset ratio and it signifies the ability of the institution to meet its short-term obligations as they fall due (Toufaili, 2021). Credit risk in the financial institution is mostly measured by non-performing loans against total loans while operational risk is commonly measured using cost income ratio (Muthia, Ghasarma, Andaiyani & Setiawan, 2020).

1.1.2 Profitability

Profitability is a financial metrics and one of the goals that guide the operations of the financial institution (Edor, 2021). It is derived from the net income that a firm generates after meeting all the operating expenses (Chepngetich, 2022). Profitability is of importance to shareholders of the firm since it influences the ability to maximize their wealth by the firm. Generation of profits enables the firm to remain competitive in the ever-changing business environment that financial institutions do operate (Maseke & Swartz, 2021). There are a range of

proxies that can be used to measure profitability of an institution. These include return on assets (ROA) and return on equity (ROE) (Tarawneh, Abdul-Rahman, Mohd Amin & Ghazali, 2024). The term ROA is the proportion of net income that is generated by the firm through effective utilization of the assets in place (Ikponmwosa, 2020). On the other hand, ROE is the net income that a firm generates after effectively utilizing the equity funds in the balance sheet (Shair, Sun, Shaorong, Atta & Hussain, 2019). In this study, profitability was measured using ROE.

1.1.3 Corporate Governance

Corporate governance is the interaction between the board of the firm, its management and shareholders as they work to achieve the established goals. In any firm, each of the said three parties has its own unique roles and responsibility to play to ensure smooth running (Kafidipe, Uwalomwa, Dahunsi & Okeme, 2021). For instance, while the shareholders are owners of the firm responsible for supplying the funds needed to operate optimally, managers have a role of making decisions that affect overall profitability of the firm. In doing so, they aid in maximization of the wealth of the owners (Guo, Wei, Wang & Hu, 2024). On the other hand, the board of directors has a role of monitoring and providing oversight on the actions undertaken by managers in the course of the tenure in the firm. This is aimed at protecting the interests of the shareholders (Grace, Vincent & Evans, 2018).

One of the most critical components of the corporate governance that contributes towards effective risk management practices in the firm is the risk committee (Alghizzawi, Ahmed, Al-Gasawneh & Alhawamdeh, 2024). As a corporate governance mechanism, the risk committee is responsible for assessing the acceptable risk tolerance levels and in coming up with effective strategies of mitigating exposure to various risks by a financial institution so as to optimize the returns generated from operations (Wau, Fau & Mendrofa, 2023). Hence, the composition, level

of independence and the balance of expertise in this risk committee are critical issues that can drive effective management of risk exposure in a firm. The long run effect of all this would be an improvement in the level of profitability of the firm (Jiang & Ji, 2024). In this study, corporate governance will be measured by independence of the board risk committee.

1.1.4 Microfinance Banks in Kenya

The role of the microfinance banks is crucial toward the development and growth of developed as well as developing nations of the world. The role is achieved through enhancing the financial inclusion of the underserved population (Momani, 2018). However, in certain developing nations such as Kenya, such banks have continued experiencing profitability issues (Njagi & Njoka, 2021). For example, data from the Central Bank of Kenya (CBK) for the 5-year horizon (2018-2022) show that the banks have continued operating under a negative net income and thus making losses. In fact, ROE and ROA of Kenyan microfinance banks averaged -13.24% and -1.55% respectively for the 2018-2022 horizon (CBK Supervisory Report, 2022). These banks are subject to several risks such as operational risk, credit risk, liquidity risk and market risk as they go about their undertakings (Ishmail, 2024). However, correlation between exposure of the banks to such risks and their profitability has remained mostly unexplored yielding gaps hence the necessity for the current study.

1.2 Statement of the Problem

Despite the important role played by microfinance banks in Kenya towards growth of Kenya's economy, their main problem currently is decreasing trend in their profitability (CBK Supervisory Report, 2022). For instance, across the period 2018-2022, the values of ROE and ROA of these institutions averaged at -13.24% and -1.55% (CBK Supervisory Report, 2022). In the financial year ended December 2022, the microfinance sector reported a combined loss before

tax of Ksh.980 million compared to a loss of Ksh.877 million as at December 31, 2021. Only Four institutions reported profits, while the remaining ten institutions registered losses. The losses were largely reported in two MFB which include Maisha Microfinance Bank Limited and Rafiki Microfinance Bank Limited which reported losses before tax of Ksh.477 million and Ksh.314 million, respectively (Central Bank Supervisory Report, 2022). In the course of operations of these institutions, they are exposed to risk which could be the reason for the aforementioned trend in profitability. These negative average values of ROA and ROE across the said period coupled with huge losses before tax imply that majority of the microfinance banks in Kenya have been reporting losses and thus their profitability is under threat. According to Gakenia and Warui (2021) and Mwanja (2021), long exposure to financial risk can negatively affect the returns generated by an institution, although these studies did not capture and address the possible moderating effect of corporate governance in this relationship. This trend in negative profitability of these institutions require urgent measures to reverse failure to which the entire sector is likely collapse and customers would lose significant amount of their deposits (Chepngetich, 2022) and hence the main problem that this study sought so solve. It is hoped that by a review of the various financial risks that these institutions are exposed to, coupled with strengthening of the board risk committees, the aforesaid negative trend in their profitability would be solved.

The available relevant studies like Dajau (2024) largely focused on Nigeria away from Kenya linking corporate governance and profitability and thus the aspect of financial risk exposure was not captured. Ishmail (2024) addressed the financial risk financial performance relationship among microfinance banks in Kenya but captured firm size as moderator variable away from corporate governance. Baltas and Liñares-Zegarra (2025) also explored financial risk in relations to efficiency of microfinance banks in Kenya which is conceptually different from profitability.

Therefore, although nexus between financial risk and profitability has been explored by past studies, they have not incorporated the moderating role of corporate governance in the Kenyan microfinance context. Thus, against all these gaps, the present study sought to determine the effect of financial risk exposure on profitability of microfinance banks in Kenya.

1.3 Research Objectives

1.3.1 General Objective

To establish the moderating effect of corporate governance on the relationship between financial risk exposure and profitability of microfinance banks in Kenya

1.3.2 Specific Objective

The following specific objectives will be used to guide the study:

i. To establish the effect of credit risk exposure on profitability of microfinance banks in Kenya.
ii. To determine the effect of liquidity risk exposure on profitability of microfinance banks in Kenya.
iii. To analyse the effect of operational risk exposure on profitability of microfinance banks in Kenya.
iv. To assess the moderating effect of corporate governance on the relationship between financial risk exposure and profitability of microfinance banks in Kenya.

1.4 Research Hypotheses

The study tested the following hypotheses:

H01: *Credit risk exposure has no statistically significant effect on profitability of microfinance banks in Kenya*

H02: *Liquidity risk exposure has no statistically significant effect on profitability of microfinance banks in Kenya*

H03: *Operational risk exposure has no statistically significant effect on profitability of microfinance banks in Kenya*

H04: *Corporate governance does not significantly moderate the relationship between financial risk exposure and profitability of microfinance banks in Kenya*

1.5 Significance of the Study

The findings of the study would be significant to the following parties:

1.5.1 Banking Sector

The findings of the study would help the banking sector to come up with relevant and well-informed strategies of mitigating exposure of commercial banks against risks.

1.5.2 Policy Makers

The study findings would guide new policy on financial risk management and profitability of Kenya's microfinance banking. The policymakers operating within CBK would be able to have appropriate policies regulating risk management as well as its interrelation with profitability. Scholars who would do further research on related topics would be able to study the literature addressed within the current study.

1.5.3 Management of MFIs

The credit managers of Kenya's microfinance banks would be able to institute appropriate mechanisms of managing exposure to credit risks within their institutions. The research would direct the finance managers of commercial banks operating within Kenya to reduce their costs hence increase their revenues which would subsequently reduce exposure to operating risk.

1.5.4 Future scholars and researchers

The research would help guide other scholars in their studies as they would have a chance of widening the existing Knowledge and information on risk exposure and profitability nexus.

1.6 Scope of the Study

The study aimed at determining the impact of exposure to financial risk on profitability. In a specific manner, the research targeted credit risk exposure, liquidity risk exposure, as well as operational risk exposure on the aspect of profitability with corporate governance as the moderating factor. The research targeted the case of microfinance banks in Kenya. The motivation for selecting such was based on their recent challenges as pertains their profitability as well as the same has created a keen interest among policymakers and scholars. The research was based on the 5-year timeline (2019-2023) utilizing information in an auxiliary form.

CHAPTER TWO

LITERARURE REVIEW

2.1 Introduction

The chapter explains the review of theories that assisted in informing the study variables. There is a review of past empirical studies informing gaps that will guide the current study. Conceptual framework and study variables operationalization are included as well.

2.2 Theoretical Review

The study is to be guided by the modern portfolio theory, financial intermediation theory and the liquidity preference theory.

2.2.1 Modern Portfolio Theory

The proponent of this theory was Markowitz (1952) and it helps investors to determine their expected returns and risks on investments. The theory regards risk as an inevitable thing that investors should seek to minimize through diversification. The theory indicates that investors can minimize their exposure to risks through diversification of the components in the portfolio. Diversification is a relevant strategy that helps financial institutions like commercial banks to minimize their exposure to credit risk and other financial risks which arise from their daily operations. By expanding and diversifying their loan portfolio, this theory allows financial institutions to minimize the credit risk exposure and thus maximizing returns generated on lending activities.

According to Wong (2013), this theory provides more information for financial institutions to carry out an assessment of their potential rewards and hazards and through this, they are able to carry out an accurate evaluation of the risks and returns from their investments. The theory expounds more on the central role played by diversification in reduction of exposure to a set of

financial risks which commercial and micro finance banks encounter in the course of their operations. There are two basic concepts that guide this theory: the goal of every investor is to make sure returns for any risk level has been maximized and that one can reduce risks through diversification of portfolio leveraging individual as well as unrelated securities. The premises of this this theory include the fact that investors are risk averse in nature. The implication of this assumption is that when investors are presented with two portfolios offering similar returns, the less risky one will be taken up by an investor. Thus, accepting additional risk by an investor can only be possible in the event that there will be compensation for the higher risk undertaken as higher returns are associated with greater risks. In effort to reduce risk associated with portfolio, investors do hold combination of instruments which are not positively and perfectly correlated.

This theory has been subjected to a number of criticisms including questions on whether it is ideal tool for guiding investment since its financial market model is not in sync with the situation in the real world on a number of accounts. Correlation and risk return measures under this theory are based on expected values, implying they are mathematically established statements regarding the future (Markowitz, 1952). In practical sense however, investors are required to make sure that predictions have been substituted on the basis of historical predictions of asset return and volatility in regard to these values within equations. Despite the criticisms, this theory was found relevant in the present study as it informed the broad independent variable being financial risk exposure and the central role it occupies as far as profitability of banks is concerned.

2.2.2 Financial Intermediation Theory

Leland and Pyle (1977) came up with this theory, where it focuses on intermediaries' central role that is played by financial institutions within an economy. According to the theory, commercial banks make perfect utilization of such intermediaries' role by mobilizing deposits,

whose purpose is for lending to customers. The deposits, therefore, enable the financial institutions to strengthen the available capital needed by customers in the form of loans aimed at the purposes of investment as well as capital development. The theory continues by stating that there exists intermediaries such as commercial banks, whose role is mainly based on transaction cost reduction within an economy as they provide relevant information to borrowers within an economy. Following Allen and Santomero (1997) as well as Bahajand and Malherbe (2020), the role of providing additional information of customers pertaining to the existing products as well as their usefulness is exclusively the responsibility of the intermediaries.

Therefore, there is a role for financial intermediaries to promote financial literacy. Financial intermediaries have good knowledge of information on economies of scale within an economy. In the same way, such institutions make use of existing payment systems so as to decrease costs of transactions for customers (Allen and Santomero, 1997). The main emphasis and focus of this theory is on the role of the intermediaries of a financial institution within an economy for deepening as well as inclusion of finances. It is the argument of Claus and Grimes (2003) that the main emphasis and concentration of this theory is on the role rather than the reasons for existence of a financial institution within an economy. In respect of roles, foreign currency service is offered by commercial banks, savings as well as deposits are mobilized, advances of loans being given to customers as well as a custodian service for customers. However, the main activity by commercial banks as well as other financial institutions is the mobilization of savings as well as deposits of customers that are utilized as capital so as to fund customers as well as advances of loan.

The theory has, however, been faulted as reducing the general role of commercial banks in an economy to mobilization of deposits as well as lending out same to customers as loans. The

theory has further also been faulted for assuming that deposits mobilized by commercial banks can be used as enough funds for lending out as advances as customers can withdraw deposits with or without notice depending on the nature of the account held (Claus and Grimes 2003). In spite of such criticisms, the theory was applied as the main dependent variable profitability was underpinned. Improved mobilization of deposits as needed by commercial banks would enhance uptake of the loan that would improve the profitability of such institutions.

2.2.3 Liquidity Preference Theory

Keynes (1936) formulated the theory from his argument that explains why institutions, as well as individuals, demand money for liquidity purposes. According to the theory, liquidity is essential for the achievement of the precautions by the financial institutions, for everyday transactions as well as for speculation purposes. Financial institutions need to be liquid so they can perform the everyday activities and transactions. This theory can help contribute additional information when it comes to credit terms, as well as interest and liquidity levels that customers demand for determination of likely exposure of risk.

Low liquidity is where there are high levels of interest rates within an economy. The theory posits that there is always an incentive of choice for investors. Keynes (2011) documented that there are inverse relationships between deposits of transaction and the level of interest. The main contention of the theory is that where there are very low levels of interest, pumping in the money within an economy in terms of quantity will not entail investment but instead, would raise the quantity of the cash balance. The main reason for this is that by then, people will have higher expectations of a rise of the rate of interest at a later time in the future. In the current research, liquidity risk was one of the independent objective variables addressed and the same was supported by liquidity preference theory.

2.2.4 The Agency Theory

Jensen and Meckling (1976) were the main proponents of this theory and it is the foundation of modern-day corporate governance mechanisms in organization. The theory establishes three key actors in an organization as the management, shareholders and the board of directors. Each of these parties has a specific role to play in ensuring successful operation of the firm. In any firm, each of the said three parties has its own unique roles and responsibility to play to ensure smooth running. For instance, while the shareholders are owners of the firm responsible for supplying the funds needed to operate optimally, managers have a role of making decisions that affect overall profitability of the firm (Panda & Leepsa, 2017). In doing so, they aid in maximization of the wealth of the owners. On the other hand, the board of directors has a role of monitoring and providing oversight on the actions undertaken by managers in the course of the tenure in the firm. This is aimed at protecting the interests of the shareholders (Panda & Leepsa, 2017).

The theory regards managers as agents who work on behalf of shareholders and that their main role is to maximize wealth of owners. However, it goes further and portray the same managers as individuals who might be driven by self-interests and thus may only engage in actions that satisfy their own interests as opposed to those of the shareholders. This in turn creates conflicts between those in management and the shareholders (Bosse & Phillips, 2016). As a way of dealing with the said conflicts of interests, some agency costs are incurred in order to align their interests of these two parties together. One of the agency costs is having in place the board of directors to check on the actions and decisions of the managers (Mitnick, 2015).

In any organization, boards are made up of committees that are designate with specific roles to play. Risk management board committee is one of them, that is responsible for all matters

and issues related with risks in an organization. Thus, the constitution of this committee in terms of independence and expertise are critical in allowing it to fully discharge its roles and responsibilities (Ballwieser, Bamberg, Beckmann, Bester, Blickle, Ewert & Wilhelm, 2012). This agency theory was used in this study to support and anchor the moderating variable corporate governance.

2.3 Empirical Review

This section provides a critical review of empirical research applicable to the goals of the current study. It addresses the impact of credit exposure, liquidity risk and operational risk exposure on the profitability of microfinance banks considering the moderating effect of corporate governance.

2.3.1 Credit Risk Exposure and Profitability of Microfinance Banks

Agbana, Bukoye, and Arinze-Emefo (2023) carried out a qualitative study within Nigeria that aimed at investigating the effects of credit risk management on the financial performance of lending organizations that are classified as microfinance institutions (MFIs). The study brought out some of the most critical dimensions of credit risk management within lending organizations, including credit appraisal, proper loan supervision, as well as timely intervention for loan recovery. The study further presented some of the challenges encountered by MFIs while managing credit risk, including limited access to credit information, weak regulatory environments, as well as operational restrictions. The challenges, as observed, had a negative impact on the overall financial performance of the MFIs. However, Nigerian context was the focus of this study while Kenyan case was key in the present study.

Enoch, Digil, and Arabo (2021) studied the link between credit risk control and the profitability of microfinance banks. The study used a combination of primary and secondary

sources of information and concluded that credit risk control needs to be enhanced by the microfinance banks for maximizing their profitability. Furthermore, Natufe and Evbayiro-Osagie (2023) made a study of credit risk that had an impact on the Nigerian banks' financial performance between 2010-2021. Their research upheld that credit risk had a strong influence on the financial efficiency of the banks, indicating that competent credit risk control is essential for the maintenance of profitability. The study focused on financial performance in general while profitability was key in the present study.

Parallelly, Paul and Musiega (2020) conducted a review of credit risk management practices and their impact on the financial performance of Kenyan MFIs. The research considered several factors, including credit risk grading, viability identification, as well as credit risk control. Applying modern portfolio theory as the anchor for study, the researchers surveyed 96 respondents out of the 1,147 targeted using questionnaires. According to their findings, there was a need for quality credit risk management practices for enhancing the financial performance of the MFIs. The study highlighted the need for risk mitigation strategies for enhancing the profitability of the microfinance institutions. Pure primary data was used in this study while secondary insights were collected and analysed in the present study.

Kosasia and Njeru (2023) conducted a study of the relationship between credit risk and profitability of Kenyan microfinance institutions. The study, based on 2020-2022 data, unveiled the critical financial issues affecting the performance of Kenyan microfinance banks. The reoccurring negative tendencies of the main indicators of profitability, including return on equity (ROE) and return on assets (ROA), have been caused by substandard credit risk management practices. The study underlined the necessity of enhancing credit risk mitigation strategies as well

as improving the financial standing of the sector. This study however did not address the moderating effect of corporate governance.

2.3.2 Liquidity Risk Exposure and Profitability of Microfinance Banks

Liquidity risk is another essential factor that influences the profitability of microfinance institutions. Bwacha and Xi (2018) examined the link between liquidity and profitability for 50 banks from the North American and European markets between 2008–2017. The research highlighted main liquidity indicators, including the loan-to-deposit ratio as well as the cash-to-deposit ratio. Nonetheless, the research established that the liquidity indicators had minimal effects on the firms' profitability, indicating that liquidity risk is not likely to have a direct impact on firm-level profitability. This study was limited to North American and European markets while present study was done in Kenyan context.

Contrarily, Msuku (2020) carried out research on liquidity risk management and its association with the Tanzanian commercial banks' financial performance. Using the descriptive study design, a direct and substantial effect of liquidity risk on the banks' financial performance was made apparent. Effective liquidity risk management was noted as critical for banks to offer quality service as well as enhance their financial performance. Financial performance in general was the focus of this study unlike profitability in the present study.

Otwoko and Maina (2021) conducted research on the impact of liquidity risk on financial performance with emphasis on Kenya's deposit-taking SACCOs. The research, utilizing a descriptive survey approach and regression analysis, established a positive relationship between liquidity risk and financial performance. The research suggested that there is a need for raising awareness among customers for enhancing deposits, loan uptake, hence improving the overall

financial performance. While SACCOs were covered in this study, microfinance entities were the focus of the present study.

Onyango and Gatumo (2022) examined the linkage between liquidity risk and the financial performance of Kenya's investment banks. Applying a philosophy of positivism as well as a mixed-methods strategy, it discovered that while liquidity risk levels remained low, they correlated inversely with the financial performance. What this indicates is that a high liquidity risk can negatively impact the profitability of investment banks, despite the low level of risk. Financial performance was covered in general while profitability was key in the present study.

Njue (2020) examined the role of liquidity management on the financial performance of Kenya's microfinance institutions. Primary and secondary data for the years 2012–2016 were used, and based on the findings, it was revealed that asset quality, as well as the maturity gap, had a negative, insignificant effect on financial performance. The research suggested that MFIs enable their loan portfolios to be managed efficiently, thus minimizing loan delinquency, potentially enhancing profitability. Asset quality and maturity gap were used as predictors for Financial performance in this study while credit risk, liquidity risk, operational risk and corporate governance were used as the predictors of profitability in the present study.

Muriithi and Waweru (2017) studied the association between liquidity risk and financial performance of the Kenyan banking industry. Data for 43 banks for a period of 2005-2014 have been considered, and analysis of the same revealed that there was a negative association between liquidity risk and financial performance. While liquidity risk had a negative correlation with respect to financial performance, liquidity coverage ratio, an important measure of liquidity risk, had not shown any statistically significant value for the same. Commercial banks away from microfinance entities were covered in this study.

Otieno, Nyagol, and Onditi (2016) examined the relationship between the liquidity risk management of microfinance institutions and their financial performance in Kenya. Their longitudinal analysis of panel data from 2011-2015 for 12 MFIs employed regression analysis to evaluate the role of liquidity risk management in impacting profitability. They discovered that liquidity risk management had a positive, strong, and statistically significant influence on the financial performance of the Kenyan microfinance banks, stressing the significance of sound liquidity risk management practice for improving profitability in the Kenyan microfinance industry.

The reviewed empirical research highlights the significance of credit as well as liquidity risk management in determining the financial performance of microfinance banks. Proper credit risk management, through loan appraisal, monitoring, as well as recovery strategies, is necessary for enhancing profitability. By managing liquidity risk, possessing sufficient liquidity buffers, as well as striking a balance between deposits and loans, the stability as well as profitability of the finances can be ensured. Although a few of the studies registered mixed or inconclusive evidence, most of them highlighted the positive link between good risk management strategies as well as the financial performance of the microfinance organizations in Kenya.

2.3.3 Operational Risk Exposure and Profitability of Microfinance Banks

Operational risk exposure has a profound impact on the financial performance of microfinance institutions (MFIs). Studies examining this relationship have provided critical insights into the influence of operational risk on profitability. This section reviews various empirical studies that have explored the connection between operational risk and the profitability of microfinance institutions, particularly focusing on the banking sector in different regions.

Financial performance was covered in this in general while profitability was main focus of the present study.

In a similar study, Falih, Kasim, and Yaseen (2022) assessed the impact of operational risk management on the financial performance of commercial banks in Iraq. The researchers adopted a quantitative approach, gathering data using a questionnaire and analyzing it using Smart PLS 3.2.9 software. The study found a significant positive relationship between operational risk management and financial performance, highlighting the importance of effective risk management strategies in improving the financial stability and profitability of banks. The positive correlation suggests that institutions with better operational risk management practices tend to perform better financially.

Santika, Fakhrughozy, Nur, and Lestari (2022) conducted an analysis to investigate the relationship between operational risk and financial performance within the banking industry. They used return on assets (ROA) and return on equity (ROE) as proxies for financial performance. The study focused on independent variables, including average turnover, net income, overall operating expenses, and exchange rates. The data, which was collected from secondary sources, revealed a significant connection between operational risk factors and the financial performance of the institutions studied. This finding underscored the importance of managing operational risks to enhance profitability in the banking sector. The banking sector was covered in general in this study while microfinance was key in the present study.

Lyambiko (2015) explored the link between operational risk management practices and financial performance in Tanzanian commercial banks. The study covered 36 banks, using secondary data collected over the period from 2009 to 2013. The findings revealed a significant

connection between operational risk factors, including credit and insolvency risk, and financial performance. Specifically, the study found a positive relationship between operational risk and the profitability of the banks, suggesting that efficient management of operational risks could enhance financial outcomes. The focus of this study was on banks in Tanzania while microfinance entities in Kenya were covered in the present study.

Mrindoko, Macha, and Gwahula (2020) analyzed the relationship between operational risk and financial performance in Tanzanian banks. The research, covering a period from 2006 to 2019 and involving 41 banks, used STATA version 14 for data analysis. The results demonstrated that operational risk factors, such as bank leverage ratio, cost-to-income ratio, operating expense ratio, and portfolio concentration ratios, were significantly linked with ROE. Interestingly, the relationship between these factors and ROE was found to be inverse, suggesting that higher operational risks may decrease the profitability of banks, as reflected by lower ROE values. This study covered banks in Tanzania while microfinance entities in Kenya were key in the present study.

Toroitich (2018) conducted a similar study focusing on Kenya's commercial banks. This research examined the effect of various operational risk exposures, such as operational expenses exposure, operational efficiency exposure, credit risk, and liquidity risk exposure, on financial performance. The study, which covered 42 banks between 2008 and 2017, utilized panel data analysis to process the gathered information. The findings showed a significant relationship between operational risk exposure and the financial performance of these banks. The study highlighted the importance of managing operational risks to maintain profitability in Kenya's

banking sector. While this study covered commercial banks, microfinance entities were considered in the present study.

Njuguna, Gakure, Waititu, and Katuse (2017) explored operational risk management strategies and their effects on the growth of microfinance institutions in Kenya. The study employed a correlational survey design and collected primary data from 13 MFIs, with a sample of 57 respondents. The analysis revealed that there were adequate policies and procedures in place at MFIs for managing operational risks. Furthermore, it was evident that exposure to operational risks had a significant effect on the financial performance of these institutions, reinforcing the importance of managing operational risks to sustain profitability in the microfinance sector.

Finally, Ishmail, Memba, and Muriithi (2023) examined operational risk and its effect on the financial performance of microfinance institutions in Kenya from 2011 to 2019. The study used secondary data, and the proxies for operational risk included the management expense ratio, operational expense ratio, overheads to total earnings, and cost-to-income ratio. The analysis revealed that operational risk had a significant inverse effect on the financial performance of microfinance banks, as measured by ROA. However, the relationship between operational risk and ROE was found to be insignificant. This suggests that while operational risks may impact profitability in terms of ROA, they may not have a significant effect on ROE in Kenyan MFIs.

Empirical studies reviewed demonstrate that operational risk exposure is a significant determinant of financial performance in microfinance institutions. A common theme across the studies is the significant impact of effective operational risk management on profitability. While some studies indicated a positive relationship, others pointed to an inverse relationship between operational risk and profitability, particularly in terms of ROA. The overall findings emphasize

the need for microfinance institutions to develop and implement robust operational risk management strategies to safeguard their profitability and financial stability.

2.3.4 Financial Risk Exposure, Corporate Governance and Profitability

The focus of the study conducted by Wau, Fau and Mendrofa (2023) was on financial risk, corporate governance and their effect on financial performance of banks in Indonesia. The study covered 19 listed banks. Structural equation modelling guided the analysis of findings in this study. It was noted from analysis that managerial ownership exerted significant effect on financial performance. It was also disclosed that governance disclosures have significant effect on financial performance of an enterprise. The study was done in Indonesia while the present study focused on Kenyan microfinance entities.

The study conducted by Kafidipe, Uwalomwa, Dahunsi nd Okeme (2021) was review of the effect of corporate governance, risk management and financial performance. The study was done within context of commercial banks in Nigeria. Determination of financial performance was done through Tobin Q. The study indicated that existence of a sound system of corporate governance in an organization contributes towards an improvement in profitability of the firm. It was also noted that the size of the board, its independence and board meetings were inversely linked with financial performance. This study focused on Nigeria away from Kenya.

In Kenya, Vincent and Evans (2018) determined the effect of corporate governance on financial performance. The study covered financial institutions in Kenyan context. Gathering of information in this study was guided by questionnaire and processing was done with aid of regression analysis. The study noted that corporate governance and its elements covering board committees and skills were determined as instrumental predictors of financial performance of the firm. While board skills were positive predictors of performance, board committees were negative

predictors. The study was limited to primary data while secondary data sources were used in the present study.

2.4 Conceptual Framework

The conceptual framework of the study and its variables is as indicated in Figure 2.1.

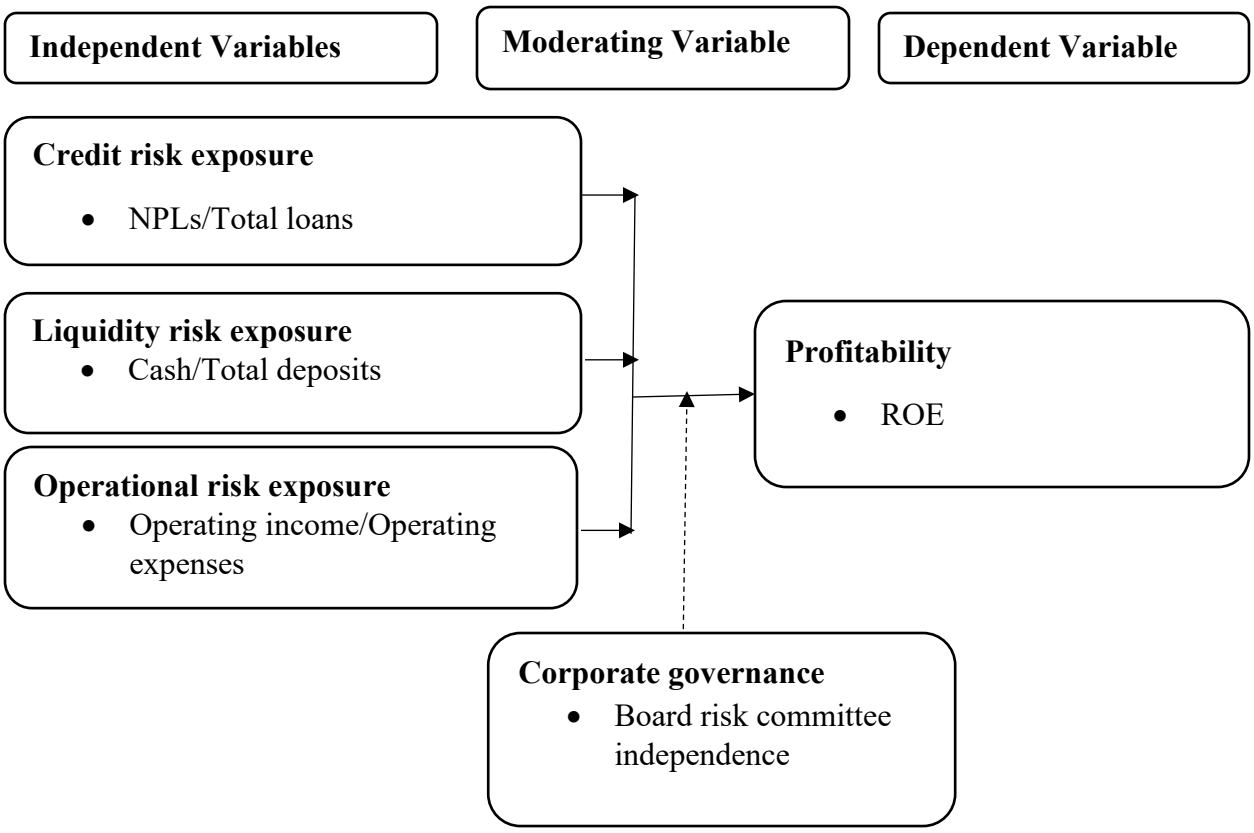

Figure 2.1: Conceptual Framework

From Figure 2.1, the broad independent variable is financial risk exposure. This is represented by credit, liquidity as well as operational risk exposure. On the other hand, the dependent variable is profitability measured by ROE. The moderating variable is corporate governance as represented by board committee independence.

2.5 Operationalization of Variables

Table 2.1 gives an overview of how the study variables are to be operationalized:

TABLE 2.1

Operationalization of Variables

Type of variable Variable	**Operationalization**	**Measurement**	**Scale of measurement**
Independent credit risk exposure	Non-performing loan ratio	Non-performing loans /Total loans	Ratio
Independent liquidity risk exposure	Cash deposit ratio	Cash/Total deposits	Ratio
Independent operational risk exposure	• Operating expense rat	Operating income/Operating expenses	Ratio
Moderating corporate governance	• Risk committee independence	Number of independent risk committee members/total directorship	Ratio
Dependent Profitability	• Return on equity ratio	Net income/Total equity	Ratio

2.6 Summary of Literature and Gaps

Agbana, Bukoye, and Arinze-Emefo (2023) carried out a qualitative research study in Nigeria whose objective was to assess the impact of credit risk management on the financial performance of microfinance institutions. They discovered that there are several challenges for

microfinance institutions (MFIs) to manage credit risk, such as constricted access to credit information, a poor framework of regulation, and operating constraints. These challenges hamper credit risk management effectiveness and affect the financial stability as well as the performance of MFIs. Paul and Musiega (2020) assessed credit risk management practices and their impact on the financial performance of Kenyan MFIs. Their analysis identified that credit risk management practices are strong predictors as well as drivers of finances, calling for MFIs to have strong risk management regimes. Although the studies carried out in Nigeria as well as Kenya aimed at general financial performance rather than profitability, the issue of how credit risk relates precisely to profitability in MFIs is still a key gap.

Enoch, Digil, and Arabo (2021) researched how credit risk control influences the profitability of microfinance banks. Their research established the necessity of improving credit risk management practices by microfinance banks. Yet, their study did not address explicit profits such as Return on Assets (ROA) or Return on Equity (ROE) as items of research, leaving a gap. Likewise, Natufe and Evbayiro-Osagie (2023) researched the linkage between credit risk and Nigerian banks' financial performance, determining that credit risk impacts significantly on financial performance. Yet, like the earlier studies, profit was not their main area of research, leaving scope for further specific research on the profit aspect of MFIs concerned with credit risk.

Kosasia and Njeru (2023) examined the credit risk-profitability relationship through the lens of Kenyan microfinance institutions. Their research indicated that there exist steady negative trends with respect to ROE and ROA values, reflecting the Kenyan microfinance sector as being financially challenged. This indicates the urgency of credit risk improvement for enhancing profitability. In spite of such insights, the overall concentration of the study on financial issues

misses the macroeconomic issues bearing on profitability, where there is a need for a detailed examination of the direct contribution of credit risk to microfinance profitability.

Bwacha and Xi (2018) studied the interlinkage between liquidity risk and banking profitability, with findings that metrics such as loan-to-deposit ratios and cash-to-deposit ratios were not statistically relevant to determining profitability. Their finding that liquidity risk did not have any material influence on profitability from a firm-level analysis leaves one pondering whether such a research finding can be generalized to Kenya, where liquidity risk practices might be different. Msuku (2020) studied liquidity risk management among Tanzanian commercial banks and concluded that liquidity risk control had considerable effects on financial performance. The study, however, targeted commercial banks, not microfinance institutions, leaving a void for knowledge of the relationship between liquidity risk, uniquely within the business of MFIs.

Otwoko and Maina (2021) considered the effect of liquidity risk on financial performance, focusing on Kenya's deposit-taking SACCOs. Their conclusion highlighted raising awareness as a means of enhancing deposits and loan uptake, hence their positive impact on financial performance. Onyango and Gatumo (2022) further studied liquidity risk among Kenya's investment banks, concluding that while liquidity risk was low, it had a negative relationship with financial performance. Njue (2020) surveyed the role of liquidity management among Kenya's microfinance organizations, suggesting that managers concentrate on managing loan portfolios effectively as a means of minimizing loan delinquency. Although the above studies highlight the significance of managing liquidity risk, they differentiate by focusing on other sectors of Kenya's financial system, thus gaps exist for specific studies focusing on the microfinance institutions as well as for enhancing profitability.

Muriithi and Waweru (2017) examined liquidity risk as it relates to financial performance in Kenya, wherein liquidity risk had a negative effect on financial performance. Their research did not target specifically, though, the context of MFIs, which is another context gap. Otieno, Nyagol, and Onditi (2016) examined liquidity risk management within Kenyan microfinance institutions, indicating that liquidity risk management is a good predictor of financial performance. Their research, being relevant more so for the current study, focuses on the significance of liquidity risk management while not examining its direct link with profitability, which is an essential avenue for further research.

Santika, Fakhrughozy, Nur, and Lestari (2022) discussed the link between operational risk and financial performance of banks. They established a positive link between operational risk factors and financial performance. Their research, however, did not target microfinance institutions, leaving a gap that this study seeks to fill. Falih, Kasim, and Yaseen (2022) evaluated operational risk management of commercial banks of Iraq, with the conclusion that sound operational risk management makes a substantial difference to financial performance. Although the research is helpful, it is not directly applicable to microfinance institutions, especially Kenya, whose operational risks will likely be different.

Lyambiko (2015) quantitatively examined the relationship between operational risk management practices and the financial performance of commercial banks in Tanzania, establishing that there is a positive correlation between operational risk and financial performance. Unfortunately, though, the study was carried out in Tanzania, not Kenya, and it examined commercial banks, leaving a gap concerning specific operational risk factors affecting Kenya's MFIs. Toroitich (2018) examined exposure to operational risk within Kenya's commercial banks and established there is a positive relationship between exposure to operational risk and financial

performance. The study, although pertinent to the current study, did not target microfinance institutions, hence leaving a gap for further detailed examination of operational risk within Kenyan MFIs.

Mrindoko, Macha, and Gwahula (2020) examined the relationship between operational risk and financial performance of Tanzanian banks, and the findings indicated that cost-to-income ratio, operating expense ratio, leverage ratio, and concentration ratios of the portfolio are significantly correlated with ROE. The negative correlation between the above factors and profitability indicates that there can be a decrease in profitability through excessive operational risks. Njuguna, Gakure, Waititu, and Katuse (2017) surveyed operational risk management practices among Kenyan MFIs, where they concluded that operational risks have a direct impact on financial performance. In the current study, their research, though enlightening, did not investigate how operational risk management practices directly affect profitability, the objective of the current research.

Ishmail, Memba, and Muriithi (2023) examined the impact of operational risk on Kenyan microfinance organizations' financial performance, with a demonstrated inverse relationship with ROA though there was no established relationship with ROE. The study emphasizes the significance of further research on the profitability dimension of exposure to operational risk by MFIs, given that the implication on ROA was noted as being higher than on ROE. Also, Kafidipe, Uwalomwa, Dahunsi, and Okeme (2021) examined the effect of corporate governance, risk, and financial performance, stressing that good corporate governance systems improve profitability. The study identified board size, independence, and board meetings as being negatively correlated with financial performance. Wau, Fau, and Mendrofa (2023) examined financial risk, corporate governance, and their influence on the financial performance of banks in Indonesia. They

established that governance disclosures significantly impact financial performance, indicating that mechanisms of governance can affect profitability. In Kenya, Vincent and Evans (2018) studied the influence of corporate governance on financial performance, observing that board skills and board committees were critical predictors, with board skills being positive predictors, while board committees are negative predictors of financial performance. Although such works highlight the significance of governance in the financial performance, they did not target specifically the role of governance within microfinance institutions, hence another gap within the existing research.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The main emphasis of this chapter is on providing a detailed account of the methodologies to guide gathering and processing of information in response to the formulated hypotheses.

3.2 Research Design

Research design is the plan that determines how information within a study will be gathered, processed, and interpreted (Liamputtong, 2019). It is a plan for the study as a whole and is necessary for responding to research hypotheses and research questions (Bougie & Sekaran, 2019). An explanatory research design was used by the current study for the purpose of testing hypotheses established concerning exposure to risk and profitability of microfinance institutions within Kenya. The research design applied inferential statistics, such as correlation analysis and regression analysis, for purposes of establishing relationships between different risks of exposure (such as credit, liquidity, and operating risks) and profitability measured by ROA and ROE. The said analysis provided p-values, whose interpretations were made for a significance level of 0.05 as dictated by the explanatory research design.

3.3 Target Population

The study population comprised of 14 registered and licensed microfinance banks by the Central Bank of Kenya (CBK) as of December 2023. These 14 MFIs are chosen based mainly on their public financial information availability, which is given to the CBK and made available for public access. The availability of information for analysis is assured, as well as a higher accuracy level for the study. Selection of the specific 14 MFIs makes the findings of the study applicable and relevant for the microfinance within the regulatory framework of the CBK.

3.4 Sample Size and Sampling Techniques

Sampling involves the process of selecting a group of individuals or organizations from the target population as a whole for inclusion in the study (Strijker, Bosworth, & Bouter, 2020). Given that the target population is comprised of 14 MFIs, a census sampling approach is employed for the current study. This entails the inclusion of all the 14 microfinance organizations in the analysis. Dźwigoł (2019) posits that census sampling is preferred where the population is small (fewer than 200 units). Utilizing a census, the study is able to ensure that the research findings are a complete representation of the population of Kenyan microfinance banks that can enable generalization of the research findings to all the MFIs under the supervision of the CBK.

3.5 Research Instrument

The research instrument for collecting information for this study will be based on secondary sources of data. The secondary data provide an effective way of collecting information, particularly where the information is available publicly in the form of MFIs' financial statements as well as publications by the CBK. There was an examination of the financial information between the years 2019-2023, as it is regarded as recent history that is pertinent to the current economic circumstances. A data collection sheet (Appendix II) was followed for extraction of information such as total loans, total deposits, operating costs, total equity, net income, as well as non-performing loans. The secondary data was used to calculate relevant financial ratios as presented under the operationalization of variables under Chapter Two.

3.6 Data Collection Procedure

The secondary data was collected from the websites of the respective MFIs as well as from publications by the Central Bank of Kenya. This approach enabled timely acquisition of accurate data between 2019 – 2023. Data points consisted of loan, deposits, operating costs, equity, and net

income, which are essential for deriving profitability measures like ROA as well as ROE. The gathered data was cleaned and processed through usage of Excel prior to analysis, so that the information is correct and ready for quantitative analysis. To ensure reliability, only audited data was included in this study.

3.7 Data Analysis and Presentation

Data analysis refers to the procedure of converting raw information into sensible information that informs decision-making. For the analysis of the data that was collected, SPSS version 26 was employed. SPSS was adopted for analysis because the data collected in this study was not complicated, could easily be handled by this tool. Summarizing data was done through the application of descriptive statistics, such as means, while inferential statistics, such as the application of regressions, were employed for the purposes of hypothesis testing. The relationship between exposure of finances to risk (credit risk, liquidity risk, and operational risk) and profitability (ROE) was evaluated through the application of the regression model. Tables and figures were employed for the purposes of illustrations, while p-values were evaluated on the significance level of 0.05 for purposes of identifying the direction as well as the strength of the relationship. Four regression models I-IV were used to guide inferential analysis in this study. The general regression model linking financial risk exposure and profitability was as under:

$$\mathbf{Y}it = \beta_0 + \beta 1_t \mathbf{CRE}it + \beta_{2t} \mathbf{LRE}it + \beta_{3t} \mathbf{ORE}it + \varepsilon_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \textbf{(I)}$$

Y= Profitability

CRE= Credit risk exposure of microfinance Bank i and time t

LRE= Liquidity risk exposure of microfinance Bank i and time t

ORE= Operational risk exposure of microfinance Bank i and time t

B_0 = Constant

β1, β2, β3 are Coefficients

ε = error term

The following three equations adopted from Baron and Kenny (1986) helped to test for moderating effect of corporate governance:

Yit= β_0+ β_1FREit+ ε…… (II)

Y= Profitability of microfinance Bank i and time t

FRE= Financial risk exposure of microfinance Bank i and time t

B_0 = Constant

β1, Coefficient

ε = error term

Yit= β_0+ β_1FREit+β_2CGit+ ε…… (III)

Y= Profitability

FRE= Financial risk exposure of microfinance Bank i and time t

CG= Corporate governance of microfinance Bank i and time t

B_0 = Constant

β1, are Coefficients

ε = error term

Yit= β_0+ β1FREit+β_2CGit+β_3 CGit*FRE+ ε…… (IV)

Y= Profitability of microfinance Bank i and time t

FRE= Financial risk exposure of microfinance Bank i and time t

CG= Corporate governance of microfinance Bank i and time t

B_0 = Constant

β1, are Coefficients

ε = error term

β_3 CG*FRE= Interaction term

The p-values from the three moderated equations above were interpreted as per Baron and Kenny (1986) to determine if corporate governance fully or partially moderates the relationship between financial risk exposure and profitability of the firm.

3.7.2 Diagnostic Tests

Prior to carrying out the regression analysis, it is necessary to test for certain assumptions to establish that the required conditions for valid statistical analysis have been met. In the current study, the primary assumptions of regression analysis—multicollinearity, normality, and heteroscedasticity—have been tested to establish the validity of the set of data. Diagnostic tests are essential for quantitative research as they ensure that the outcome from the regression analysis is authentic and credible. By assumption violation, it would be necessary to transform the data for appropriate statistic treatment prior to analysis.

3.7.2.1 Multicollinearity Test

Multicollinearity occurs where there is a strong correlation between the independent variables within a regression model, hence the redundancy of information given by the predictors. This distorts regression analysis, such that the impact of each independent variable on the dependent one becomes impossible to interpret (Dźwigoł, 2019). In such a scenario, the estimations of the regression coefficients become unstable, while the significance of individual predictors is lost. Detection of multicollinearity is made through Variance Inflation Factors (VIF) calculated for each independent predictor. VIF values of 1-10, as per Bougie and Sekaran (2019),

signal that multicollinearity is not a critical issue, hence one can perform a regression analysis. When VIF values that exceed 10, signifying high multicollinearity, statistical interventions like elimination of, or merging of variables, were used to correct for the problem so as to ensure the legitimacy of the regression analysis.

3.7.2.2 Normality Test

For the regression analysis to provide valid outputs, it is crucial that the data is normally distributed. Normal distribution is the symmetrical, bell-curved distribution of values, where most of the values are clustered around the mean. This is a critical assumption for regression analysis because it makes sure that the estimates of the regression coefficients are unbiased, as well as the reliability of the statistical tests of the regression model. To determine how normally distributed the data is, the values of skewness and kurtosis for each of the variables were determined through SPSS. According to Harris, Holyfield, Jones, Ellis, and Neal (2019), a skewness value of between +/-3 will tell one that the data is normally distributed. In cases where the values exceed that range, it would be an indication of a non-normal distribution, and so the issue would be addressed through data transformation or through other means such as the use of non-parametric tests.

3.7.2.3 Heteroscedasticity Test

Heteroscedasticity is a phenomenon where the variance of the error terms of a regression model is not homogeneous across all levels of the independent variable(s). Violation of the homoscedastic assumption can cause inefficient estimates as well as incorrect inferences concerning the relationships between the variables. Scatter plots of the residuals against the predicted values have been used to test for heteroscedasticity. In the absence of homoscedasticity, no pattern can be seen from such scatter plots, meaning that the variance of the residuals is homogeneous across all independent variables. A distinct pattern, such as a funnel, would denote

the presence of heteroscedasticity, prompting corrective action (e.g., transform the dependent variable, apply robust standard errors) necessary for remediation (Strijker, Bosworth, & Bouter, 2020).

3.8 Ethical Considerations

Ethical considerations are an integral element of any research process, allowing for the study's execution with integrity as well as respect for the rights of the people and organizations involved. In the study, all data collection and analysis was done with reference to ethical standards especially that of confidentiality, transparency, as well as the ethical use of information. Proper citation of all sources of information, publications, reports, as well as the Central Bank of Kenya (CBK) annual financial statements, was made using the American Psychological Association (APA) style of citation for avoiding plagiarism as well as for giving credit where it is deserved. For purposes of confidentiality, the information gathered from the MFIs as well as from the CBK was solely for academic purposes, with no sensitive information being disclosed outside of the study. Where specific information access needed prior approval, the researcher gained advance approval for it so as to ensure all protocols had been adhered to. In addition, all monetary information that had been gathered was kept securely using password-enabled computers for access control so as not to compromise the integrity of the research process. The information will be kept for a total of five years prior to its destruction as per ethical standards for the preservation of data as well as privacy. The research aimed at making sure that all the information collected had relevance to the research goals. Only the indicators listed on the data collection sheet, such as total deposits, total loans, operating costs, total equity, net income, and non-performing loans, were collected. This targeted approach made the data collection process efficient with minimal risk of

privacy infringement or abuse of information. Data access was limited only to legitimate staff, making sure that the information was processed securely and ethically for the purposes of research.

CHAPTER FOUR

FINDINGS AND DISCUSSION

4.1 Introduction

In this chapter, the main focus is on providing the analysis of the findings on the data that had been generated from secondary sources. The contents covered in this chapter include the descriptive statistics, diagnostic tests, regression results and lastly hypothesis testing merged with discussions.

4.2 Descriptive Statistics

Table 4.1 gives a breakdown of the findings of descriptive statistics covering means and standard deviations.

TABLE 4.1
Descriptive Statistics

	n	Minimum	Maximum	Mean	Std. Deviation
Credit Risk exposure	70	.00	.82	.1768	.16870
Liquidity risk exposure	70	.06	.38	.1782	.05589
Operational Risk Exposure	70	3.71	5.74	4.6677	.57405
Financial risk exposure	70	.00	.91	.1733	.14957
Corporate Governance	70	.00	.16	.0304	.02849
Profitability	70	.00	.05	.0093	.01229
Interaction term	70	.00	.15	.0091	.01896

The findings in Table 4.1 indicate that while credit risk exposure had mean value of .1768, liquidity risk exposure had .1782, operational risk exposure had 4.6677, financial risk exposure had .1733, corporate governance with .0304, profitability with .0093 and the interaction term had .0091. The implication of these findings is that financial risk exposure and corporate governance collectively accounted for about 1% of the profits that were being generated by Microfinance institutions in Kenya.

4.3 Diagnostic Tests

This section provides an account of the relevant diagnostic tests that were performed to validate the assumptions of the regression model before actual analysis:

4.3.1 Multicollinearity Test

The data set is said to be having multicollinearity problem when at least or all of the predictor variables have a relationship with each other instead of being linked to the dependent variable (Dźwigoł, 2019). This condition is a strong violation of the requirements and rules required to conduct regression analysis. To test for this condition, the values of Variance of Inflation Factors (VIF) were generated. As noted by Bougie and Sekaran (2019), such VIF values in the range 1-10 provide indication that multi-collinearity is not serious in the sample data and thus regression analysis was allowed. In the event that multi-collinearity is detected in the data, the data set should undergo a statistical treatment before running the analysis. Table 4.2 is a summary of the findings of Multicollinearity Test.

TABLE 4.2
Multicollinearity Test

	Collinearity Statistics	
	Tolerance	**VIF**
Credit Risk exposure	.977	1.024
Liquidity risk exposure	.826	1.210
Operational Risk Exposure	.573	1.744
Financial risk exposure	.132	7.572
Corporate Governance	.161	6.215
Average	**0.5338**	**3.553**

a. Dependent Variable: Profitability

The findings in Table 4.2 indicate the mean VIF value under multicollinearity as 3.553. As noted by Bougie and Sekaran (2019), such VIF values in the range 1-10 provide indication that multi-collinearity is not serious in the sample data and thus regression analysis was allowed. Thus,

it can be inferred that there was absence of multicollinearity in the data that was gathered and analyzed in this study.

4.3.2 Normality Test

Normality is used to describe whether the data has properties of a normal distribution. For the purpose of running regression analysis, the general requirement is that the data must have a normal distribution. To test for this condition, the values of Skewness and Kurtosis were generated per variable from SPSS. Harris, Holyfield, Jones, Ellis and Neal (2019) indicate that whenever the values of Skewness and Kurtosis are in the range of +/-3, an inference to be drawn is that the data has properties of a normal distribution. The findings of Normality Test are as presented in Table 4.3.

TABLE 4.3
Normality Test

	N	Skewness		Kurtosis	
	Statistic	**Statistic**	**Std. Error**	**Statistic**	**Std. Error**
Credit Risk exposure	70	2.200	.287	5.504	.566
Liquidity risk exposure	70	1.285	.287	2.643	.566
Operational Risk Exposure	70	.225	.287	-1.174	.566
Financial risk exposure	70	1.952	.287	7.264	.566
Corporate Governance	70	2.302	.287	8.071	.566
Profitability	70	1.785	.287	2.771	.566
Average	**70**	**1.624833**	**.287**	**4.179833**	**.566**

Table 4.3 indicates the mean value of Skewness and Kurtosis as 1.624833 and 4.179833 respectively. As noted by Harris, Holyfield, Jones, Ellis and Neal (2019) indicate that whenever the values of Skewness and Kurtosis are in the range of +/-3, an inference to be drawn is that the data has properties of a normal distribution. Since the value of Kurtosis was 4.179833 below the established threshold, it was further confirmed by the normal probability plot (PP) below that clearly signified the presence of normality in the data that was used in this present study.

Figure 4.1: Normal PP Plot

Figure 4.1 depicts data points clearly aligned along the normal PP line. This is clean indication of presence of normality in the data.

4.3.3 Heteroscedasticity Test

The opposed and desirable condition of Heteroscedasticity is Homoscedasticity (homogeneity of variances) and it is a supposition of equal or similar variances in different groups being compared. The study used scatter plots where no observable pattern was interpreted to imply absence of this condition in the sample data (Strijker, Bosworth& Bouter, 2020). Figure 4.1 is a breakdown of the findings of Heteroscedasticity Test

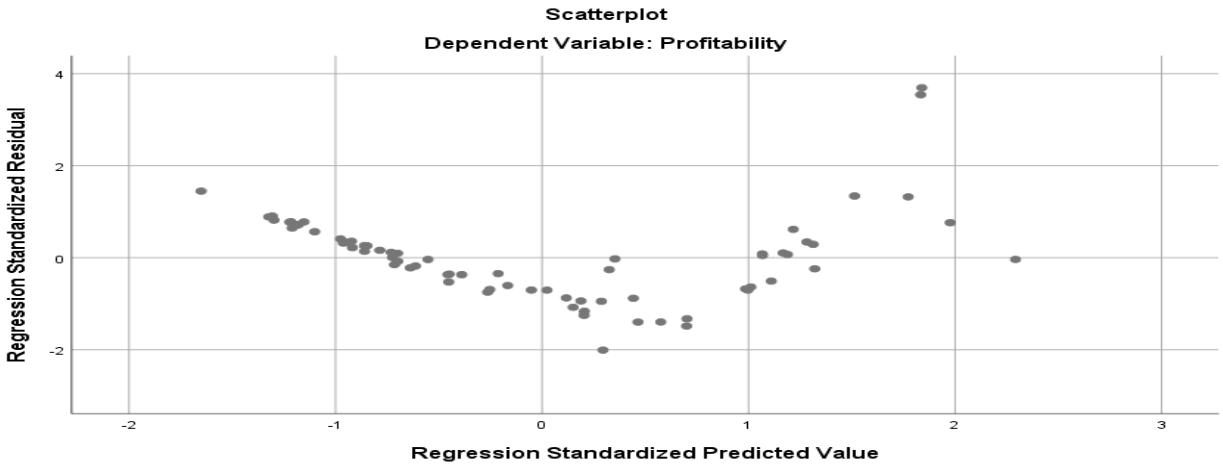

Figure 4.2: Scatter Plot for Heteroscedasticity Test

The findings in Figure 4.2 indicate that there is no clearly observable pattern from the spread of the data points. The finding agrees with Strijker, Bosworth and Bouter (2020) who

observed that absence of a clear pattern from the spread of the data points in a scatter plot is interpreted to imply absence of Heteroscedasticity condition in a sample data.

4.4 Regression Results

Two regression analysis models were adopted in this study, one for direct and the other for moderating effect. The findings were determined and presented as shown in the subsequent sections.

4.4.1 Effect of Financial Risk Exposure on Profitability

The effect of financial risk exposure on profitability of microfinance institutions in Kenya was explored through regression analysis. Table 4.4 gives a summary of the findings of the regression model summary:

TABLE 4.4

Model Summary Linking Financial Risk Exposure and Profitability

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.865[a]	.748	.736	.00631

Predictors: (Constant), Operational Risk Exposure, Credit Risk exposure, Liquidity risk exposure

The findings in Table 4.4 indicate the value of the coefficient of determination R-square as 0.748, this shows that there was overall model fitness. With adjusted R-square being 0.748, the implication is that 74.8% change in profitability of microfinance institutions in Kenya can be explained by their financial risk exposure as well a corporate governance. This implies that there exist other factors aside from the ones that were covered in the present which have an effect on profitability of the said institutions and this should be the main focus of future studies.

TABLE 4.5
ANOVA Findings

	Sum of Squares	df	Mean Square	F	Sig.
Regression	.008	3	.003	65.227	.000[b]
Residual	.003	66	.000		
Total	**.010**	**69**			

The findings in Table 4.5 indicate the value of F as 65.227, with $p<0.05$. This means that on overall, the regression model adopted in this study was significant. The values of significance and beta coefficients were determined and summarized as indicated in Table 4.6.

TABLE 4.6

Coefficients and Significance

	Unstandardized Coefficients		Standardized Coefficients		
	B	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	-.085	.008		-10.235	.000
Credit Risk exposure	.105	.005	.064	21.00	.012
Liquidity risk exposure	.121	.015	.095	8.067	.016
Operational Risk Exposure	.019	.001	.901	19.000	.000

a. Dependent Variable: Profitability

From the findings in Table 4.6, the following regression model is fitted between financial risk exposure and profitability of microfinance institutions:

$Yit= -0.085+0.105CREit+0.121LREit+0.019OREit + \varepsilon_t$…… (I)

Y= Profitability

CRE= Credit risk exposure of microfinance Bank i and time t

LRE= Liquidity risk exposure of microfinance Bank i and time t

ORE= Operational risk exposure of microfinance Bank i and time t

B_0 = Constant

$\beta 1, \beta 2, \beta 3$ are Coefficients

ε = error term

From Table 4.6, it can be asserted that credit risk exposure ($\beta=0.105$, $p<0.05$), liquidity risk exposure ($\beta=0.121$, $p<0.05$) and operational risk exposure ($\beta=0.019$, $p<0.05$) were all found to have positive and significant effect on profitability of microfinance institutions in Kenya.

4.4.2 Moderating effect of Corporate Governance on the Relationship between Financial Risk Exposure and Profitability

The moderating effect of corporate governance and profitability was determined through stepwise regression analysis that covered three steps hence three models. Table 4.7 provides summary of the regression model summary.

TABLE 4.7
Moderated Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R-Square Change
1	.583[a]	.340	.330	.01006	.340
2	.622[b]	.387	.369	.00977	.047
3	.637[c]	.406	.379	.00969	.019

a. Predictors: (Constant), Financial risk exposure
b. Predictors: (Constant), Financial risk exposure, Corporate Governance
c. Predictors: (Constant), Financial risk exposure, Corporate Governance, Interaction term

The findings in Table 4.7 shows that in model 2 when corporate governance was introduced, there was an R-square change of 0.047. After the introduction of the error term, the value of R-square change stood at 0.019. According to Yin (2017), any change in the R-square value during moderation testing is an indication of presence of moderating effect. Table 4.8 is a summary of the ANOVA findings.

TABLE 4.8
ANOVA Findings

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.004	1	.004	35.015	.000[b]
	Residual	.007	68	.000		
	Total	.010	69			
2	Regression	.004	2	.002	21.165	.000[c]
	Residual	.006	67	.000		
	Total	.010	69			
3	Regression	.004	3	.001	15.050	.000[d]
	Residual	.006	66	.000		
	Total	.010	69			

a. Dependent Variable: Profitability
b. Predictors: (Constant), Financial risk exposure
c. Predictors: (Constant), Financial risk exposure, Corporate Governance
d. Predictors: (Constant), Financial risk exposure, Corporate Governance, Interaction term

From Table 4.8, the values of F-calculated are taken as 35.015, 21.165 and 15.050 with all respective p-values ($p<0.05$). This is a clear indication that the regression models adopted in this study were all significant. The findings of the beta coefficients and significance were established and presented as shown in Table 4.9.

TABLE 4.9

Moderated Beta Coefficients and Significance

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			Std. Error	Beta		
1	(Constant)	.001	.002		.511	.611
	Financial risk exposure	.048	.008	.583	5.917	.000
2	(Constant)	.001	.002		.592	.556
	Financial risk exposure	.086	.018	1.046	4.649	.000
	Corporate Governance	-.221	.097	-.512	-2.273	.026
3	(Constant)	-.001	.002		-.386	.700
	Financial risk exposure	.097	.020	1.174	4.894	.000
	Corporate Governance	-.161	.105	-.372	-1.533	.130
	Interaction term	-.192	.132	-.295	-1.454	.151

a. Dependent Variable: Profitability

Table 4.9 indicate that in model 2, corporate governance ($\beta=-.221$, $p<0.05$) although with a negative beta coefficient was significant. In model 3, after the introduction of the interaction term alongside corporate governance as a moderator variable, both of them were insignificant ($p<0.05$). Since corporate governance was significant in model 2 and insignificant in model 3, it follows that it partially moderated the relationship between financial risk exposure and profitability.

4.5 Hypotheses Testing and Discussion

Hypothesis 1 (H_01)*: Credit risk exposure has no statistically significant effect on the profitability of microfinance banks in Kenya.* The study rejected this hypothesis, finding a significant effect of credit risk on profitability. Indicators revealed a p-value of $p = 0.012$, less than the significance level of 0.05, implying that credit risk exposure exerts a statistically significant influence on the profitability of Kenya's microfinance banks. H01 thus had to be rejected. The outcome confirms the conclusion of Paul and Musiega (2020), who examined the impact of credit risk management on the financial performance of Kenya's microfinance institutions (MFIs). They concluded that sound credit risk management practices served as the main drivers of financial performance, improving the profitability of MFIs, for example.

Enoch, Digil, and Arabo (2021) concur with such a conclusion from their research, where controlling credit risk made a positive difference to the profitability of microfinance banks. Their study emphasized the necessity of credit risk control actions by microfinance institutions to ensure the maintenance of profitability. In the same vein, Natufe and Evbayiro-Osagie (2023) did research on Nigerian banks and established that credit risk had a substantial influence on their finances, further supporting the notion that credit risk is essential for the maintenance of finances. In addition, Kosasia and Njeru (2023) noted that a host of financial issues, including the improper handling of credit risk, contributed negatively to Kenya's financial sector, whose main profitability indicators such as Return on Equity (ROE) and Return on Assets (ROA) persistently declined. This research further supports the argument that credit risk exposure is a central driver of profitability, particularly for microfinance banks.

Hypothesis 2 (H_02)*: Liquidity risk exposure has no statistically significant effect on the profitability of microfinance banks in Kenya.* This hypothesis was also rejected, as liquidity risk

exposure was found to significantly impact profitability. The second hypothesis (H02) assumed that exposure to liquidity risk does not have a statistically significant influence on the profitability of Kenya's microfinance banks. The evidence produced a p-value of $p = 0.016$, less than the 0.05 significance level, suggesting that exposure to liquidity risk significantly impacts the profitability of Kenya's microfinance banks. The study thus rejected hypothesis H02 and drew the conclusion that exposure to liquidity risk has a statistically significant impact on profitability.

The outcome is supported by Bwacha and Xi (2018) who carried out research on liquidity, as well as its relationship with the profitability of banks. Although their research revealed that liquidity metrics such as loan-to-deposit ratios had no bearing on the level of profitability, the research here posits that liquidity management by Kenyan microfinance banks is instrumental for their profitability. Msuku (2020) examined liquidity risk management for Tanzanian banks as well, and his research concluded that liquidity risk management activities had a direct bearing on the banks' finances. His research, though from a varying context, affirms that good liquidity management contributes to enhancing profitability.

Onyango and Gatumo (2022) also looked at the relationship between liquidity risk and financial performance for investment banks in Kenya. They pointed out that although liquidity risk remained low, there remained an inverse relationship between liquidity risk and financial performance. This indicates that liquidity management is an essential factor for the profitability of banks, including MFIs. Muriithi and Waweru (2017) established that liquidity risk had a negative effect on the financial performance of Kenyan banks, further indicating liquidity management as essential. Otieno, Nyagol, and Onditi (2016) narrowed their study down to Kenya's microfinance institutions

and established that liquidity risk management had a predictive influence on the financial performance. This further emphasizes the significance of liquidity risk management for Kenya's microfinance institutions for the purpose of securing profitability.

Hypothesis 3 (H_03)*: Operational risk exposure has no statistically significant effect on the profitability of microfinance banks in Kenya.* The study rejected this hypothesis, concluding that operational risk exposure significantly affects profitability.

The third hypothesis (H03) assumed that there is no statistically significant impact of operational risk exposure on the profitability of Kenyan microfinance banks. The analysis outcome identified a p-value of p = 0.000, well below 0.05, so hypothesis H03 is rejected. This is an indication that there is a significant impact of operational risk exposure on the profitability of Kenyan microfinance banks.

Santika, Fakhrughozy, Nur, and Lestari (2022) concur, stating that there is a strong relationship between operational risk and banking financial performance. Their research highlighted that controlling operational risks such as expenses and efficiency issues is critical for banks to realize profitability. Falih, Kasim, and Yaseen (2022) evaluated operational risk management for commercial banks in Iraq and established a positive relationship between operational risk management processes and company performance. There is evidence that banks face the greatest challenges from external risks, including their exposure to market risks.

Lyambiko (2015) examined the relationship between operational risk management and financial

performance in Tanzania, and established that operational risk, as well as credit and insolvency risk, had a bearing on financial performance. The findings of the study were corroborated by the findings of Toroitich (2018) who studied exposure to operational risk among Kenya's commercial banks. Toroitich established a positive relationship between exposure to operational risk and financial performance, confirming that operational risks have to be managed for the banking industry, including the microfinance banks, to be profitable.

Operational risk factors such as operating expenses, cost-to-income ratio, and leverage ratio of banks were significantly correlated with Return on Equity (ROE) by Mrindoko, Macha, and Gwahula (2020) for Tanzanian banks. Despite their study indicating an inverse correlation between operational risk exposure and profitability, it highlights the need for managing operational risks for improving profitability. Njuguna, Gakure, Waititu, and Katuse (2017) emphasized that exposure of operational risks could have a substantial impact on the financial performance of Kenyan microfinance institutions. Their observation aligns with the findings of the current study, reiterating the necessity of good operational risk management for microfinance banks. Ishmail, Memba, and Muriithi (2023) further identified that operational risk had a strong negative impact on the Return on Assets (ROA) of microfinance banks, although its impact on ROE was not as strong. This implies that although operational risks could have a negative impact on the aspect of profitability expressed as ROA, their impact on ROE could be varied based on the operational management of the organization. In summary, the evidence of the study highlights the critical contributions of credit risk exposure, liquidity risk exposure, and operational risk exposure to the profitability of Kenyan microfinance banks. Rejection of all three null hypotheses implies that such risk exposure is essential in dictating the financial performance as well as the profitability of

microfinance institutions. This research corroborates evidence from previous research on the role of risk management that contributes to enhancing the financial status of MFIs, especially for developing economies such as Kenya. Microfinance banks, therefore, need to place emphasis on developing as well as implementing strong risk management structures to maximize profitability as well as ensure long-term financial stability.

Hypothesis 4 ($H_0$4): Corporate governance has no statistically significant moderating effect on the relationship between financial risk exposure and profitability of microfinance banks in Kenya.

The findings of the study were that in model II, corporate governance (β=-.221, $p<0.05$) although with a negative beta coefficient was significant. In model III, after the introduction of the interaction term alongside corporate governance as a moderator variable, both of them were insignificant ($p<0.05$). It then follows that corporate governance partially moderated the relationship between financial risk exposure and profitability. These findings are consistent with Kafidipe, Uwalomwa, Dahunsi and Okeme (2021) who studied the effect of corporate governance, risk management and financial performance. The study indicated that existence of a sound system of corporate governance in an organization contributes towards an improvement in profitability of the firm. It was also noted that the size of the board, its independence and board meetings were inversely linked with financial performance. The focus of the study conducted by Wau, Fau and Mendrofa (2023) was on financial risk, corporate governance and their effect on financial performance of banks in Indonesia. It was noted from analysis that managerial ownership exerted significant effect on financial performance. It was also disclosed that governance disclosures have significant effect on financial performance of an enterprise. In Kenya, Vincent and Evans (2018)

determined the effect of corporate governance on financial performance. The study noted that corporate governance and its elements covering board committees and skills were determined as instrumental predictors of financial performance of the firm. While board skills were positive predictors of performance, board committees were negative predictors.

4.6 Discussion of the Findings

4.6.1 Financial Risk Exposure and Profitability

Based on descriptive statistics, it was evident that that financial risk exposure and corporate governance collectively accounted for about 1% of the profits that were being generated by Microfinance institutions in Kenya. The finding agrees with Shair et al. (2019) who focused on Pakistan and determined the link between risk, competition and bank profitability. The study noted that operational risk positively affects profitability. In a study conducted by Ikponmwosa (2020) in Nigeria, the main emphasis was on risk management and profitability where it was evident that loan loss provision against total assets had positive implication on profitability. With a focus on oil marketing firms in Kenya, Njeru and No (2021) did a study on financial risk management and their profitability where credit risk was found to be significant. The study by Gakenia and Warui (2021) was an analysis of how financial risk management affected profitability taking evidence from deposit taking SACCOs in Nyeri. A positive relationship was noted. Mwanja (2021) determined how exposure on market and operational risks affected profitability of deposit taking SACCOs in Kenya and noted existence of significant interplay.

The findings were that credit risk exposure had significant effect on profitability of microfinance banks in Kenya. This finding concurs with Paul and Musiega (2020) who conducted a review of credit risk management practices and their effect on financial performance of MFIs in Kenya. It was evident after analysis that credit risk management practices were key predictors and

enablers of financial performance of MFIs. Enoch, Digil and Arabo (2021) determined how control of credit risk affected profitability of microfinance banks. Information for processing to generate findings was obtained from primary and secondary sources. The analysis indicated the need for microfinance banks to strengthen their measures in place for controlling credit risk. Natufe and Evbayiro-Osagie (2023) did an analysis of credit risk and its link with financial performance focusing on Nigerian banks. After information had been gathered and processed, it emerged that credit risk had significant effect on financial performance. Kosasia and Njeru (2023) focused on credit risk and the interplay with profitability focusing on microfinance entities in Kenyan context. It emerged after analysis that a number of financial challenges have been evident in the financial sector in Kenya.

It was shown that liquidity risk exposure has statistically significant effect on profitability of microfinance banks in Kenya. This finding agrees with Bwacha and Xi (2018) who conducted a study whose main focus was on determination of the implication that arises from liquidity and profitability nexus. It emerged after processing of the gathered information that loans to deposit as well as cash against deposit as indicators of liquidity risk were all not found to be significant. Msuku (2020) conducted a review of liquidity risk management and its nexus with financial performance of Tanzanian commercial banks. It was apparent after the gathered information had been processed that liquidity risk had a direct and significant effect on financial performance of banks in Tanzania. Onyango and Gatumo (2022) sought to provide the determination of liquidity risk and financial performance with emphasis on Kenya's investment banks. It was noted after analysis that although the value of liquidity risk was low, it was inversely connected with financial performance. Muriithi and Waweru (2017) did a study with focus in liquidity risk and the link it has with financial performance of banks in Kenyan context. It was noted after panel data analysis

that liquidity risk was negatively connected with financial performance of the financial entities. Otieno, Nyagol and Onditi (2016) conducted a study whose emphasis was on the link existing between liquidity risk management and financial performance with focus on microfinance entities in Kenyan context. It was apparent after gathering and processing of the generated information that liquidity risk management was a strong and significant predictor and enabler of financial performance of microfinance banks in Kenyan context.

The study indicated that operational risk exposure had significant effect on profitability of microfinance banks in Kenya. This finding is supported by Santika, Fakhrughozy, Nur and Lestari (2022) who conducted an analysis whose focus was on operational risk and the link it has as far as financial performance in the banking industry was concerned. The analysis was able to point out existence of significant connection in the variables that were covered. Falih, Kasim and Yaseen (2022) assessed operational risk management and its nexus with financial performance of commercial banks in Iraqi context. The analysis was able to demonstrate existence of significant and positive nexus between operational risk management and financial performance. Lyambiko (2015) did an analysis of the link between the practices entailed in operational risk management and financial performance of commercial banks in Tanzania. The analysis was able to register existence of significant link between credit and insolvency risk on financial performance. Toroitich (2018) did an appraisal of operational risk exposure in financial performance of Kenya's commercial banks. The analysis of the gathered information pointed out existence of a significant nexus between operational risk exposure and financial performance of the financial institutions. Mrindoko, Macha and Gwahula (2020) conducted a study on operational risk and its link with financial performance of banks in Tanzania. The analysis demonstrated that bank leverage ratio, cost to income ratio, operating expense ratio as well as portfolio concentration ratios were all

significantly linked with ROE although the same was inverse. Njuguna, Gakure, Waititu and Katuse (2017) conducted a review of strategies entailed in operational risk management and their nexus with growth of the microfinance sector in Kenyan context. It was also apparent that operational risks exposure had significant effect on financial performance. Ishmail, Memba and Muriithi (2023) conducted a study on operational risk and financial performance of microfinance entities in Kenyan context. The analyzed results were that operational risk had significant inverse effect on financial performance of microfinance banks pegged on their ROA although the same nexus with ROE was insignificant.

4.6.2 Financial Risk Exposure, Corporate Governance and Profitability

The study noted that corporate governance partially moderated the relationship between financial risk exposure and profitability. These findings are consistent with Kafidipe, Uwalomwa, Dahunsi and Okeme (2021) who studied the effect of corporate governance, risk management and financial performance. The study indicated that existence of a sound system of corporate governance in an organization contributes towards an improvement in profitability of the firm. It was also noted that the size of the board, its independence and board meetings were inversely linked with financial performance. The focus of the study conducted by Wau, Fau and Mendrofa (2023) was on financial risk, corporate governance and their effect on financial performance of banks in Indonesia. It was noted from analysis that managerial ownership exerted significant effect on financial performance. It was also disclosed that governance disclosures have significant effect on financial performance of an enterprise. In Kenya, Vincent and Evans (2018) determined the effect of corporate governance on financial performance. The study noted that corporate governance and its elements covering board committees and skills were determined as instrumental predictors of financial performance of the firm. While board skills were positive

predictors of performance, board committees were negative predictors. The implication of corporate governance as a moderator variable in the nexus between financial risk exposure and profitability is that strong corporate governance mechanisms provide assurance for firms to effectively manage their exposure to a range of risks they encounter in the course of their daily operations.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter is set out to provide summary of the analysed findings, conclusion and recommendations. Areas requiring further research are also pointed out in this chapter.

5.2 Summary of the Findings

The subsequent sections provide summary of the analysed findings guided by the specific objectives:

5.2.1 Credit Risk Exposure and Profitability

The initial hypothesis of the study, H01, stated that credit risk exposure has no statistically significant influence on the profitability of Kenyan microfinance banks. The findings of the study indicated a p-value of $p = 0.012$, less than 0.05, meaning that credit risk exposure actually exerts a significant influence on profitability. Following this, H01 was rejected, and the study concluded that credit exposure significantly impacts the profitability of Kenyan microfinance banks. This is consistent with the research of Paul and Musiega (2020), who established that credit risk management practices were essential predictors of Kenyan microfinance institutions' financial performance and profitability. In a similar context, Enoch, Digil, and Arabo (2021) stressed that controlling credit risk contributes to the improvements made by microfinance banks in their profitability, calling for stricter actions for credit risk control. In a similar direction, Natufe and Evbayiro-Osagie (2023) established that credit risk considerably impacts the finances of banks operating in Nigeria. Kosasia and Njeru (2023) further pointed out banking challenges specific to the Kenyan banking scene, specifically within the context of microfinance institutions, where credit risk being poorly managed contributed to enduring fiscal challenges.

5.2.2 Liquidity Risk Exposure and Profitability

The second hypothesis, H02, assumed that liquidity risk exposure does not have a statistically significant impact on the profitability of Kenya's microfinance banks. The evidence revealed a p-value of $p = 0.016$, less than the 0.05 threshold, thus rejecting H02. Hence, the study established that liquidity risk exposure significantly impacts the profitability of Kenya's microfinance banks. This agrees with the study by Msuku (2020), who established that liquidity risk management had a significant, direct relationship with commercial banks' financial performance in Tanzania. Further, Onyango and Gatumo (2022) established that liquidity risk, despite being low, had a negative relationship with Kenyan investment banks' financial performance. This implies that liquidity risk, left unmanaged, can compromise financial performance. Muriithi and Waweru (2017) further noted that liquidity risk had a negative impact on the financial performance of Kenyan banks, further confirming liquidity risk as a key driver of financial performance. In addition, Otieno, Nyagol, and Onditi (2016) established that liquidity risk management had a strong explanatory power for the financial performance of Kenyan microfinance institutions, underlining its significance within the sector.

5.2.3 Operational Risk Exposure and Profitability

The third hypothesis, H03, postulated that there is no statistically significant relationship between operational risk exposure and the profitability of microfinance banks in Kenya. The findings of the study indicated a p-value of $p = 0.000$, much less than the 0.05 significance level. Therefore, H03 was rejected, and the study concluded that operational risk exposure is significantly correlated with the profitability of microfinance banks in Kenya. This echoes the work of Santika, Fakhrughozy, Nur, and Lestari (2022), who established a significant relationship between operational risk management and the banks' financial performance. In like manner, Falih,

Kasim, and Yaseen (2022) established a positive relationship between operational risk management and the financial performance of Iraqi banks, meaning that minimizing operational risks is crucial for improving profitability. Lyambiko (2015) established a positive link between operational risk management and banks' financial performance in Tanzania. Toroitich (2018) indicated that operational risk exposure had a significant correlation with Kenyan commercial banks' financial performance, corroborating the findings of the current study. Mrindoko, Macha, and Gwahula (2020) indicated that elements such as the leverage of the banks, cost-to-income ratio, and operating expenses-to-total revenues ratio had a significant correlation with Return on Equity (ROE), though there were some factors that had a negative correlation with profitability. This indicates that operational risk, left unmanaged, can have a damaging effect on profitability. Njuguna, Gakure, Waititu, and Katuse (2017) established that operational risk exposure had a significant impact on Kenyan microfinance institutions' financial performance, further reinforcing the need for operational risk control. Ishmail, Memba, and Muriithi (2023) concluded that operational risk had a detrimental impact on Kenyan microfinance banks' Return on Assets (ROA), supporting the argument that operational risks can influence profitability based on financial performance.

5.2.4 Financial Risk Exposure, Corporate Governance and Profitability

The fourth hypothesis, H04, posited that corporate governance does not have any statistically significant moderating effect on the relationship between financial risk exposure and profitability for Kenyan microfinance banks. The evidence revealed that, for model II, corporate governance ($\beta = -0.221$, $p < 0.05$) had a negative effect on profitability. But, for model III, where the interaction term with corporate governance as the moderator variable was included, both corporate governance ($p > 0.05$) and the interaction term ($p > 0.05$) were insignificant. Hence, the

study deduced that corporate governance partly moderated the relationship between financial risk exposure and profitability. These are consistent with Kafidipe, Uwalomwa, Dahunsi, and Okeme (2021), who noted that good corporate governance practices had the effect of enhancing profitability. Furthermore, the study discovered that board size, board independence, and board meetings were inversely correlated with financial performance. On the other hand, the study by Wau, Fau, and Mendrofa (2023) discovered that governance disclosures and managerial ownership made a difference for financial performance, meaning that keen governance practices can enhance profitability. Vincent and Evans (2018) studied the influence of corporate governance on the financial performance of Kenya and discovered that factors like board committees and skills determined the performance. Although board skills were positive predictors of financial performance, board committees acted as negative predictors, meaning that the relationship between corporate governance and financial performance is intricate, with dependence on the context.

5.3 Conclusion

The research established that exposure to financial risk impacts the profitability of the Kenyan microfinance banks profoundly, with credit risk, liquidity risk, and operating risk all being integral factors determining their profitability:

5.3.1 Credit Risk Exposure and Profitability

The initial hypothesis, H01, assumed that credit risk exposure does not have any statistically significant influence on profitability. From the findings, the research established that credit risk exposure significantly impacts the profitability of Kenyan microfinance banks. Proper credit risk management is necessary for enhancing profitability within the banks.

5.3.2 Liquidity Risk Exposure and Profitability

The second hypothesis, H02, posited that liquidity risk exposure will not have a statistically significant impact on profitability. The research established that liquidity risk exposure indeed influences the profitability of microfinance banks in Kenya significantly, as revealed by the significance of liquidity risk management for its role in improving financial performance.

5.3.3 Operational Risk Exposure and Profitability

H03, stated that there is no statistically significant relationship between operational risk exposure and profitability. The research revealed that operational risk exposure had an impact on profitability, with the need for the microfinance banks to deal effectively with the operational risks in order to ensure profitability.

5.3.4 Financial Risk Exposure, Corporate Governance and Profitability

Lastly, the research revealed that corporate governance moderated the influence of financial risk exposure on profitability, although only partially. Corporate governance practices initially had a negative influence, which proved statistically significant in model II. However, as soon as the interaction term was included, corporate governance practices turned out not to be statistically significant. This means that, though corporate governance contributes to affecting profitability, its moderating impact is weaker than anticipated. Hence, microfinance organizations need to concentrate on improving corporate governance practices for higher financial viability, subject to the condition that it operates alongside other drivers, such as risk handling.

5.4 Theoretical Contribution of the Study

The findings of this study indicate that in deed, financial institutions are exposed to a number of risks which affect their profitability potential. This risks are as per the modern portfolio theory that helps investors to determine their expected returns and risks on investments. The theory

regards risk as an inevitable thing that investors should seek to minimize through diversification. The theory indicates that investors can minimize their exposure to risks through diversification of the components in the portfolio. Diversification is a relevant strategy that helps financial institutions like commercial banks to minimize their exposure to credit risk and other financial risks which arise from their daily operations. By expanding and diversifying their loan portfolio, this theory allows financial institutions to minimize the credit risk exposure and thus maximizing returns generated on lending activities.

This study also contributes towards financial intermediation theory that regards the central role played by financial institutions as intermediaries in an economy. The theory indicates that commercial banks effectively leverage this intermediation role by mobilizing deposits which are used for lending purpose to customers. Thus, deposits help financial institutions to beef up its available capital that is needed by customers in form of loans for the purpose of investment and capital creation. The theory further argues that financial intermediaries like commercial banks largely exist in an economy for reduction in transaction costs since they share relevant information to both borrowers in an economy. It is the responsibility and obligation of financial intermediaries to provide more information on customers in regard to the various products in place and their usefulness.

The finding on liquidity risk agreed with the liquidity preference theory that provides three reasons why institutions and people hold money to maintain their liquidity positions. Under this theory, liquidity is critical in allowing financial institutions to attain their precautions, for daily transaction and for speculative purpose. Financial institutions are required to be liquid so that they can carry out the daily operations and transactions. This theory can aid in providing more

information in regard to credit terms, interest rates and the levels of liquidity that customers require in determination of probable risk exposure.

The findings also agree with agency theory which is the foundation of modern-day corporate governance mechanisms in organization. The theory establishes three key actors in an organization as the management, shareholders and the board of directors. Each of these parties has a specific role to play in ensuring successful operation of the firm. In any firm, each of the said three parties has its own unique roles and responsibility to play to ensure smooth running. For instance, while the shareholders are owners of the firm responsible for supplying the funds needed to operate optimally, managers have a role of making decisions that affect overall profitability of the firm. In doing so, they aid in maximization of the wealth of the owners. On the other hand, the board of directors has a role of monitoring and providing oversight on the actions undertaken by managers in the course of the tenure in the firm. This is aimed at protecting the interests of the shareholders.

5.5 Recommendations of the Study

5.5.1 Policy Recommendations

It emerged that financial risk exposure significant predicted profitability of microfinance banks. Thus, the study recommends that policy makers at the Central Bank of Kenya should design and formulate effective policies to around financial risks to improve profitability of these institutions. CBK should create sound policies that support effective corporate governance among microfinance institutions in Kenya. Policy makers at CBK should enhance governance guidelines that shapes operations of microfinance institutions in Kenya.

5.5.2 Recommendations for Practice

Credit risk exposure was noted to have significant effect on profitability of microfinance institutions. Based on this finding, the study recommends that credit risk managers working with microfinance institutions in Kenya should put in place sound credit risk management policies and mechanisms that contribute towards reduction of non-performing loans and thus profitability.

The study established liquidity risk as a significant enabler and predictor of profitability. In view of this finding, it is recommended that marketing managers working with microfinance institutions in Kenya should rigorously invest in marketing and promotion efforts to grow and mobilize more deposits so as to improve liquidity positions of their financial institutions.

The findings of the study were that operational risk exposure significantly affected profitability. Hence, this study recommends that managers working with microfinance institutions in Kenya should minimize their operating expenses while maximizing operating revenues to improve the amount of profits generated.

The findings were that corporate governance partially moderated the relationship between financial risk exposure and profitability. Thus, this study recommends that the owners of the microfinance institutions in Kenya should put in place strong corporate governance mechanisms including increasing board independence, reward and remuneration of managers working with microfinance institutions in Kenya. There is need for managers working with microfinance institutions in Kenya to adopt governance-based risk oversight.

5.5.3 Recommendations for Academia

The main focus of this study was on microfinance institutions in Kenya. More specifically, the study covered 14 microfinance institutions in Kenya. The study was confined to secondary

data that was gathered on a period of 5 years (2019-2023). Thus, future studies should be conducted covering other financial institutions like the deposit taking SACCOs among other institutions. Aside from use of profitability as the dependent variable, future studies should be conducted with other dependent variables like financial stability or sustainability.

5.6 Limitations of the Study

This study was limited to profitability as a dependent variable. In measuring profitability, ROE was used as an indicator. In practice, there are a range of indicators that can be adopted as proxies of profitability including ROE and return on investment. The small sample size of 14 microfinance institutions was a limitation in this study as it limited generalization of the findings to the larger financial sector in Kenya.

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APPENDICES

Appendix I: Letter of Introduction

KCA UNIVERSITY

BOARD OF POSTGRADUATE STUDIES

KCAU/BPS/MAY.24/6 *Date: Thursday, June 06, 2024*

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

RE: GLADYS MUSENYA KAMWILWA REG NO: U102628

It is my distinct pleasure to introduce to you Gladys Musenya Kamwilwa who is a student in our institution pursuing a Master of Science in Commerce- Finance and Investments Degree in the School of Business.

Gladys is conducting a research on a topic titled: ***"Financial Risk Exposure, Corporate Governance and Profitability of Microfinance Banks in Kenya."*** which is part of the requirements of the program she is pursuing. The research as well as the data procured thereof shall be used for academic purposes only.

Any assistance accorded to her is highly appreciated.

In case of further inquiry, do not hesitate to contact the undersigned.

Yours faithfully,

DR. JACKSON NDOLO
DIRECTOR, BOARD OF POST GRADUATE STUDIES

Appendix II: List of Microfinance banks in Kenya

1. Branch Microfinance Bank Limited
2. Caritas Microfinance Bank Limited
3. Choice Microfinance Bank Limited
4. Daraja Microfinance Bank Limited
5. Faulu Microfinance Bank Limited
6. Kenya Women Microfinance Bank PLC
7. LOLC Microfinance Bank PLC
8. Maisha Microfinance Bank Limited
9. Muungano Microfinance Bank Limited
10. Rafiki Microfinance Bank Limited
11. Salaam Microfinance Bank Limited
12. SMEP Microfinance Bank Limited
13. Sumac Microfinance Bank Limited
14. U & I Microfinance Bank Limited

Source: (CBK, 2022)

Appendix III: Data Collection Sheet

Year	Total loans	Total deposits	Operating expenses	Total equity	Net income	Independent directors in risk committee	Total directorship	Cash	Non-performing loans

Appendix IV: Raw Data Collection

Year	Name of Microfinance	Credit risk exposure	Liquidity risk exposure	Operational risk exposure	Financial risk exposure	Corporate governance	Interaction term	Profitability
2019	Branch Microfinance Bank Limited	0.185589	0.1754277	5.3984157	0.2907186	0.0510001	0.0148267	0.0251620
2019	Caritas Microfinance Bank Limited	0.058791 8	0.1622170	5.4141340	0.2480105	0.0402315	0.0099778	0.0261408
2019	Choice Microfinance Bank Limited	0.089369 2	0.1715610	5.5440656	0.3001699	0.0514974	0.0154580	0.0338154
2019	Daraja Microfinance Bank Limited	0.044309 2	0.1302649	5.3240313	0.2764106	0.0360066	0.0099526	0.0212267
2019	Faulu Microfinance Bank Limited	0.216768 2	0.1378305	5.5794966	0.4351847	0.0599817	0.0261031	0.0364936
2019	Kenya Women Microfinance Bank PLC	0.116034 4	0.1604468	5.7031004	0.3516730	0.0564248	0.0198431	0.0508807

2019	LOLC Microfinance Bank PLC	0.2984611	0.1817462	4.8415597	0.0501625	0.0091168	0.0004573	0.0054612
2019	Maisha Microfinance Bank Limited	0.1361086	0.1907492	5.2151509	0.2763456	0.0527127	0.0145669	0.0156113
2019	Muungano Microfinance Bank Limited	0.0947693	0.1492356	5.3876105	0.2436320	0.0363586	0.0088581	0.0224413
2019	Rafiki Microfinance Bank Limited	0.0004405	0.1503322	4.7481570	0.0019007	0.0002857	0.0000005	0.0048256
2019	Salaam Microfinance Bank Limited	0.0343575	0.1435705	4.8330514	0.1478261	0.0212235	0.0031374	0.0051056
2019	SMEP Microfinance Bank Limited	0.0510528	0.1550590	4.6732421	0.3953743	0.0613063	0.0242390	0.0042453
2019	Sumac Microfinance Bank Limited	0.2190308	0.1658147	4.8151658	0.2156175	0.0357525	0.0077089	0.0064741
20	U & I Microfinance Bank Limited	0.0108775	0.1715778	4.9185912	0.2724780	0.0467512	0.0127387	0.0085427

19								
2020	Branch Microfinance Bank Limited	0.0653990	0.1475780	5.3115314	0.2285204	0.0337246	0.0077068	0.0161821
2020	Caritas Microfinance Bank Limited	0.1181538	0.1899752	5.0142012	0.3073514	0.0583891	0.0179460	0.0085817
2020	Choice Microfinance Bank Limited	0.1392251	0.2824538	4.4715704	0.0787712	0.0222492	0.0017526	0.0022453
2020	Daraja Microfinance Bank Limited	0.3799278	0.0955227	5.0611281	0.0147326	0.0014073	0.0000207	0.0128852
2020	Faulu Microfinance Bank Limited	0.2687595	0.1994353	4.6795642	0.2291317	0.0456970	0.0104706	0.0041943
2020	Kenya Women Microfinance Bank PLC	0.2690025	0.1768181	4.2153203	0.0327248	0.0057863	0.0001894	0.0008737
2020	LOLC Microfinance Bank PLC	0.2636735	0.1743927	3.9743735	0.0638686	0.0111382	0.0007114	0.0010150

2020	Maisha Microfinance Bank Limited	0.1338286	0.1336634	4.3506743	0.0740741	0.0099010	0.0007334	0.0021172
2020	Muungano Microfinance Bank Limited	0.3715067	0.2283134	4.1965630	0.1364903	0.0311626	0.0042534	0.0010434
2020	Rafiki Microfinance Bank Limited	0.3583285	0.2016063	4.0864310	0.0642276	0.0129487	0.0008317	0.0011814
2020	Salaam Microfinance Bank Limited	0.1089795	0.1316476	4.1399420	0.5327463	0.0701348	0.0373640	0.0011234
2020	SMEP Microfinance Bank Limited	0.2554994	0.1506290	4.1674650	0.1363431	0.0205372	0.0028001	0.0016214
2020	Sumac Microfinance Bank Limited	0.1784435	0.2258626	4.3503062	0.1573123	0.0355310	0.0055895	0.0020669
2020	U & I Microfinance Bank Limited	0.6851835	0.2277417	3.7188337	0.0847315	0.0192969	0.0016351	0.0005128
20	Branch Microfinance Bank Limited	0.0004115	0.2954637	3.9965117	0.0122825	0.0036290	0.0000446	0.0009135

21								
2021	Caritas Microfinance Bank Limited	0.037052	0.1980889	4.0197392	0.0771828	0.0152891	0.0011801	0.0010432
2021	Choice Microfinance Bank Limited	0.1004483	0.1040636	4.1749897	0.0263327	0.0027403	0.0000722	0.0016671
2021	Daraja Microfinance Bank Limited	0.2382548	0.3826102	3.7482656	0.0233318	0.0089270	0.0002083	0.0002279
2021	Faulu Microfinance Bank Limited	0.2115997	0.1611430	4.4338658	0.1723035	0.0277655	0.0047841	0.0027934
2021	Kenya Women Microfinance Bank PLC	0.2964581	0.1740739	4.2312911	0.2097808	0.0365173	0.0076606	0.0015477
2021	LOLC Microfinance Bank PLC	0.0557691	0.1853413	4.3196265	0.0160248	0.0029701	0.0000476	0.0018019
2021	Maisha Microfinance Bank Limited	0.7016514	0.1008047	4.1435768	0.1974341	0.0199023	0.0039294	0.0012556

2021	Muungano Microfinance Bank Limited	0.1801787	0.1563665	5.4550353	0.2133052	0.0333538	0.0071145	0.0251490
2021	Rafiki Microfinance Bank Limited	0.2877705	0.1603308	5.4340609	0.2297114	0.0368298	0.0084602	0.0219541
2021	Salaam Microfinance Bank Limited	0.0481605	0.1782175	5.5830060	0.9073534	0.1617062	0.1467247	0.0336618
2021	SMEP Microfinance Bank Limited	0.0445212	0.1375493	5.3608300	0.2277090	0.0313212	0.0071321	0.0210267
2021	Sumac Microfinance Bank Limited	0.7571635	0.1523270	5.6089558	0.3729202	0.0568058	0.0211840	0.0352103
2021	U & I Microfinance Bank Limited	0.1000090	0.1601623	5.7447857	0.3087054	0.0494430	0.0152633	0.0518854
2022	Branch Microfinance Bank Limited	0.8214460	0.1681076	4.8391700	0.1181082	0.0198549	0.0023450	0.0055903
20	Caritas Microfinance Bank Limited	0.0914149	0.1903965	5.2647069	0.2145957	0.0408583	0.0087680	0.0156542

2022								
2022	Choice Microfinance Bank Limited	0.1051775	0.1592257	5.4314956	0.1913310	0.0304648	0.0058289	0.0224520
2022	Daraja Microfinance Bank Limited	0.1268647	0.1562621	4.7339272	0.0041332	0.0006459	0.0000027	0.0037216
2022	Faulu Microfinance Bank Limited	0.0470959	0.1603651	4.7932804	0.0394460	0.0063258	0.0002495	0.0043494
2022	Kenya Women Microfinance Bank PLC	0.0470446	0.1204542	4.7279965	0.2227054	0.0268258	0.0059743	0.0051496
2022	LOLC Microfinance Bank PLC	0.1251966	0.1875769	4.8833093	0.1378853	0.0258641	0.0035663	0.0000000
2022	Maisha Microfinance Bank Limited	0.0160504	0.1862023	4.9828680	0.2822905	0.0525631	0.0148381	0.0067844
2022	Muungano Microfinance Bank Limited	0.2584834	0.1380530	5.3791387	0.1694049	0.0233869	0.0039618	0.0180363

2022	Rafiki Microfinance Bank Limited	0.1397479	0.2054015	4.9922530	0.3158547	0.0648770	0.0204917	0.0075876
2022	Salaam Microfinance Bank Limited	0.1845716	0.3116042	4.4413494	0.0279940	0.0087230	0.0002442	0.0017848
2022	SMEP Microfinance Bank Limited	0.1981495	0.0641065	5.0411636	0.1049943	0.0067308	0.0007067	0.0111446
2022	Sumac Microfinance Bank Limited	0.0965597	0.2052763	4.7530542	0.2301075	0.0472356	0.0108693	0.0036879
2022	U & I Microfinance Bank Limited	0.1638696	0.1795343	4.2127202	0.0197952	0.0035539	0.0000704	0.0007366
2023	Branch Microfinance Bank Limited	0.2119690	0.1844670	3.9795939	0.0545455	0.0100618	0.0005488	0.0009111
2023	Caritas Microfinance Bank Limited	0.1007446	0.1273988	4.3945217	0.0642405	0.0081842	0.0005258	0.0023223
20	Choice Microfinance Bank Limited	0.1966402	0.2687729	4.1089369	0.2206138	0.0592950	0.0130813	0.0006345

2023								
2023	Daraja Microfinance Bank Limited	0.072956	0.184237	4.1603184	0.067167	0.012347	0.000831	0.001296
2023	Faulu Microfinance Bank Limited	0.125484	0.106566	4.0471970	0.326599	0.141376	0.046171	0.000803
2023	Kenya Women Microfinance Bank PLC	0.116769	0.150287	4.1987395	0.096000	0.014427	0.001385	0.001546
2023	LOLC Microfinance Bank PLC	0.000847	0.215970	4.4147227	0.151283	0.032672	0.004942	0.002201
2023	Maisha Microfinance Bank Limited	0.074251	0.226908	3.7093548	0.035284	0.008006	0.000282	0.000467
2023	Muungano Microfinance Bank Limited	0.217078	0.286281	4.0243625	0.038309	0.010967	0.000420	0.000879
2023	Rafiki Microfinance Bank Limited	0.149007	0.207090	4.0126264	0.025328	0.005245	0.000132	0.000928

2023	Salaam Microfinance Bank Limited	0.2475829	0.0984447	4.2395497	0.1263897	0.0124424	0.0015726	0.0017415
2023	SMEP Microfinance Bank Limited	0.0536511	0.3323597	3.8132473	0.0064755	0.0021522	0.0000139	0.0000352 8
2023	Sumac Microfinance Bank Limited	0.0262232	0.1411100	4.4957663	0.0574791	0.0081109	0.0004662	0.0030735
2023	U & I Microfinance Bank Limited	0.1530835	0.1519136	4.2720274	0.1439127	0.0218623	0.0031463	0.0015000

Appendix V: Data Inputted in SPSS

Credit Risk exposure	Liquidity risk exposure	Operational Risk Exposure	Financial risk exposure	Corporate Governance	Interaction term	Profitability
0.19	0.18	5.4	0.29	0.05	0.01	0.03
0.06	0.16	5.41	0.25	0.04	0.01	0.03
0.09	0.17	5.54	0.3	0.05	0.02	0.03
0.04	0.13	5.32	0.28	0.04	0.01	0.02
0.22	0.14	5.58	0.44	0.06	0.03	0.04
0.12	0.16	5.7	0.35	0.06	0.02	0.05
0.3	0.18	4.84	0.05	0.01	0	0.01
0.14	0.19	5.22	0.28	0.05	0.01	0.02
0.09	0.15	5.39	0.24	0.04	0.01	0.02
0	0.15	4.75	0	0	0	0
0.03	0.14	4.83	0.15	0.02	0	0.01
0.05	0.16	4.67	0.4	0.06	0.02	0
0.22	0.17	4.82	0.22	0.04	0.01	0.01
0.01	0.17	4.92	0.27	0.05	0.01	0.01
0.07	0.15	5.31	0.23	0.03	0.01	0.02
0.12	0.19	5.01	0.31	0.06	0.02	0.01
0.14	0.28	4.47	0.08	0.02	0	0
0.38	0.1	5.06	0.01	0	0	0.01
0.27	0.2	4.68	0.23	0.05	0.01	0
0.27	0.18	4.22	0.03	0.01	0	0
0.26	0.17	3.97	0.06	0.01	0	0
0.13	0.13	4.35	0.07	0.01	0	0
0.37	0.23	4.2	0.14	0.03	0	0
0.36	0.2	4.09	0.06	0.01	0	0
0.11	0.13	4.14	0.53	0.07	0.04	0
0.26	0.15	4.17	0.14	0.02	0	0

0.18	0.23	4.35	0.16	0.04	0.01	0
0.69	0.23	3.72	0.08	0.02	0	0
0	0.3	4	0.01	0	0	0
0.04	0.2	4.02	0.08	0.02	0	0
0.1	0.1	4.17	0.03	0	0	0
0.24	0.38	3.75	0.02	0.01	0	0
0.21	0.16	4.43	0.17	0.03	0	0
0.3	0.17	4.23	0.21	0.04	0.01	0
0.06	0.19	4.32	0.02	0	0	0
0.7	0.1	4.14	0.2	0.02	0	0
0.18	0.16	5.46	0.21	0.03	0.01	0.03
0.29	0.16	5.43	0.23	0.04	0.01	0.02
0.05	0.18	5.58	0.91	0.16	0.15	0.03
0.04	0.14	5.36	0.23	0.03	0.01	0.02
0.76	0.15	5.61	0.37	0.06	0.02	0.04
0.1	0.16	5.74	0.31	0.05	0.02	0.05
0.82	0.17	4.84	0.12	0.02	0	0.01
0.09	0.19	5.26	0.21	0.04	0.01	0.02
0.11	0.16	5.43	0.19	0.03	0.01	0.02
0.13	0.16	4.73	0	0	0	0
0.05	0.16	4.79	0.04	0.01	0	0
0.05	0.12	4.73	0.22	0.03	0.01	0.01
0.13	0.19	4.88	0.14	0.03	0	0
0.02	0.19	4.98	0.28	0.05	0.01	0.01
0.26	0.14	5.38	0.17	0.02	0	0.02
0.14	0.21	4.99	0.32	0.06	0.02	0.01
0.18	0.31	4.44	0.03	0.01	0	0
0.2	0.06	5.04	0.1	0.01	0	0.01
0.1	0.21	4.75	0.23	0.05	0.01	0
0.16	0.18	4.21	0.02	0	0	0

0.21	0.18	3.98	0.05	0.01	0	0
0.1	0.13	4.39	0.06	0.01	0	0
0.2	0.27	4.11	0.22	0.06	0.01	0
0.07	0.18	4.16	0.07	0.01	0	0
0.13	0.11	4.05	0.33	0.14	0.05	0
0.12	0.15	4.2	0.1	0.01	0	0
0	0.22	4.41	0.15	0.03	0	0
0.07	0.23	3.71	0.04	0.01	0	0
0.22	0.29	4.02	0.04	0.01	0	0
0.15	0.21	4.01	0.03	0.01	0	0
0.25	0.1	4.24	0.13	0.01	0	0
0.05	0.33	3.81	0.01	0	0	0
0.03	0.14	4.5	0.06	0.01	0	0
0.15	0.15	4.27	0.14	0.02	0	0

Appendix VI: SPSS Logs

Warning # 849 in column 23. Text: en_KE
The LOCALE subcommand of the SET command has an invalid parameter. It could not be mapped to a valid backend locale.

Your temporary usage period for IBM SPSS Statistics will expire in 4133 days.

```
GET
  FILE='C:\Users\ADMIN\Desktop\Desk when CD fail reading 2024\glad data.sav'.
DATASET NAME DataSet1 WINDOW=FRONT.
DESCRIPTIVES VARIABLES=VAR00001 VAR00002 VAR00003 VAR00004 VAR00005
VAR00006 VAR00007
  /STATISTICS=MEAN STDDEV MIN MAX.
```

Descriptives

Notes

Output Created		06-SEP-2024 13:54:21
Comments		
Input	Data	C:\Users\ADMIN\Desktop\Desk when CD fail reading 2024\glad data.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>

	Split File	<none>
	N of Rows in Working Data File	70
Missing Value Handling	Definition of Missing	User defined missing values are treated as missing.
	Cases Used	All non-missing data are used.
Syntax		DESCRIPTIVES VARIABLES=VAR00001 VAR00002 VAR00003 VAR00004 VAR00005 VAR00006 VAR00007 /STATISTICS=MEAN STDDEV MIN MAX.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.04

[DataSet1] C:\Users\ADMIN\Desktop\Desk when CD fail reading 2024\glad data.sav

```
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT VAR00007
```

/METHOD=ENTER VAR00001 VAR00002 VAR00003.

Regression

Notes

Output Created		06-SEP-2024 13:54:39
Comments		
Input	Data	C:\Users\ADMIN\Desktop\Desk when CD fail reading 2024\glad data.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	70
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.

Syntax		REGRESSION /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT VAR00007 /METHOD=ENTER VAR00001 VAR00002 VAR00003.
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.11
	Memory Required	3584 bytes
	Additional Memory Required for Residual Plots	0 bytes

REGRESSION
/MISSING LISTWISE
/STATISTICS COEFF OUTS R ANOVA CHANGE

/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT VAR00007
/METHOD=ENTER VAR00004
/METHOD=ENTER VAR00005
/METHOD=ENTER VAR00006.

Regression

Notes

Output Created		06-SEP-2024 13:55:21
Comments		
Input	Data	C:\Users\ADMIN\Desktop\Desk when CD fail reading 2024\glad data.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	70
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.

	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA CHANGE /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT VAR00007 /METHOD=ENTER VAR00004 /METHOD=ENTER VAR00005 /METHOD=ENTER VAR00006.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.03
	Memory Required	3824 bytes
	Additional Memory Required for Residual Plots	0 bytes

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Financial risk exposure[b]	.	Enter
2	Corporate Governance[b]	.	Enter
3	Interaction term[b]	.	Enter

a. Dependent Variable: Profitability

b. All requested variables entered.