

**THE MODERATING EFFECT OF CREDIT RISK ON THE RELATIONSHIP  
BETWEEN FINANCING STRUCTURE AND FINANCIAL PERFORMANCE  
OF MICROFINANCE INSTITUTIONS IN KENYA**

**BY**

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## DECLARATION

### Declaration by the Candidate

I declare that this project is my original work and has not been presented to any other institution of learning. No part of this project may be reproduced without prior or express permission of the author and/or Moi University.

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## **DEDICATION**

I dedicate this work to my parents Mr. & Mrs. Peter Kimani for the unrelenting financial support. Secondly my dearest family members Elizabeth Njeri , Loise Wanjiru and Peter Jayden Munene for their continuous encouragement , prayers and support in my masters' journey and lastly to my best friend Teresiah Mbagathi for all the moral support accorded.

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## ABSTRACT

Microfinance institutions provide loans to low-income borrowers including SME's who traditionally lack access to mainstream sources of finance from Banking Institutions as they are considered as high-risk borrowers. Despite the key role the MFIs plays in the economy – in poverty eradication and entrepreneurial activities, these firms 'reported poor financial performance .The decline is caused by declining financial support from donors and this has prompted them to opt for debt and the credit risk associated with it. Prior Studies claimed that financing structure affects financial performance however the findings are not conclusive therefore moderating effect of credit risk. The general objective of the study was to examine the moderating effect of credit risk on the relationship between financing structure and financial performance among microfinance institutions in Kenya. The specific objectives were to establish the effect of equity capital, debt capital, retained earnings and deposits on financial performance of MFI. The study also sought to investigate the moderating effect of credit risk on the relationship between: equity capital, debt capital, deposits and retained earnings on financial performance. This study was guided by Pecking order theory, The Agency Theory and The Modigliani-Miller Theorem. The study adopted longitudinal and explanatory research design. The target population consisted of all 53 Microfinance Institutions in Kenya for the period between 2010 and 2019. However, after applying an inclusion/exclusion criterion the final sample comprised of 31 Microfinance Institutions in Kenya. Data was extracted from World bank MIX market database and the annual reports of the selected microfinance banks. The data was analyzed through descriptive and inferential statistics. The study found out that equity capital ( $\beta=0.252$ ,  $\rho<0.05$ ), debt capital ( $\beta=0.383$ ,  $\rho<0.05$ ), retained earnings ( $\beta=0.339$ ,  $\rho<0.05$  and deposits ( $\beta=0.225$ ,  $\rho<0.05$ ) had a significant and positive effect on financial performance of microfinance institutions in Kenya. Moreover, the study found that credit risk significantly moderates the relationship between equity capital ( $\beta= 0.6994$ ,  $\rho<0.05$ ), debt capital ( $\beta=-0.878$   $\rho<0.05$ ), retained earnings ( $\beta=0.9128$ ,  $\rho<0.05$ ), deposits ( $\beta=0.6036$ ,  $\rho<0.05$ ) and financial performance. This study's findings are supported by the pecking order theory, emphasizing the hierarchical order of financing to financial performance. Therefore, the study concluded that equity capital, debt capital, retained earnings and deposits had a significant effect on financial performance. Further, the study showed that credit risk significantly moderate the relationship between financing equity capital, debt capital, retained earnings and deposits a contribution to the existing literature. This study contributes to the pecking order theory emphasizing the hierarchical order of finance to financial performance. The study recommends that microfinance institutions should mobilize on minimizing credit risk by adopting more stringent lending guidelines and cost saving measures thus ultimately improving performance.

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**ABBREVIATIONS AND ACRONYMS**

<b>ALS</b>	Average Loan Size
<b>AMFI</b>	Association of Microfinance Institutions
<b>CBK</b>	Central Bank of Kenya
<b>DBT</b>	Debt
<b>DEP</b>	Deposits
<b>EQT</b>	Equity
<b>FS</b>	Firm size
<b>FSS</b>	Financial self-sufficiency
<b>MFIs</b>	Microfinance institutions
<b>MIX</b>	Microfinance information Exchange
<b>OSS</b>	Operation self –sufficiency
<b>SSA</b>	Sub-Saharan Africa
<b>YIELD</b>	Yield on Gross Loan Portfolio

## OPERATIONAL DEFINITION OF TERMS

- Credit Risk** is the risk that a borrower or debtor will fail to fulfill their contractual obligations by failing to repay a loan or meet other credit-related obligations.
- Debt capital** These are borrowed funds that must be repaid at a later date. They may be long term or short term.
- Deposits** Savings made by the MFIs clients to their accounts especially the underprivileged population.
- Equity capital** refers to the portion of a company's financing that comes from the sale of ownership shares to investors. In other words, equity capital represents the ownership stake held by shareholders in a company.
- Financial Performance** refers to the assessment and measurement of how well a business or organization is performing in terms of its financial activities and outcomes.
- Financial self-sufficiency** refers to the ability of an organization, often a non-profit or social enterprise, to cover its operational expenses and financial needs without relying heavily on external funding sources.
- Financial structure** refers to the composition of a company's capital, including the mix of different sources of funding that the company uses to support its operations, investments, and growth. It involves understanding how a company finances its assets and

activities through a combination of equity (ownership) and debt (borrowed funds).

**Microfinance institutions:** Financial institutions that are financial organizations that provide financial services, such as small loans, savings accounts, and insurance, to low-income individuals or communities who are typically excluded from traditional banking systems.

**Operational self-sufficiency** defined as the capacity of microfinance institutions to cover the cost of operations independently from generated income without donor support.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.0 Overview**

This chapter discusses the background of the study, statement of the problem, objectives of the study, research hypotheses, significance, scope and limitations of the study.

#### **1.1 Background of the Study**

According to CBS (1999), micro finance institutions, often known as MFIs, are organizations that serve low-income households, micro companies, small scale farmers, and other individuals who do not have access to standard banking services by engaging in relatively small financial transactions utilizing a variety of different approaches. According to Adoyo (2013), they offer financial services to members of the under-banked and unbanked population that have limited access to financial services. Financial inclusion and employment creation are two areas that benefit from the work of microfinance institutions. The favorable effects that microfinance institutions have on the socioeconomic welfare of individuals with limited resources can only be maintained if the institutions are able to achieve an acceptable level of success both financially and in terms of outreach (Azad *et al.*, 2016). Hence, to achieve both social (serving the poor) and economic goals (maximizing shareholder wealth) MFIs must be financially performing.

A company's ability to generate revenues from its principal mode of operation and make effective use of its assets is what constitutes a measure of its financial performance. It is a measurement of the overall financial health of the company over a specified time period. According to Moullin (2003), the performance of an organization is defined as

the quality of the management of the organization as well as the value that the business provides for customers and other stakeholders. The ability of an organization to gain and manage resources in a variety of various ways in order to establish a competitive advantage is one of the factors that determines the financial performance of microfinance institutions. According to Iswatia and Anshoria (2007), the profitability of a company may be evaluated using a number of different metrics, including the growth of its dividends, the turnover of its sales, its asset base, and the amount of capital it puts to use.

According to Liargovas and Skandalis (2008), there is still a lot of dispute in a variety of fields about how the performance of enterprises should be measured and the elements that affect the financial success of companies. The effectiveness of a microfinance institution can primarily be evaluated based on its performance, outreach, portfolio quality, and efficiency. The performance in these areas can be broken down into two categories: social performance and financial performance. An MFI's operational self-sufficiency and financial self-sufficiency are the two phases via which an evaluation of an MFI's financial performance can be carried out. Operational self-sufficiency is defined as the capacity of a microfinance institution (MFI) to pay the costs of its operations from its revenue from operations, irrespective of the possibility that the MFI gets any form of subsidy for those costs (Khan & Butt, 2017). On the other side, the term "financial self-sufficiency" refers to an institution's potential to pay both operating and financing costs, in addition to any other form of subsidies that is priced at market rates. This ability is referred to as "self-sufficiency" in this context. According to the definition of Performance offered by the MIX Market, in compliance with the An MFI is said to be operationally sustainable after its operational support system (OSS) has reached 100%, and it is regarded to be financially sustainable once it has reached 110%,



according to Bogan et al., (2007). The ratio of an organization's total financial income to the sum of its financial expenses, operating expenses, and loan loss provision expenditure is used to calculate the operational performance of an organization (OSS).

Researchers and those who influence policy have become more interested in the financial performance of microfinance organizations as a result of the role these institutions play in the creation of jobs, the availability of capital, and the reduction of poverty. Many microfinance institutions (MFIs) in Sub-Saharan Africa (SSA) have been shown in previous research to be undercapitalized and to have poor performance. For example, the failure of Pride Zambia in 2009 and the failure of over 30 microfinance institutions in Ghana in 2013 pushed the question of the financial performance of the microfinance business to the forefront of a wider public discourse Chikalipah, (2017). In addition, there is evidence that the survival of many MFIs in SSA still depends on money from donors, which confirms that these institutions are in a condition of financial instability (Mia, 2017). According to the findings of a study that looked at the factors that contributed to the financial performance of seven different microfinance institutions in Kenya over the course of five years, from 2011 to 2015, a positive and statistically significant relationship exists between operational effectiveness, adequate capital, company size and the financial performance of microfinance banks in Kenya. This study was conducted between 2011 and 2015.

The research was carried out in the country of Kenya. On the other hand, the research showed that there is a weakly negative association between liquidity risk and credit risk and the financial performance of microfinance banks in Kenya. This finding was not statistically significant. As a result of this, the researchers arrived at the conclusion that

the financial performance of microfinance banks in Kenya is clearly linked to operational efficiency, capital adequacy, firm size, and company size.

The declining donor support and subsidies constitute an imminent risk to the continued existence of MFIs (Hossain, 2013). Some MFIs have resulted to borrowings and commercialization of their services leading to a mission drift (Hamada, 2010). Recent empirical studies show an extremely significant connection between financing decisions and MFI financial performance, however the findings are inconclusive. According to Ganka, (2010) implying that distinct alternative sources of finance will have varying impacts on the financial performance of the MFIs. The author also further claims that that equity is a much more cost-effective source of financing than other options. Bich, (2016) argue that MFIs tend to follow a pecking order theory that they will utilise internal funds then debts are preferred to equity when external financing is required. According to Bogan (2009), due to tax advantages associated with the usage of debt, a high debt-equity ratio is likely to result in a good performance of MFIs (as assessed by operational self-sufficiency and return on assets and vice-versa). This is because a high debt-equity ratio is likely to result in a favorable performance of MFIs due to the utilization of debt. Kyereboah, (2007) also reported that microfinance organizations with higher leverage ratios are better equipped to handle moral hazards and adverse selection than their counterparts who have lower leverage ratios. Studies by Bich (2016), Tehulu (2013), Nyamsogoro, (2010) and Kinde, (2012) showed that the observed rise in the debt-to-equity ratio result to decline in financial performance due to inadequate information on cost associated with debt. Conversely, (Bayai and Ikhide, 2016) report that deposits and equity significantly and positively affect financial performance.

Because the financing structure of MFIs has an effect on their financial performance, there exists an absolute need to investigate factors that may moderate the relationship. According to microfinance literature, Credit risk management is an essential component driver of MFI financial performance and long-term Performance. Generally, credit risk is the risk that a creditor will fail to make timely payments of principal and interest (Quoc Trung, 2021). The significance of credit risk in the financial performance of lending institutions is highlighted by Kolapo, Ayeni, and Oke (2012). This is due to the fact that a substantial amount of their revenue is generated through loans, which in turn contribute to the interest margin. The risk associated with his financial situation include factors such as the quantity of non-performing loans, problem loans, and loan loss provision (Jimenez, Salas & Saurina, 2006). Pourhossein, Mottagi and Mohammadi (2022) states that credit risk is one of the most important risk factors in the financial system. As a critical aspect and burning issue among the issues faced by the microfinance industry, the impact of credit risk on MFIs' performance has been subjected to numerous empirical studies.

According to Kariuki (2017), credit risks (the identification, analysis, monitoring, and control) have been found to enhance the financial performance of microfinance institutions (MFIs). Similarly, Kimotho and Gekara discovered that credit risk management strategies are found to enhance the overall performance of financial institutions. A decrease in portfolio-at-risk (Par>30) has a beneficial impact on the overall financial performance of the MFI, as according to by Ayayi and Sene (2010). In other words, a high portfolio-at-risk would restrict microcredit revenue and, as a result, the amount of lendable funds. However, there is evidence from a number of research studies showing credit risk management does not have a favorable effect on the performance of financial institutions. (Obamide *et al.*, 2015; Warsame, 2016).

According to Beltrame, Previtali and Scip (2018), credit risks impair the profitability of lending institutions through large write-offs and provisions, reducing borrowing availability and needing increased capital cushions to face higher asset risk and pay loan losses. Credit risks also limit lending supply. It is common practice for banking sector regulators to impose additional capital requirements in order to improve lending institutions' loss absorbing capacity (Varotto, 2011). Furthermore, a study by Lutfi, Kristijadi, and Silvy (2020) demonstrates that credit risk and capital changes interact, with undercapitalized banks taking more risks when raising capital than well-capitalized banks. According to Medlin (1998), a credit institution's financing structure should be adjusted to reflect any unusual exposures, such as credit, funding, or technology risk management. As a consequence of this, the purpose of this research was to determine whether or not credit risk works as a moderator in the relationship between the financial structure of MFIs in Kenya and their financial performance.

## **1.2 Statement of the Problem**

Microfinance institutions (MFIs) serve a crucial and fundamental role in massive contributions to the GDP and poverty eradication by facilitating availability of a variety of financial services and products for households in developing countries with low incomes (Rahman, 2020). Despite the important role MFIs play in job creation, the CBK annual bank supervisory report (CBK, 2020). The sector as a whole had a loss of 877 million Kenyan shillings before taxes as of the 31st of December, 2021, compared to a loss of 2.2 billion Kenyan shillings as of the 31st of December, 2020, which contributed to a significant decline in financial income. Specifically, the report indicates that only four institutions reported profits, while the rest registered losses. Furthermore, as reported by the World Bank (2019), the global average operational self-sufficiency index of MFIs is 1.14, whereas it is 0.99 in Kenya, implying that Kenyan MFIs are

underperforming financially.

Previous research on the determinants of MFI financial performance has revealed that globally, MFIs are underperforming and under-funded as a result of declining financial support from donors and governments (Kipsha & Zhang, 2013). Kenyan MFIs are primarily funded through deposits and debt, according to CBK (2021). Existing literature has identified financing structure as a primary factor in determining MFI financial performance; however, the results are mixed, with a quantity of various researches indicating a positive relationship between financing structure and MFI financial performance. Ganka (2010), on the other hand, suggests that there is a negative relationship between equity and the financial performance of MFIs. Existing literature indicate that the equity to asset ratio (EAR), the debt to loan ratio (DTL), the risk level, and the size of the business are the elements that have an effect on NIER. In addition, EAR and DTL both have a positive influence on ROA, while risk has a negative effect on ROA.

The ability of a financial institution to maintain its stability and profitability over time is contingent on its having effective credit management, whereas the most common cause of bad financial performance and condition is a deterioration in the credit quality of its customers. The lending of money without the expectation of receiving it back is the activity that poses the greatest threat in microfinance, as it does in any other financial organization. MFIs' main source of income is credit creation (Boffey & Robson, 1995). This process, however, poses significant risks to both the one who is lending and the one who is borrowing. The possibility that a trade partner may not fulfill their contractual commitments in a timely manner or entirely places the bank's operations in a position that is extremely vulnerable to risk. A bank that carries an

enormous amount credit risk, on the other hand, has a high chance of going bankrupt, putting depositors at risk. Credit risk is usually considered as the greatest threat to a bank's performance. (Ekinici & Poyraz, 2019). The MFI high level of non-performing loans reduces profitability and has an impact on performance. Credit risk is more dangerous to lending institutions than the other risks. The accumulation of NPLs makes credit extension difficult for MFIs. Basel III provides leverage ratios as an instrument for minimizing the risk of write-offs and bad debts in the development of a financial system that is secure (Quoc Trung, 2021). Basel III sets leverage and liquidity requirements aimed at protecting lending institutions from excessive and risky lending while ensuring adequate liquidity during times of financial stress (Ozili, 2019). Leverage may be utilized as well as a risk-free "backstop" to supplement risk-based capital requirements (Hannoun, 2010). As a result, MFIs with high credit risk must be more leveraged, with capital above the regulatory minimum. As a result, the purpose of this study is to establish whether or not credit risk moderates the relationship between financial structure and financial performance among MFIs in Kenya.

### **1.3 Objectives of the Study**

The study was guided by both general and specific objectives.

#### **1.3.1 General Objective**

The general objective of the study was to investigate the moderating effect of credit risk on the relationship between financing structure and financial performance among microfinance institution in Kenya.

### 1.3.2 Specific Objectives

The study was guided by the following specific objectives;

1. Determine the effect of equity capital on financial performance among microfinance institution in Kenya.
2. Assess the influence of debt capital on financial performance among microfinance institution in Kenya.
3. Examine the effect of retained earnings on financial performance among microfinance institution in Kenya.
4. Determine the effect of deposits on financial performance among microfinance institution in Kenya.
5. Evaluate the moderating effect of credit risk on the relationship between;
  - a) Equity capital and financial performance among microfinance institution in Kenya.
  - b) Debt capital and financial performance among microfinance institution in Kenya.
  - c) Retained earnings and financial performance among microfinance institution in Kenya.
  - d) Deposits and financial performance among microfinance institution in Kenya.

### 1.4 Research Hypotheses

The study was guided by the following research hypothesis;

- (i) **H<sub>01</sub>**: Equity capital has no significant influence on financial performance among microfinance institution in Kenya.
- (ii) **H<sub>02</sub>**: Debt capital has no significant effect on financial performance among microfinance institution in Kenya.

- (iii) **H<sub>03</sub>**: Retained earnings have no significant effect on financial performance among microfinance institution in Kenya.
- (iv) **H<sub>04</sub>**: Deposits have no significant effect on financial performance among microfinance institution in Kenya
- (v) **H<sub>05</sub>**: Credit risk does not moderate the relationship between;
  - a) **H<sub>05a</sub>**: Equity capital and financial performance among microfinance institution in Kenya
  - b) **H<sub>05b</sub>**: Debt capital and financial performance among microfinance institution in Kenya
  - c) **H<sub>05c</sub>**: Retained earnings and financial performance among microfinance institution in Kenya
  - d) **H<sub>05d</sub>**: Deposits and financial performance among microfinance institution in Kenya

### **1.5 Significance of the Study**

This study finding may benefit management of microfinance institution in Kenya on how credit risk can influence the relationship between financial performance and financing structure among microfinance institution. Furthermore, they can understand how equity capital, debt capital, retained earnings and deposits affect financial performance. As a result, be able to create a financing structure that benefits shareholders more. The study findings may help scholars in the field of finance and practitioners who wish to learn more about microfinance institutions relating to financing structures and how they affect their performance. These study findings may assist policy makers in gaining a better grasp of financing structure policies and credit risk and performance of MFI's.



## **1.6 Scope of the Study**

The study examined the moderating effect of credit risk on the relationship between financing structure and financial performance among microfinance institution in Kenya. The duration of the study is determined by the Microfinance Act, which was enacted in 2006 but implemented in 2008. The investigation examined 53 microfinance institutions in Kenya from 2010 to 2019.. Then there was expansion of the financial sectors thereafter ranging from banks, investment houses, insurance companies, real estate brokers, consumer finance companies, mortgage lenders, and real estate investment trusts (REITs).

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 Overview**

This chapter reviews the literature related to financial structure (equity, debt, deposits, and retained earnings), credit risk on financial performance. The chapter reviewed further related theories, empirical literature and conceptual framework.

#### **2.1 Concept of Financial Performance**

Financial performance is the capacity of a company or organization to finance its operational expenses in the prescribed time frame. These funds are provided by donors, subsidies, or are internally generated. Bowman (2011); Christensen, Peirce, Hartman, Hoffman, & Carrier (2007); Mutinda & Ngahu (2016); Bowman (2011); Bowman (2011). It is the ability of an organization to raise enough revenue to meet the costs associated with its operations, which include pricing for products, costs of funds, administration overheads, loan transaction costs, and inflation, with each expense having a unique and vital technique of control that influences financial performance. William, 2014; Gibson, 2012; Nganga and Kibiti, 2016; William, 2014; Gibson, 2012; Nganga and Kibiti, 2016; William, 2014; Gibson, 2012; Nganga and Kibiti, 2016. The short-term goals such as achieving annual budget targets, maintaining a positive cash flow, and ensuring the organization's long-term success have been met with financial resources.

A company's overall health can be inferred by investors from the financial performance of the business. Pricing, profit making, overall performance, and planning are the four pillars that support a company's ability to support its operations and grow. The ability to support operations and growth is the most important aspect of the financial

performance of a business Williams, (2014). When looking at a company in the long term, profitability should take precedence above any short-term advantages. In order for any company to conduct its financial operations in the most efficient manner possible, it is necessary for that organization to formulate long-term goals that describe where it wants its firm to stand financially in the future and carry out those goals Ek (2011).

It is usual practice to view the financial performance of a company as an indication of the consequences of the company's policies and operations, stated in terms of monetary terms Dhandapani and Ganesh (2013). The results are reflected in the return on investment and return on assets, in addition to the value that the company has contributed to the market. The phrase "financial performance" is also used as an umbrella description of the financial well-being and prosperity of a company measured over the course of time. This application of the term "financial performance" is another way the term is used. A company is required to make various kinds of internal reconstruction with the objective to improve its financial performance. These involve the modification of share capital, the decreasing of share capital, the writing off of lost assets, enhancements in the oversight of working capital areas such as cash management, inventory management, and credit management in order to regulate the liquidity position, and improvements in administrative and operation management, which ultimately resulted in a reduction of manufacturing as well as operational costs.

Bowman (2011) created measures for the purpose of evaluating a company's financial performance. The equity ratio and the return on assets are the two financial indicators that are required for the analysis of the microfinance institution's a long-term ability to continue or develop services. Both of these ratios are expressed as a percentage. When

calculating the equity ratio, divide the total equity by the total assets. When calculating the return on assets, divide the total net income by the entire assets. The term "solvency ratio" was often used to refer to the first ratio, whereas "profitability ratio" was the term used for the second ratio. As a consequence of this, financial performance is recognized as a gauge of the outcomes of microfinance policies and procedures as expressed in terms of monetary value.

## **2.2 Concept of Financial Structure**

Financial Structure is the mix of various forms of external funds, known as capital, used to finance a business (Lisa, 2021). It consists of shareholders' equity, debt (borrowed funds), and preferred stock, and is detailed in the company's balance sheet. According to Saleem (2013A) a company's financial structure can be defined as the variety of financing options that are available for its assets. According to Echekeba and Ananwude (2016), the financial structure of a firm can be defined as the manner in which the assets of the business are funded. This may include items like short-term borrowings, long-term obligations, and funds supplied by the company's owners. In addition, the author claims that financial structure is responsible for all of a company's liabilities, whereas capital structure is made up solely of equity and long-term debt commitments. This is because financial structure accounts for all of a company's liabilities. A study by Gangeni (2006), the purpose of the capital structure is to provide a description of the combination of securities and sources of funding that are utilized by companies to support real investments. According to Gitman and Zutter (2012), the capital structure of a firm is made up of the combination of long-term debt and equity that is maintained by the company.

The optimal capital structure of a company refers to the proportion in which it structures its equity and debt. It is designed to maintain the perfect balance between maximizing the wealth and worth of the company and minimizing its cost of capital i.e., a combination of different types of funds that are regarded to be cheap and reasonably permanent, and offer value to the company (Parmasivan and Subramanian, 2009).

### **2.2.1 Concept of Equity Capital**

The term "equity capital financing" refers to the funds that are invested in a company by its owners in exchange for either preferred or common stock, and this type of financing is seen as a long-term source of finance Coleman & Robb, (2012). It is made up of the fully paid-up share capital, the share premium, the reserves, and either the surplus or the earnings that have been retained Peter, Teru & Ugwu, (2020). Equity, as opposed to borrowed capital, is distributed by the shareholders, or owners, of the company, and it is seen as a permanent source of money Coleman & Robb, (2012). The considerations about the capital structure imply that stock equity is a more costly source of financing when compared to loans and borrowing since debt is a more affordable type of financing because of the tax-shield that is associated with debt financing. In contrast, loans and deposit are considered to be relatively inexpensive sources of financing. Alternatively, the expense of using company-owned funds is an essential topic in corporate finance, as it plays a role in deciding matters pertaining to investment, financing, and capital structure Sassi, Saadi, Boubaker and Chourou, (2019). Studies have revealed that institutional ownership, operating leverage and liquidity have a positive influence on firm value. (Hasanudin, Nurwulandari, Adnyana and Loviana, 2020).

According to agency theory, institutional ownership should play a significant part in regulating the amount of risk taken by corporations. (Sakawa, Watanabel, Duppati, and Faff, 2021) Additional research has shown that the various types of equity ownership structures, such as managerial, institutional, foreign, government, and concentration, each have a significant influence on strategic decisions such as taking calculated risks, social responsibility for business, and tax planning Tijjani and Peter, (2020)

### **2.2.2 Concept of Debt Capital.**

Debt capital means money that is obtained by borrowing funds with the understanding that the funds obtained will need to be repaid at some point in the future Martin, (2015), Borrowed funds from other parties (including private businesses, commercial enterprises, and international organizations) are included in the definition of "debt capital," which can refer to either short-term or long-term borrowing arrangements Peter, Teru & Ugwu, (2020). Due to the fact that debt is an inexpensive source of financing and an organization can take advantage of the tax benefits associated with it, a company ought to take into consideration an appropriate debt to equity ratio in order to optimize the value of the company Fama & French, (2002). According to the findings of studies, organizational performance is impacted by debt finance, Nur, 2020; Maneerattanarungrot & Donkwa, 2018; Bayai & Ikhide, 2016. On the other hand, lending restrictions increase the likelihood that the company would be exposed to high levels of financial risk and the danger of bankruptcy, which offsets out the advantages of receiving external financing (Nazir, Azam & Khalid, 2021).

Dorfleitner, Röhe and Renier (2017), MFIs often leverage debt capital to provide microloans, savings accounts, insurance products, and other financial services to individuals who lack access to traditional banking services. By mobilizing debt capital,

MFIs can bridge the financial inclusion gap, empowering people in economically disadvantaged areas to improve their livelihoods, start or expand small businesses, and build financial resilience.

Debt capital in the microfinance sector may come with favorable terms, including concessional interest rates or longer repayment periods, to accommodate the unique needs of low-income clients. However, MFIs must manage their debt effectively to ensure sustainability and avoid over-indebtedness among their clients

### **2.2.3 Concept of Retained Earnings**

Retained earnings is a function of dividends, income loss or profit, and beginning retained earnings. Noteworthy, the earnings are the difference between a company's historical profits minus paid dividends. The "retained" aspect of the earning signals that the capital is not paid out to stakeholders, but were kept by the enterprise (Grabowski *et al.*, 2017). Thus, the earnings decrease in the event of losses or dividend payments, while the increase with new profits. These profits allow firms to optimize newly generated money. The money can either be paid to investors or reinvested into the business to promote the growth of MFIs. The various possibilities of how MFIs use surplus money include dividend payment to shareholders, launching new products, partnerships, mergers, or acquisitions, buying back shares, and repaying outstanding loans. The irreversible nature of dividends implies that paid money can never be recovered. However, the other uses of surplus money potentially contribute to retaining earnings. For instance, settling debts from earnings takes money out of the business, but builds an entity's credit and reduces the amount of interest that requires payment (Baker & Martin, 2011). Expressing the retained earnings as a ratio of total earning

gives rise to retention ratio, which is the difference between one and the dividend payout ratio.

#### **2.2.4 Concept of deposits**

The underprivileged people who use microfinance services from banks save their little sum of money in the form of deposits. Studies have demonstrated that legal constraints make obtaining large deposits exceedingly expensive, which results in deposits being an unattractive source of financing for MFIs all around the world Tehulu, (2013); Cull, Demirgüç-Kunt & Morduch, 2011. In spite of this, the influence of rules throughout jurisdictions on the attractiveness of deposits and savings is primarily up for question due to the fact that the empirical debate indicates in both directions Fehr & Hishigsuren, 2006. Although Bredberg & Ek, 2011. Argues that deposits are a reliable source of funds for microfinance organizations that leads to improved financial performance and long-term survival; However, in reality, MFIs are unable to attract enough deposits; as a result, they usually rely on donor grants, government subsidies, and, frequently, debt capital, including debt with non-market terms ideal to the MFI, which restricts the financing structure and choices of MFIs.

Deposits provided to the MFIs assist to recruit technical professionals who construct the necessary deposit platforms, system improvements, security of data management systems, and accounting systems. This is made possible by the funds deposited. MFIs are subject to a tax in the form of the requirement to meet capital reserve requirements; hence, MFIs may choose to provide larger loans, leading to mission drift Cull, Demirgüç-Kunt & Morduch, (2011). Against these obstacles, MFIs may not attract sufficient deposits, which further reduces the impact of deposits on the organizations' overall financial performance (Mwangi, Muturi & Ombuki, 2015).



### **2.3 Concept of Credit Risk**

Credit risk encompasses the risks related to an MFI's credit activities. It is the most frequently addressed risk by MFIs since it directly affects their main earning asset: the loan portfolio. Credit risk is one of the most important and costly risks that a financial institution faces. Since this risk poses an immediate danger to the firm's ability to remain solvent, it carries a greater potential for adverse outcomes than the majority of the other threats that the banking industry and other financial institutions must contend with (Sufi & Qaisar, 2015). There is a danger of default attached to loans that are granted to lenders; yet, lenders continue to extend credit with the idea that borrowers would enthusiastically respect their contractual payment responsibilities and will not allow their loans to go into default or becoming non-performing loans (Bhattarai, 2016). Revenue for MFIs might take a significant hit when they have non-performing loans. In order to effectively manage credit, MFIS needs to put in place reliable control mechanisms (Afriyie & Akotey, 2012). The influence of the management of credit risk on the financial performance of Ethiopian banks was investigated in a research project carried out by Bizuayehu (2016). According to the findings of this study, credit risk, as represented by the Non-Performing Loan (NPL) ratio, has a considerable and unfavorable effect on the financial performance of Ethiopian commercial banks. Sufi and Qaisar (2015) conducted a study on the significance of management practices of credit risk on the performance of a loan when the credit conditions are being taken into consideration, as well as policy, client appraisal, and control of credit risk in Pakistan. According to the findings of the study, credit conditions and client assessment have a large and positive influence on the performance of a loan, but credit policy and the control of credit risk have a negligible but favorable influence on the performance of a loan. The research conducted by Mutua (2015) looked at the impact of minimizing

credit risk on the performance of MFIs. Mhlanga, (2021) discovered a significant connection between the success of the organizations and the management of credit risk in terms of the identification of risks, the monitoring of those risks, and the application of credit penalties. The researchers reached the conclusion that improved credit risk management leads to improved performance of commercial banks. Aduda and Gitonga (2011) explored the relationship between the management of credit risk and the profitability of banks' lending, and the researchers came to the conclusion that the management of credit risk has a significant influence on the MFIs' ability to turn a profit. Makori, (2015) conducted research to determine how the management of credit risk practices impacts the profitability of MFIs that are authorized to accept deposits. According to the findings of the study, credit evaluation methods, credit monitoring procedures, debt collection procedures, and credit risk governance systems had a significant and favorable impact on the financial profitability of MFIs.

## **2.4 Theoretical Review**

This section presents the theories underpinning the study; pecking order theory, Agency theory, and The Modigliani-Miller Theorem.

### **2.4.1 Pecking Order Theory**

The Pecking Order Theory was founded by Donaldson (1961) and later advanced by Majluf and Myers, (1984). He argued that an organization choice of financing follows a hierarchical order starting from the cheapest source of finance to the most expensive (Retained earnings deposits, debt and equity as a final resort).

The availability of information is a significant factor in determining whether a company would use debt or equity financing; managers have superior knowledge regarding the expectations, risks, and value of their companies compared to investors from the

outside. Therefore, a company that is internally financed is considered to be financially sustainable, whereas a company that is levered is not considered to be financially sustainable. Myers (1984) attributes the order of financing preference assumption on an information gap between the firm and the financing structure. According to this theory, in order for a company to utilize external finances for an investment due to inadequate information about the project, investors are likely to underrate it and also be unable to finance it. Despite the fact that insiders have sufficient information regarding the investment, the managers of the company will proceed to finance it using deposits, grants, and retained earnings despite the fact that they are aware that shareholders will benefit (Zhang, & Chen, 2017).

When it comes to external financing sources, managers have a preference for safer securities. This is because high-risk assets, such as newly issued equities and long-term loans, are more susceptible to information asymmetries than minimal-risk securities, such as short-term debt. Low-risk securities, on the other hand, are less likely to be affected by information asymmetries. Wambua, (2018) the pecking order theory has been used in a number of researches and those studies have found that the structure of financing has an effect on financial success. Criticism of this theory as stated by Chirinko and Singha, (2000) showed that financing choices are contingent on informational asymmetry. As a result, according to this theory, there is a gap in the financing techniques utilized by surplus corporations and deficit firms, as well as the capacity for debt.

#### **2.4.2 Agency Theory**

This theory was founded by Jensen & Meckling (1976) founded and later advanced by Fama and Jensen, (1983). The theory is based on the principal ((shareholders) and agent

(executive managers) problem. According to Fama, (1998) when the agent has the capacity to prioritize his personal interests above those of the principal. The principal delegates the operational role to the agent but retains the monitoring role which is executed through board of directors. Kunz & Pfaff, (2002) argues that the agent is likely to engage in borrowing behaviors which conflicts the principal's objective to maximizing returns. Additionally, the agent's perceptions as regards investment, risk taking and growth of the organization may differ from that of the organization (Dechow & Sloan, 1991).

This theory has a number of drawbacks, including the following: an agency problem arises when the purpose of the agents differs from that of the principals, and it is challenging or costly to ascertain if agents have correctly completed the work that was delegated to them. Eisenhardt, (1989) Also the prospect theory propounded by Kahneman and Tversky, (2013) contend that individuals consider their current wealth when evaluating how to act; which suggest that the same individual (agent) may at times be risk taker, risk averse or even neutral based on the state of his/her personal wealth. Studies have shown that agency theory has an implication on firm's choice of financing structure. One way of mitigating agency problems is through debt financing which creates debt covenants that minimize free cash-flow and asymmetric information problems (Taylor, 2013).

Agency theory is significant to MFIs financing structure because incentives that align managerial interest with those of other stakeholders are different. There is a possibility that the interests of social investors and those of managers of microfinance institutions (MFIs) do not coincide. MFIs have always been forced to rely on donations and subsidized loans from the government and private donors in order to support their

operations Ross, Westerfield & Jordan, (2011). Donors and social investors are focused on supporting outreach programmes while MFI management may be profit oriented. In addition, in order to discourage excessive risk taking, the industry's regulators typically establish guidelines for equity capital. As a result, the agency theory is utilized in the research to support the hypothesis that various forms of capital will each have a unique impact on the economic performance of MFIs.

### **2.4.3 The Modigliani-Miller Theorem**

Franco Modigliani and Merton Miller, two prominent economists of the time, came up with the Modigliani-Miller assumption in the year 1950. The concept that the capital structure of a company does not have an impact on the value of the company was the driving force for the development of the theorem. However, the accurate calculation of a firm's value is based on the present state of the future earnings and available assets, which are all independent of the underlying capital structure. The growth of a company's finances through the various approaches, including reinvesting profits, issuance of stock shares, and borrowing, is irrelevant for a company. Thus, the combination of financing options a firm chooses does not have an effect on its actual market value. The Modigliani-Miller theorem assumes that organizations have an array of expected cash flows. The choice of a fraction of equity or debt entails dividing cash flows among the shareholders. It is expected that firms and their shareholders have equal entry to the available financial markets, which makes it possible for firms to use leverage that they have created themselves. Investors have the ability to create a wanted but denied leverage, and they could also eliminate unwanted leverage (Cline, 2015). This phenomenon gives an idea that the amount of available borrowing does not have an effect on the worth of the company on the stock market. The classic arbitrage-based propositions ascertain that firms' values are independent of their leverage. The

investment policy used by a firm determines dividend payout approaches that are independent of prevailing share prices and total shareholder returns. Decisions on dividend policies and choices of financing decisions do not affect perfect markets. Common considerations of the theorem include investor clientele outcomes, variation of opportunities in the financial market, finance and operation separation or lack thereof, adverse selection, agency conflicts, bankruptcy costs, transaction costs, and taxes. The value of a firm and its debt are influenced by factors such as growth opportunities, collateral, and profits (Chesnokova, 2015). Critics of the theorem argue that it does not detail how organizations finance their operations, but it substantiates the significance of financial performance. The Modigliani-Miller theorem provided the foundation for the pecking order and trade-off theories.

The Modigliani-Miller theorem conforms to the debt variable of the study. Particularly, the cost of debt significantly influences borrowing choices by companies. MFIs rely on retained earnings because it does not require giving up ownership of the business. The availability of collateral determines the willingness of debtors to invest in a specific venture (Ghosh et al., 2017). Loan security and the amount of funding have a direct relationship, and as such, a vast asset base translates to increased debt access. In other words, issuing a loan is based on a comprehensive assessment of available assets. Debt financing represents one of the costliest approaches to raising funds in an organization due to the reliance on investment bankers whose responsibilities encompass systematically structuring big loans. Debts are a viable financing source in instances of better returns and low interest costs. The risk associated with increased borrowing validates the need for constantly assessing the debt to liquidity ratio. Debt consolidation is a fundamental consideration in instances where a company has to be valued for various purposes, including liquidation (Asquith & Weiss, 2019).

According to the findings of this study, the Modigliani-Miller theorem is invalid under a wide range of conditions, including agency conflicts, unfavorable selection, lack of separability between financing and operations, time-dependent financial market opportunities, and financier clientele effects. Different models make use of a variety of components drawn from this list. It should not come as a surprise that numerous competing hypotheses have been put up given the wide variety of possible components that can be utilized. Harris and Raviv (1991) presented a summary of the progress that has been made with this hypothesis as of the year 1991.

## **2.5 Empirical Review**

### **2.5.1 Equity Capital and Financial Performance**

Several studies have been carried out to investigate the connection that exists among equity and the performance of a company. A study carried out by Parvin, Hossain, Mohiuddin, & Cao, 2020 concerning the relationship among the various forms of financing and the overall financial performance of microfinance institutions. Panel data regression analysis utilizing the Random effect and Fixed effect models was utilized to test the hypothesis. The data consisted of 187 MFIs in Bangladesh and covered a period of 10 years, from 2005 to 2014. The study was conducted using panel data. According to the findings of the research conducted, both the Equity to Asset Ratio (EAR) and the Debt to Loan Ratio (DTL) have a favorable impact on ROA. The authors came to the conclusion that microfinance institutions (MFIs) should construct their financing structure by creating a collection of sources of funds from market-based providers of money. This will allow MFIs to optimize their financial performance and extend their services to low-income customers who do not have security.

In return, Abdulhakim (2020) conducted study into the elements that play a role in the financial performance of microfinance institutions (MFIs) in Ethiopia. The researcher employed an explanation-based methodology and adopted a quantitative approach to the study that they were conducting. They utilized a panel data set that consisted of 120 samples obtained from 15 MFIs during the years of 2011 and 2018. According to the findings of the study, there is a substantial negative relationship between Operating expenses and financial performance. On the other hand, Portfolio yield, Net profit margin, capital sufficiency, and GDP growth all have a significant positive relationship with financial performance. The author says that both the government and interested parties in Ethiopia ought to foster the initiative by mobilizing funding to promote microfinance in remote regions with the goal to safeguard the social effect of MFIs in the country. This is because MFIs in Ethiopia are still in the early stages of development.

On the other hand, Baraza (2014) conducted a study in Kenya with the objective of determining whether or not there is a connection between the funding structure of microfinance institutions and their financial performance. The researcher employed a descriptive research approach, selecting 25 sample sizes from a total of 56 different Kenyan microfinance institutions over the course of a period of five years, from 2009 to 2013. Data was gathered from secondary sources, such as the MIX market and the yearly reports of the microfinance institutions that were examined, and utilized. In order to investigate the nature of the connection that exists between the variables that were under investigation, a multiple correlation analysis was carried out. According to the findings of the study, the framework of funding that is utilized by microfinance institutions has an effect on the financial performance of the company. The ratio of a company's debt to its equity had an adverse correlation with its financial performance;



this means that the more debt a company uses to finance its operations, the worse financial performance it will report. The ratio of deposits to assets has a positive link with financial performance, which suggests that the stronger the financial performance of a microfinance institution, the greater the number of deposits it takes. Because of the substantial positive correlation that exists between loan portfolio and financial performance, we may deduce that even a little boost to the loan portfolio will result in an even greater rise in financial performance.

### **2.5.2 Debt Capital and Financial Performance.**

A number of studies have produced conflicting results, suggesting that debt might either positively or negatively affect the financial performance of microfinance firms, or have no effect at all. The findings of Ahmed and Siddiqui's (2019) study indicate the impact of firm performance on capital structure, mainly debt financing. A panel dataset of 70 textile companies in Pakistan for the period between 2010 to 2015. The researcher utilized a Fixed Effect Model to determine the connection between company performance and funding structure. The findings indicated that there is a favorable connection between return on assets and debt-to-asset ratio. This would imply that the primary contributor to a company's performance is its use of financial leverage.

According to Chikalipah, (2019), examine different sources of finance and the financial performance of microfinance institutions in the sub-Saharan region of Africa. The panel data was used to analyze data with a sample of 471 MFIs for the period between 1995 to 2012 in 36 SSA countries. The study used GMM estimator, the findings were that debt and micro savings negatively affected microfinance institutions' financial performance in sub-Saharan Africa.

Furthermore, Mungereza, (2019) determined capital structure's impact on financial performance of DTMI's in Mombasa County. The study employs a correlational research design with a four-observation sample size from 2009 to 2018. The relationship between financial performance and all factors examined is weak and insignificant, according to the research's results. The correlation between the proportions of debt, core capital, and total capital was insignificant and with weak negative correlation.

### **2.5.3 Retained Earnings and Financial Performance.**

Retained earnings are a critical component of a company's financial performance as they represent the cumulative profits generated over time that have been reinvested into the business rather than distributed to shareholders as dividends (Suleiman, Popoola & Yahaya, 2022). The level of retained earnings can serve as a barometer of a company's financial health and growth prospects. Positive retained earnings indicate that the company has been profitable and has the capacity to fund future expansion, research and development, debt repayment, and other strategic initiatives. Conversely, negative retained earnings may signal financial challenges and suggest that the company has incurred losses or distributed more in dividends than it has earned. Thus, understanding and effectively managing retained earnings is integral to assessing a company's financial performance and its ability to sustain and enhance shareholder value over the long term.

Omollo, Muturi, and Wanjare (2018) analyzed the effects of optimal capital structure on the financial performance of MFIs. A descriptive analysis utilizing a panel dataset of nine publicly traded companies over a ten-year period (2010-2019). Using a framework for document analysis, quantitative secondary data were extracted from the

financial reports of the companies. Tobin's Q Pecking order theory was used as a proxy for retained earnings financing, with the effects of economic growth rate and earnings volatility on performance moderated. The results indicated that the Retention ratio (RR) was moderately positive. The coefficient of regression was also significant and favorable. The researcher found that retained earnings enhanced performance and should therefore be implemented.

On the other hand, some researchers find that retained earnings is insignificant or negatively associated with firm growth or performance. Darabi, Zadeh and Abdi (2014) examined a study on 101 listed firms in Tehran Stock security Exchange. Their results showed an inverse and significant relationship between firm's financial performance and changes in retained earnings ratios of Institutions. Kanwal (2012) also examined listed companies in the chemical industry in Pakistan and found an unfavorable relationship between retained profits and the stock prices and profits of these firms. Tian and Zeitun (2007) and Ouma & Murekefu (2012) suggested that retained profits (earnings) have a negative impact on return on assets (ROA) ratio, return on equity (ROE) ratio and market value measures including returns on share prices. Whilst Osegbu *et al.*, (2014) found no significant correlation between retained earnings and MFI performance.

#### **2.5.4 Deposits and Financial Performance.**

Deposits are a fundamental aspect of a financial institution's financial performance, especially for banks and credit unions. These deposits, primarily from customers and account holders, serve as a vital source of funding for lending activities and other income-generating investments (Ekinici & Poyraz, 2019). A healthy growth in deposits, often reflective of customer trust and confidence, can boost a financial institution's

capacity to lend, invest, and generate interest income. However, the management of deposit costs is equally critical, as higher interest rates paid on deposits can impact a bank's net interest margin. Moreover, a significant withdrawal of deposits can be indicative of a loss of faith in the institution, potentially signaling underlying financial issues. Thus, effectively attracting, retaining, and managing deposits is integral to the overall financial performance and stability of financial institutions.

According to Al-Azzam,(2019), studied on subsidies or deposits mobilization among microfinance institutions on outreach and financial Performance. The GMM estimator was applied to a sample of 1,301 MFIs operating in 121 countries during the period of 2003 to 2014.Subsidies and deposit mobilization enable MFIs to reach impoverished borrowers with interest rates that are lower, but they have an adverse effect on financial performance, as discovered by the researcher.

Nonetheless, Duguma and Han (2018) studied the effect of the mobilization of deposits on the financial performance of rural savings and credit cooperatives (RUSACCOs) in Ethiopia. This study employed regression estimates based on a panel of data of 166 rural savings and credit cooperatives from 2014 to 2016. It was discovered that the number of deposits, the deposit-to-total-asset ratio, the deposit-to-loan proportions, and the demand deposit ratio all had a significant and immediate impact on the financial performance of the organization. According to the findings of the research, neither the interest rate nor the credit risk had a significant. Similar findings were reported by Baraza (2014), discovered that the financial performance of a microfinance organization was positively correlated with the total amount of deposits that the institution accepted.

### **2.5.5 Moderating Role of Credit Risk on the Relationship between Financing Structure and Financial performance**

Prior studies have shown a relationship on moderating effect of credit risk in the performance of MFIs. The effect of two macroeconomic indicators (exchange rate and inflation rate) and two microvariables (loan amount per borrower and total loan portfolio) on the quality of loan portfolios, as measured by portfolio at risk over 30 days (PAR30)

Risk management is a concept that is highly essential for any company to understand since it helps to minimize losses caused by bad debts as well as expenses of debt operation while simultaneously increasing the performance of financial institutions (Kimotho and Gekara, 2022). In a similar vein, Kariuki (2017) shows that credit risk identification, credit risk analysis, credit risk monitoring, and credit risk management all contribute to MFIs having better financial performance.

Literature reveals a relationship between credit risk and financing structure. Sifrain, (2022) asserted that the portfolio risk of MFIs can increase as the local currency depreciates and price inflation rises; however, the results are not statistically significant. Nonetheless, two of the studied MFIs revealed a positive and statistically significant relationship with the exchange rate, whereas one of the remaining examined MFIs revealed a negative and insignificant relationship with the exchange rate. Only one MFI showed a negative and insignificant correlation between the quality of its loan portfolio and the inflation rate. On the other hand, the growth of the loan portfolio has a negative and significant effect on the loan portfolio at risk of MFIs globally and individually, with the exception of one of the studied MFIs, which showed a negative but insignificant relationship with the total loan portfolio. Only one of the four MFIs found

that the loan portfolio quality would improve substantially as the amount disbursed per borrower increased. In contrast, for the remaining MFIs, the PAR30 increased as the loan amount increases.

According to Scheufler (2002), credit risk management is important to MFIs because it plays a vital part in the crediting process by maximizing the institution's risk, risk-adjusted rate of return by monitoring credit risk exposure with the goal of mitigating the negative effects of credit risk. Scheufler (2002) explains more about how credit risk management seeks to reduce risk exposure in extended loans, resulting in optimal debtor levels with reduced likelihood of problematic debts, and enhancing the financial performance of MFIs.

## **2.6 Control Variables**

As suggested the study controlled for to isolate effect of financing structure on the financial performance of MFIs, the study controlled for a number of variables.

### **2.6.1 Yield on Gross Loan Portfolio and financial performance**

The yield on aggregate loan portfolio reflects both the earnings from the loan portfolio and the average interest rate levied to borrowers by the MFI (which includes loan-related fees). It is determined by dividing the cash revenues from the loan portfolio by the average total loan portfolio (Srinivasan, 2009). The portfolio yield is the initial indicator of an institution's ability to generate sufficient revenue to support its costs. Thus, it appears that the yield on the aggregate loan portfolio is affordable for low-income borrowers, which pertains to profitability and improves financial performance. The yield on the aggregate loan portfolio had a positive and significant effect on the financial autonomy of Bangladeshi MFIs. In addition, Naz, *et al.*, (2019) investigated the factors that affect the financial performance of microfinance institutions in Pakistan

and discovered that the yield on the aggregate loan portfolio had a positive and statistically significant effect on the financial performance of MFIs. Cull (2005) and Nyamsogoro (2010) found that yield total loan portfolio has a positive and statistically significant impact on the financial performance of MFIs. Okumu (2007) examined the determinants of financial performance and outreach of microfinance institutions (MFIs) in Uganda and found that performance was negatively and significantly correlated with the ratio of gross loan portfolio to total assets.

### **2.6.2 Firm size and financial performance.**

The size of the firm refers to the quantity or amount of operations produced by a singular firm, as measured by the value of its assets. According to Ramsay et al. (2005), the size of an MFI has a positive and significant effect on the efficacy of MFIs in the country, as measured by total assets and number of borrowers. Cull et al. (2005) discovered that the magnitude of MFIs has a positive and statistically significant effect on their operational self-sufficiency (OSS). A study by Rahman and Mazlan (2014) contrasted the positions of microfinance institutions in Bangladesh based on their financial self-performance. The study employed multiple regression to evaluate financial self-performance between 2005 and 2011 based on yield on total loan portfolio, cost per borrower, and average loan balance per borrower. The results of multiple regression indicated that the majority of microfinance institutions in that area are financially self-sufficient. Bogan (2012) found that the scale of microfinance institutions is inversely proportional to their financial performance. In contrast, Hossain and Khan (2016) examined the factors influencing the financial performance of MFIs in Bangladesh. The analysis sampled 29 MFIs over the course of four years, from 2008 to 2012. The authors discovered that the scale of MFIs had no significant impact on their financial performance.

### **2.6.3 Average Loan Size and financial performance**

This describes the loan quantity extended to borrowers. Naz, Salim, Rehman, Ahmad, and Ali (2019) conducted a study on the determinants of financial performance of 29 microfinance institutions in Pakistan for the period 2008–201 and discovered that average loan size has a negative significant relationship with financial performance, with a rise in loan size leading to an improve in financial performance and helping poor borrowers.

Literature demonstrated, however, that MFIs should maintain an equilibrium on average loan size because average loan size is positive and statistically significant, suggesting that financial performance correlates with larger loan sizes because larger loans are associated with greater credit risk and cost effectiveness, resulting in a decrease in profitability. (2010), Nyamsogoro. On the other hand, small-size loans are associated with reduced costs that are reflective of credit risk and also a shallower outreach, which indicates mission drift. (2012). (Kinde, 2012). In contrast, Awaworyi (2018) carried an investigation on 206 MFIs in 33 African nations and discovered that the smaller the loan size, the greater the depth of outreach, whereas an increase in the average loan size decreases depth of outreach. Consequently, using average loan quantity as a proxy for outreach depth has a negative effect on financial performance. In contrast, (Quayes, 2012). argues that larger average loan sizes have a positive impact on the financial performance of businesses.

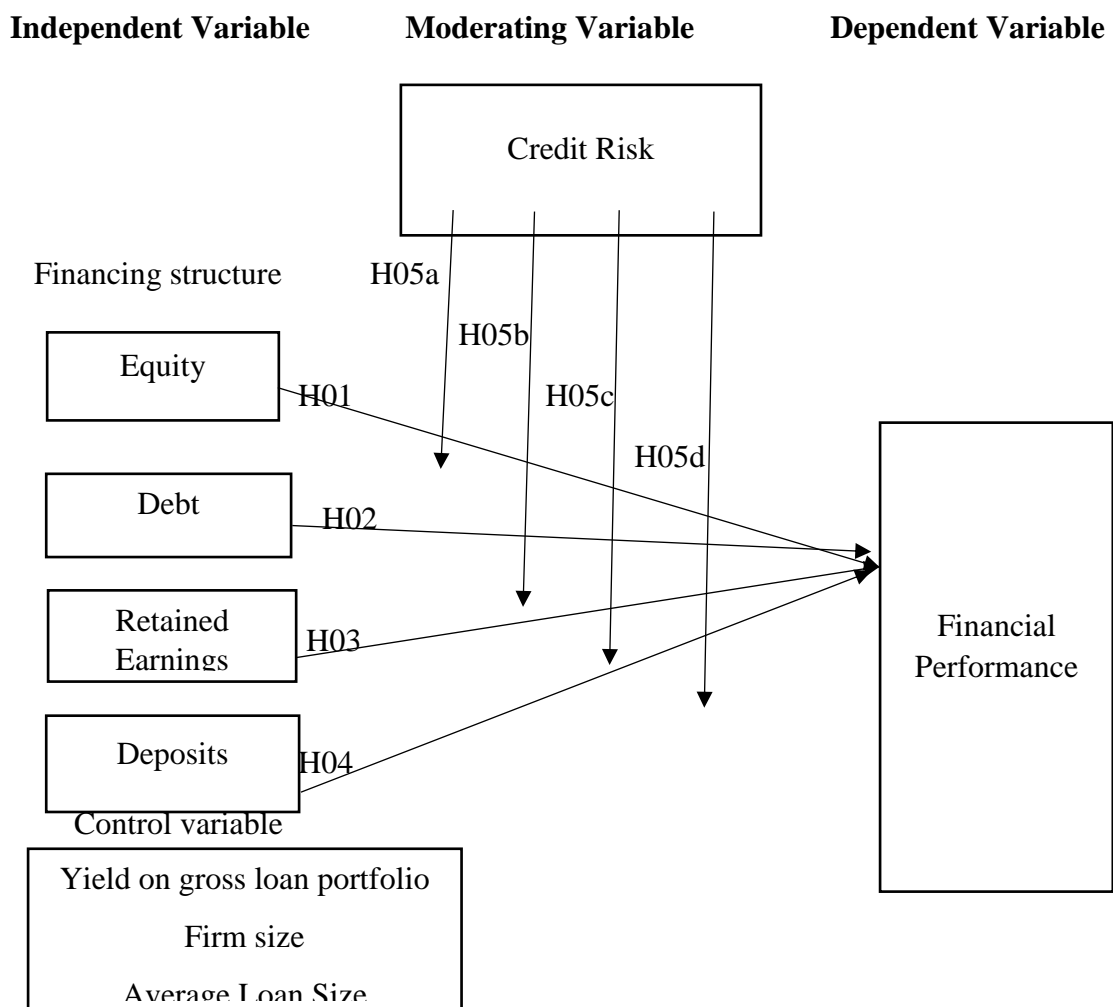


Author and objectives	Variables used	Methodology and findings	Research gap
Parvin, Hossain, Mohiuddin, & Cao,(2020)  Abdulhakim, (2020)	Equity Debt  Equity	Both the Equity to Asset Ratio and the Debt to Loan Ratio positively impact ROA. Negative significance was found between Operating cost and financial performance, whereas positive significance was found for Portfolio yield, Net profit margin, capital adequacy, and GDP growth.	MFIs to configure their financing structure by creating a portfolio of sources of their capital from market-based sources of funds so that can maximize their financial performance and reach out to poor clients without collaterals. Government and stakeholders should encourage the program by mobilizing funds to promote microfinance in remote areas to insure their social impact
Ahmed, & Siddiqui, (2019)  Chikalipah, (2019) Mungereza, (2019)	Debt  Debt	Performance of the firm and financial structure Return on assets and debt-to-asset ratio were found to have a positive correlation. Negatively affecting the financial performance of MFIs are debt and microsavings. The correlation between the proportion of debt, proportion of core capital, and proportion of total capital was negligible and feeble.	MFIs' size, geographical location, growth stages, ownership, age.
Al-Azzam, (2019)  Mutua, Jagongo & Simiyu, (2020) Duguma, & Han, (2018)	Deposit  Deposit Deposit	Subsidies and deposit mobilization have adverse effect on financial performance of the firm. Mobilization of deposits, particularly on deposits on demand, and a reduction in the interest rate spread are required to enhance the performance of businesses. The amount of deposit to loan ratio, the deposit to total asset ratio, the volume of deposits, and the demand deposit ratio had a substantial impact on the firm's financial performance.	Analyze on how the performance of the MFIs can be managed to increase their efficiency. Through lending approaches and technological innovations
Kimotho and Gekara Kinde, (2012)  Kariuki (2017)	Credit Risk  Credit Risk	Credit risk identification and credit risk evaluation have a strong positive correlation with the financial performance of MDIs, whereas credit risk monitoring and credit risk mitigation have a moderately significant positive correlation.  Management of credit risk significantly influences solid financial performance. Second, there is no significant relationship between capital structure and financial performance.	MFIs must use a credit risk evaluation procedure to identify and analyze all potential losses and determine them.  Evaluating credit risk, monitoring credit risk, and mitigating credit risk are essential for MFIs to achieve solid financial performance.

Source: Researcher, (2023)

## 2.7 Conceptual Framework

Figure 2.1 presents the conceptual framework, which illustrates the hypothesized link between the independent variables and the dependent variable. The purpose of this research was to evaluate the moderating impact of credit risk on the link between the funding structure of microfinance institutions and their financial performance in Kenya. The components of equity capital, debt capital, deposits, and retained profits were taken into account in this analysis. The component that was moderating was credit risk. The success of the company's finances served as the dependent variable.



**Figure 2.1: Conceptual Framework Model**

Source: Researcher, (2023)

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.0 Introduction**

This chapter describes the research design, the study's target population, method of sampling and sample size, as well as collecting data and analysis.

#### **3.1 Research Design**

The study followed a longitudinal and explanatory research design. The longitudinal design proved ideal for this research because it aimed at assessing the causal effect between MFIs in Kenya's financing structure and their financial performance in order to determine the factors that influence their financial performance. Because of causal effects, an explanatory design was employed. There have been prior attempts at investigating the relationship among the financial performance of MFIs and the impact of financial leverage (Kahihu and Wachira, 2021).

#### **3.2 Target Population**

The population of interest for the research consisted of the 53 MFIs registered by the Association of Microfinance Institutions in Kenya between 2010 and 2019 (World Bank, 2019).

#### **3.3 Inclusion / Exclusion Criteria**

Nevertheless, application of inclusion and exclusion criteria left thirty one MFI's as eligible for carrying out analysis. The inclusion and exclusion criterion was based on whether the firm was in operation from 2010 to 2019. This period was suitable since it was during this period that the government enacted regulatory framework requiring MFI's to observe corporate governance. The time period considered was appropriate

because the Kenyan microfinance sector underwent significant regulatory and institutional changes as a result of the global financial crisis.

### **3.4 Data Collection**

The acquisition of secondary data from Microfinance Information Exchange Market (a website containing extensive information about MFIs) was governed by a data collection schedule. This is a method or tool used to collect information from respondents during interviews. Prior research has heavily relied on MIX market data, which is regarded as highly dependable Quayes, 2012; Churchill & Marr, 2017; Quayes, 2012; Churchill & Marr, 2017.

### **3.5 Measurement of Variables**

In this study, the level of financial performance served the dependent variable, while the financing structure—including equity, debt, retained earnings, and deposits—served as the variable that was independent. Additionally, control factors such as yield on gross loan portfolio, company size, and average loan size were included in the research. The moderator variable of the study was credit risk.

#### **3.5.1 Dependent Variable**

ROA, or Return on Assets, was the metric that was used to evaluate the MFI's overall financial performance (Kumari, 2023). ROA is defined as the ratio of a company's net income to its total assets, and its calculation looks like this:

$$\text{ROA} = \frac{\text{Net Income}}{\text{Total Assets}}$$

### 3.5.2 Independent Variable

The independent variables comprised of equity, debt, deposits and retained earnings.

#### 3.5.2.1 Equity Capital

This refers to the sum of funds that the company's stockholders have contributed to the overall firm's investment. It serves as the company's permanent source of the fund. Based on empirical literature this study, The ratio of owner's equity to total assets was used as the measurement for equity capital in this study (Khachatryan, Hartarska & Grigoryan, 2017).

$$Equity = \frac{Owners\ Equity}{Total\ Assets}$$

#### 3.5.2.2 Debt Capital

This is a refers to the long-term debts that the corporation has deployed in order to fund its investment goals, all while simultaneously coming up with its principal amount and also paying back interest. The quantity of a company's debt may be determined by calculating its debt capita, which is the ratio of the company's total debt to its entire assets (Noomen & Abbes, 2018).

$$Debt = \frac{Total\ Debt}{Total\ Assets}$$

#### 3.5.2.3 Retained Earnings

Retained earnings is cumulative net earnings or profit after accounting for dividends (Janet Berry-Johnson, 2020)

$$Current\ Retained\ Earnings + Profit/Loss - Dividends = Retained\ Earnings$$

### 3.5.2.4 Deposits

Deposits are the most affordable form of financing for MFIs because they are cheaper to obtain than other forms of funds (Tchuigoua, 2015; Henock, 2019; Duguma, & Han, 2018) assessed deposits as the ratio of aggregate deposits to aggregate assets.

$$Deposits = \frac{Total\ Deposits}{Total\ Assets}$$

### 3.6.3 Moderating Variable

#### 3.6.3.1 Credit Risk

It is possible for the management of credit risk to enhance the financial performance of financial institutions. In a comparable manner, Kariuki (2017) finds that the process of identifying credit risk, as well as analyzing credit risk, monitoring credit risk, and controlling credit risk, all lead to an increase in the financial performance of MFIs. The level of credit risk was determined using a metric called portfolio at risk over 30 days (PAR30), which was calculated by dividing the overall loan portfolio by the loan portfolio including loans that were at least 30 days past due.

$$PAR\ 30 = \frac{Loan\ Portfolio\ with\ 30\ days\ overdue\ or\ more}{Total\ Loan\ Portfolio}$$

### 3.7.4 Control Variables

This study controlled for a number of parameters based on previous research in the field in order to isolate the effects of MFIs' financing structures on financial performance;

#### 3.7.4.1 Yield on Gross Loan Portfolio

This metric takes into account both the income generated by the loan portfolio and the average interest rate that the MFI charges to borrowers (Srinivasan, 2009). The ratio of yield on loan portfolio and operational costs to total assets will be utilized in this analysis (Abate, Borzaga, and Getnet, 2014; Kar, 2012).

$$\text{Yield on gross loan portfolio} = \frac{\text{Gross loan portfolio} + \text{Operating expenses}}{\text{Total Assets}}$$

### 3.7.4.2 Firm Size

In this investigation, the natural logarithm of a company's total assets is used to ascertain the financial performance of the business Abate, Borzaga, and Getnet (2014) as well as Bogan, Johnson, and Mhlanga (2007).

$$\text{Firm Size} = \text{Natural Logarithm of Total Assets}$$

### 3.7.4.3 Average Loan Size.

The average loan size is determined by the ratio of the gross loan portfolio to the total number of active borrowers (Naz, Salim, Rehman, Ahmad, and Ali, 2019).

$$\text{Average Loan Size} = \frac{\text{Gross loan portfolio}}{\text{No. of active borrowers}}$$

## 3.8 Hierarchical Multiple Regression

In hierarchical multiple regression, the effects of a moderating variable are analyzed to see how they interact with other variables. We will examine the interaction effect between the independent variable and the moderator to evaluate whether or not the influence on the dependent variable is statistically significant. This will allow us to assess whether or not moderation is present.

An effect of moderation could be either enhancing, in which case an increase in the moderator would result in the predictor's influence on the outcome being magnified; buffering, in which case an increase in the moderator would result in the influence of the predictor being decreased; or antagonistic, in which case an increase in the moderator would result in the influence of the predictor being nullified. In order to moderate, you will need to provide evidence that there is a connection between the independent variable and the dependent variable.

Multiple regression analysis was applied to evaluate hypotheses in this study. Baron & Kendrick (1986)

The following kind of regression model was utilized:

**Model 1.** Testing the effect of control variables on the financial performance.

$$ROA = \beta_0 + \beta_1 YLP_{it} + \beta_2 MFS_{it} + \beta_3 ALS_{it} + \varepsilon_{it}$$

**Model 2.** Testing the effect of independent variable on financial performance.

$$ROA = \beta_0 + \beta_1 YLP_{it} + \beta_2 MFS_{it} + \beta_3 ALS_{it} + \beta_4 EAR_{it} + \beta_5 DAR_{it} + \beta_6 REAR_{it} \\ + \beta_7 DEPAR_{it} + \varepsilon_{it}$$

**Model 3.** Testing the effect of the moderator on financial performance.

$$ROA = \beta_0 + \beta_1 YLP_{it} + \beta_2 MFS_{it} + \beta_3 ALS_{it} + \beta_4 EAR_{it} + \beta_5 DAR_{it} + \beta_6 REAR_{it} \\ + \beta_7 DEPAR_{it} + \beta_8 PAR30_{it} + \varepsilon_{it}$$

**Model 4.** Introducing the first interaction term between credit risk and equity capital on financial performance.

$$ROA = \beta_0 + \beta_1 YLP_{it} + \beta_2 MFS_{it} + \beta_3 ALS_{it} + \beta_4 EAR_{it} + \beta_5 DAR_{it} + \beta_6 REAR_{it} \\ + \beta_7 DEPAR_{it} + \beta_8 PAR30_{it} + \beta_9 PAR30_{it} * EAR + \varepsilon_{it}$$

**Model 5.** Introducing the second interaction term between credit risk and debt on financial performance.

$$ROA = \beta_0 + \beta_1 YLP_{it} + \beta_2 MFS_{it} + \beta_3 ALS_{it} + \beta_4 EAR_{it} + \beta_5 DAR_{it} + \beta_6 REAR_{it} \\ + \beta_7 DEPAR_{it} + \beta_8 PAR30_{it} + \beta_9 PAR30_{it} * EAR + \beta_{10} PAR30_{it} \\ * DAR + \varepsilon_{it}$$



**Model 6.** Introducing the third interaction term between credit risk and retained earnings on financial performance.

$$\begin{aligned} \text{ROA} = & \beta_0 + \beta_1 \text{YLP}_{it} + \beta_2 \text{MFS}_{it} + \beta_3 \text{ALS}_{it} + \beta_4 \text{EAR}_{it} + \beta_5 \text{DAR}_{it} + \beta_6 \text{REAR}_{it} + \\ & \beta_7 \text{DEPAR}_{it} + \beta_8 \text{PAR30}_{it} + \beta_9 \text{PAR30}_{it} * \text{EAR} + \beta_{10} \text{PAR30}_{it} * \text{DAR} + \beta_{11} \text{PAR30}_{it} * \\ & \text{REAR} + \varepsilon_{it} \end{aligned}$$

**Model 7.** Introducing the fourth interaction term between credit risk and deposits on financial performance.

$$\begin{aligned} \text{ROA} = & \beta_0 + \beta_1 \text{YLP}_{it} + \beta_2 \text{MFS}_{it} + \beta_3 \text{ALS}_{it} + \beta_4 \text{EAR}_{it} + \beta_5 \text{DAR}_{it} + \beta_6 \text{REAR}_{it} + \\ & \beta_7 \text{DEPAR}_{it} + \beta_8 \text{PAR30}_{it} + \beta_9 \text{PAR30}_{it} * \text{EAR} + \beta_{10} \text{PAR30}_{it} * \text{DAR} + \beta_{11} \text{PAR30}_{it} * \\ & \text{REAR} + \beta_{12} \text{PAR30}_{it} * \text{DEPAR} + \varepsilon_{it} \end{aligned}$$

Whereby:

ROA = Return to assets

$\beta_0$  = constant

$\beta_1$  = coefficients

EAR= Equity to assets return

DAR= Debt to assets return

REAR=Retained Earnings to assets return

DEPAR= Deposits to assets return

YLP=Yield on gross loan portfolio

MFS = Microfinance firm size

ALS= Average loan size

PAR30= Portfolio at risk over 30 days

$\varepsilon_{it}$  = represent error term

### 3.9 Data Analysis

The Hausman test was used to choose between fixed effect and random effect regression models. The null hypothesis (H0) supports fixed effect, while the alternative

hypothesis ( $H_a$ ) favors the random effect regression model. Using descriptive and inferential statistics, the dependent and independent variables as well as the results of a panel data regression analysis were analyzed. Included in descriptive statistics are percentages, the mean, and standard deviations. The data was analyzed inferentially using Autocorrelation and Hierarchical multiple regression models.

### **3.10 Regression and Panel Data Diagnostic Tests**

The hypotheses were examined using multiple regression analyses and panel data. Consequently, several diagnostic procedures were conducted, as described below:

#### **3.10.1 Normality Test**

Normal distribution is assumed by regression models for valid hypothesis testing. This hypothesis was examined with the Jarque-Bera test for normality. The test hypothesizes that the distribution is normal, signifying that the null hypothesis predicts the residual distribution to be normal. If the p value is greater than 0.05, the data have a normal distribution, according to the guiding principle.

#### **3.10.2 Multicollinearity Test**

Multicollinearity is a statistical term referring to the correlation of multiple independent variables within a model. Multicollinearity refers to the linear relation between two or more variables, specifically the explanatory variables. In certain circumstances, a greater degree of association between variables can cause significant issues with the model's estimates and produce incorrect regression results. This research examined multicollinearity using the Variance Inflation Factor (VIF); a VIF value greater than 10 indicates the presence of multicollinearity in the data (Alin, 2010). Similarly, multicollinearity was examined based on the results of pairwise correlation, where it is presumed that a correlation coefficient greater than 0.80 indicates multicollinearity. The

presence of multicollinearity was resolved by modifying the measurements or eliminating the variable.

### **3.10.3 Test for Autocorrelation**

The correlation between some observed data based on time series or data in a given time or data that is cross-sectional can be referred to as autocorrelation. In a linear regression model, this is an attempt to evaluate whether or not there is a correlation between mistakes in the  $t$  period and errors in the  $t-1$  period. Autocorrelation happens when there are continuing observations in a time series, which causes this problem of the residual from one observation to another. This leads to the appearance of autocorrelation. In the investigation, a test called the Woodridge test for autocorrelation will be utilized. This approach is taken into consideration due to the fact that it may be utilized in a variety of settings and is simpler to put into practice. The statement "there is no first-order autocorrelation" serves as the test's null hypothesis, while the statement "autocorrelation" serves as the test's alternative hypothesis. When  $p$  is less than 0.05, this suggests that there is no autocorrelation. This is the driving concept.

### **3.10.4 Woolridge Serial Correlation Test.**

A separate Woolridge for serial correlation test is conducted for each of the independent variables in the model; individual significance. This test is used to determine whether each of independent variables has partial effect on dependent variable or not.

### **3.10.5 Heteroskedasticity Test**

When the error term in the model does not have a constant variance, an econometric problem known as heteroscedasticity might occur. Wamono, von Rosen, & Singull,(2021). Models in the field of econometrics demand that the error term should have a constant mean and variance. Testing for heteroscedasticity with the Breusch-

Pagan and Cook-Weisberg methods. If the result of the Breusch-Pagan and Cook-Weisberg test is greater than 0.05, this indicates that there is no constant variable.

### **3.10.6 Panel Unit Root Test**

Using time-series data, the research examined stationarity. Stationary time series data are those whose statistical properties, such as mean, variance, and covariance, remain constant over time and in any sample of data (Salles, Belloze, Porto, Gonzalez, & Ogasawara, 2019). In all econometric investigations, time series must be tested for stationarity, according to Gujarati (2003). Non-stationary data results in pseudo-regression. The unit root test for the variables was examined using Fisher's type test and Breitung (2001). For both analyses, the null hypothesis is that the panel is stationary. If the unit origin is identified, the issue has been resolved through initial differentiation.

*Null hypothesis (H<sub>0</sub>): All panels contain a unit root.*

*The alternative hypothesis (H<sub>1</sub>): At least one panel is stationary.*

The null hypothesis can be rejected at all conventional significance levels for all variables of the investigation, indicating that no unit root was present in our data.

### **3.10.7 Research Model Specification**

Testing for omitted variables is essential in regression because it implies that the model's error term and independent variables are uncorrelated. Consequently, using the Ramsey RESET test, the study will determine if the model has been improperly specified. If the threshold of the Ramsey RESET test is greater than 0.05, it implies that the model does not contain omitted variables.

### **3.10.8 Ethical Consideration**

The researcher was ethical throughout the study by respecting the rights of others and remaining honest. The researcher ensured objectivity by basing data presentation, analysis, and interpretation solely on the collected data. The School of Graduate Studies at Moi University evaluated the proposal for ethical approval.

After obtaining these approvals, the researcher requested permission to acquire and analyze data from the National Commission for Science, Technology, and Innovation (NARCOSTI). The study's findings were disseminated to relevant parties via conferences and publications in peer-reviewed journals. The researcher was responsible for collecting and analyzing only the data required to attain the objectives of the study.

## CHAPTER FOUR

### DATA ANALYSIS, PRESENTATION, AND INTERPRETATION

#### 4.1 Introduction

The findings of the study are presented and discussed in this chapter. This chapter is divided into four main sections: descriptive statistics, diagnostic tests, correlation analysis, and regression analysis.

#### 4.2 Descriptive Statistics

This subsection contains the descriptive statistics (mean, median, standard deviation, minimum and maximum variables, and quantiles) for each variable used in the study. Table 4.1 provides a summary of the statistics. ROA, a measure of financial performance among MFIs, had a mean of 0.02 (minimum of -1.45 and maximum of 0.59; standard deviation of 0.08), indicating that MFIs reported very low profits on average. The large standard deviation indicates that performance is highly variable. In addition, equity capital had a mean of 0.33 (minimum -0.53 and maximum 1.00; standard deviation 0.28), debt capital had a mean of 0.23 (minimum 0.00 and maximum 0.83; standard deviation 0.211), and deposits had a mean of 0.34 (minimum 0.00 and maximum 0.86; standard deviation 0.22). The mean PAR30 value ranged from (0.00 to 0.58, with a standard deviation of 0.13). The mean YLP was 0.32 (minimum = 0.01, maximum = 1.40; standard deviation = 0.20). The mean MFI size was 21.30 (range: 15.16 to 27.12; standard deviation: 2.16). The average loan size (ALS) was 2.76 (minimum = 1.10 and maximum = 4.34; standard deviation = 0.60).

**Table 4.1: Summary Table of Variables**

Variable	N	Mean	S.D.	----- Quantiles -----				
				Min	.25	Mdn	.75	Max
ROA	310	0.02	0.08	-1.45	0.00	0.02	0.05	0.59
YLP	313	0.32	0.20	0.01	0.21	0.30	0.37	1.40
MFS	310	21.30	2.16	15.16	19.96	20.92	22.62	27.12
ALS	310	2.76	0.60	1.10	2.34	2.69	3.19	4.34
ETA	310	0.33	0.28	-0.53	0.16	0.28	0.51	1.00
DTA	310	0.23	0.21	0.08	0.05	0.20	0.36	0.83
RETA	310	-0.03	0.18	-0.99	-0.05	0.00	0.03	0.47
DEPTA	310	0.34	0.21	0.00	0.19	0.32	0.47	0.86
PAR30	310	0.13	0.13	0.00	0.05	0.08	0.16	0.58

**Source: Field data, (2023)**

### 4.3 Diagnostic Tests

The assumptions of the traditional linear regression model and their diagnostic tests were evaluated on the data sets. Normality tests, multicollinearity tests, unit root tests, heteroscedasticity tests, autocorrelation tests, and specification error tests were performed as robustness tests.

#### 4.3.1 Normality Test

This study employed Jarque-Bera to test for normality. The null hypothesis of the test is that residuals follow a normal distribution. The results presented in Table 4.2 demonstrate that the normality assumption cannot be rejected because the p-value is greater than 0.05.

**Table 4.2: Normality test**

Jarque-Bera	normality test: .0318 Chi(2)	.9842
Jarque-Bera	test for Ho: normality:	

**Source: Field data, (2023)**

#### 4.3.2 Multicollinearity Test

Multi-collinearity may exist when the explanatory variables show a significant correlation. Multicollinearity has an impact on how regression coefficients are interpreted (Keith, 2006). The Variance inflation factor (VIF), in addition to the pairwise wise correlation, is another method for assessing multicollinearity. If the VIF value is greater than 10, then multicollinearity is evident (Gujarati, 2012). Table 4.3 displays the findings of the VIF test. The values range between 1.15 and 1.83; 10, demonstrating the fact that multicollinearity is not an issue for the variables under study.

**Table 4.3: Multicollinearity**

Variable	VIF	1/VIF
MFS	1.85	0.540334
DEPAR	1.64	0.611313
EAR	1.44	0.696583
PAR30	1.38	0.725805
ALS	1.35	0.738611
REAR	1.26	0.792692
DAR	1.17	0.852932
YLP	1.15	0.866573
Mean VIF	1.41	

**Source: Field data, (2023)**



### 4.3.3 Test for Heteroskedasticity

The Breusch-Pagan and Cook-Weisberg test was used to investigate the possibility of heteroskedasticity, and the findings are summarized in Table 4.4. The results indicate that the null hypothesis was not rejected ( $\text{Chi}^2(8) = 1.34$  and  $p\text{-value} = 0.2479 > 0.05$ ). As a result, the constant variance assumption was satisfied.

**Table 4.4: Breusch-Pagan / Cook-Weisberg Test for Heteroscedasticity**

---

Ho: Constant variance  
 Variables: fitted values of ROA  
 $\text{chi}^2(1) = 1.34$   
 Prob >  $\text{chi}^2 = 0.2479$

---

**Source: Field data, (2023)**

### 4.3.4 Autocorrelation Test

The Wooldridge test was used in the study to examine the possibility of autocorrelation. As can be seen from the data presented in table 4.5, the p-values are higher than 0.05; hence, it appears that the null hypothesis was not successfully rejected. This indicates that the panel data set did not display any signs of autocorrelation.

**Table 4.5: Wooldridge test for autocorrelation in panel data**

---

Wooldridge test for autocorrelation in panel data  
 H0: no first order autocorrelation  
 $F(1, 30) = 803$   
 Prob > F = 0.3773

---

**Source: Field data, (2023)**

#### 4.3.5 Unit Root Test

If the mean and variance of a time series remain constant throughout time, this is referred to as stationarity (Gujarati, 2004). In contrast, a nonstationary time-series model, which is also referred to as a random walk model, has a mean and a variance that are continuously changing over time. Additionally, the simple correlation coefficient between the X variable and its lagged variable is affected by variables other than just the distance between the two variables (Studenmund, 2011).

In the domains of economics and finance, the effects of time-related or seasonal shocks that occur in a single period can have a major impact on subsequent periods. During the course of the inquiry, both the Breitung test and the Fisher's type test were utilized. During this particular investigation, the following hypothesis was taken into consideration.

*Null hypothesis (H<sub>0</sub>): All panels contain a unit root.*

*The alternative hypothesis (H<sub>1</sub>): At least one panel is stationary.*

The p-values in Table 4.6 show that for all the study's variables, At all conventional significance levels, the null hypothesis can be rejected, proving the data did not suffer from unit root. This meant that the data's means and variances do not vary with time, hence using OLS to analyze the data can yield meaningful inferential results (Gujarati, 2012).

**Table 4.6: Unit Root Test**

	<b>Fishers Type</b>	<b>Breitung</b>
ROA	9.259	-2.976
p value	0.001	0.000
MFS	16.794	-4.373
p value	0.000	0.000
ALS	15.563	-1.729
p value	0.000	0.038
YLP	6.443	-2.064
p value	0.000	0.000
EAR	17.697	-3.870
p value	0.000	0.000
DAR	1.970	-2.188
p value	0.02	0.014
REAR	10.726	-3.346
p value	0.000	0.000
DEPAR	14.248	-1.760
p value	0.000	0.000
PAR	4.288	-2.897
p value	0.000	0.000

**Source: Field data, (2023)**

#### 4.3.6 Specification Error Test

The results of the Ramsey RESET test are displayed in Table 4.7. The probability values of the computed statistics in the Ramsey RESET test 0.0651 exceed the threshold value of 0.05, indicating that the model does not appear to be improperly specified.

**Table 4.7: Ramsey RESET (test using powers of the fitted values of ROA)**

Ramsey	RESET test using powers of the fitted values of ROA
Ho: model has no omitted variables	
$F(3, 288) = 2.43$	
Prob > F = 0.0651	

**Source: Field data, (2023)**

#### 4.4 Correlation Analysis

The nature and magnitude of the relationship between research variables are revealed by correlation analysis. The correlation analysis coefficients are presented in a matrix,

as shown in Table 4.8. The Pearson pairwise correlation results in the table indicate that equity capital and financial performance are positively correlated ( $r=0.3939$ ;  $p< 0.05$ ). The table also reveals a positive correlation between debt capital and financial performance ( $r = 0.1326$ ;  $p< 0.05$ ). In addition, the correlation analysis revealed a positive relationship between retained earnings and financial performance ( $r = 0.4671$ ;  $p 0.05$ ). Moreover, there was a positive correlation between deposits and financial performance ( $r = 0.3343$ ;  $p > 0.05$ ). In addition, portfolio risk and financial variables were negatively correlated ( $r = -0.5130$ ;  $p 0.05$ ). In addition, there was a positive relationship between MFI size and financial performance ( $r=0.3868$ ;  $p> 0.05$ ). In addition, the correlation matrix demonstrates that average loan size was positively associated with financial performance ( $r = 0.3939$ ;  $< 0.05$ ). Lastly, there was a positive correlation between yield on aggregate loan portfolio and financial performance ( $r = 0.3308$ ;  $< 0.05$ ).

**Table 4.8: Pairwise Correlation Analysis**

	ROA	YLP	MFS	ALS	EAR	DAR	REAR	DEPAR	PAR30
ROA	1.0000								
YLP	0.3308*	1.0000							
MFS	0.3868*	-0.0743	1.0000						
ALS	0.3939*	-0.0901	0.2551*	1.0000					
EAR	0.3984*	0.1981*	-0.2368*	0.2142*	1.0000				
DAR	0.1326*	0.1697*	-0.0309	-0.1877*	-0.1626*	1.0000			
REAR	0.4671*	0.1809*	0.2236*	0.1753*	0.1197*	0.0549	1.0000		
DEPAR	0.3343*	0.0946	0.5541*	0.0361	-0.0530	-0.0589	0.3275*	1.0000	
PAR30	-0.5130*	-0.2405*	-0.1367*	0.1290*	-0.2381*	-0.2197*	-0.2772*	-0.1933*	1.0000

**P\* < 0.05**

**Source: Field data, (2023)**

#### 4.5 Hausman Test

The Hausman test determines whether the regression results of a fixed effect or random effect model are suitable. The null hypothesis for the Hausman test suggests using a random effect estimator to estimate panel data, whereas the alternative hypothesis suggests a fixed effect model is a superior estimator. If the null hypothesis is denied ( $p < 0.05$ ), the fixed effect model must be utilized. The results of table 4.11 of the Hausman test ( $\chi^2(7) = 24.21$ ,  $p < 0.05$ ) support the use of the fixed effects model to examine the direct effects.

**Table 4.9: Hausman Test with Direct Effect Regression Model**

	---- Coefficients ----			
	(b) Fe	(B) re	(b-B) Difference	$\sqrt{\text{diag}(V_b - V_B)}$ S.E.
YLP	.1782266	.2310603	-.0528337	.0259949
MFS	.0547825	.0514755	.003307	.0084115
ALS	.1655965	.1650553	.0005412	.0126105
EAR	.2523052	.3006965	-.0483913	.0138602
DAR	.3817262	.3818905	-.0001643	.0350458
REAR	.3390117	.3623663	-.0233546	.018498
DEPAR	.2253628	.2194091	.0059538	.0207723

b = consistent under  $H_0$  and  $H_a$ ; obtained from xtreg

B = inconsistent under  $H_a$ , efficient under  $H_0$ ; obtained from xtreg

Test:  $H_0$ : difference in coefficients not systematic

$$\chi^2(7) = (b-B)'[(V_b - V_B)^{-1}](b-B)$$

$$= 24.21$$

$$\text{Prob} > \chi^2 = 0.0010$$

**Source: Field data, (2023)**

#### 4.6 Testing the Effect of the Control Variables

This study investigates the relationship between the control variables (average loan size, yield on gross loan portfolio, and firm size) and the financial performance of microfinance firms. Appendix IV contains the results of the Hausman test, which support the use of the fixed-effect regression model. Table 4.10 illustrates the positive and statistically significant influence of the three control factors on the financial performance of MFIs, specifically yield on total loan portfolio MFI size ( $\beta = 0.2347$ ,  $\rho < 0.05$ ) and average loan size ( $\beta = 0.1725$ ,  $\rho < 0.05$ ). They account for an average variance of 25.28 % in the financial performance of Kenyan microfinance firms.

**Table 4.10: Regression results for Control Variables**

Fixed-effects (within) regression	Number of obs = 310					
Group variable: A	Number of groups = 31					
R-sq: within = 0.2528	Obs per group: min = 10					
between = 0.3010	Avg = 10.0					
overall = 0.2856	Max = 10					
	F(3,276) = 31.13					
corr(u_i, Xb) = -0.1662	Prob > F = 0.0000					
ROA	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
YLP	.2347263	.0925515	2.54	0.012	.0525297	.416923
MFS	.0950501	.0149286	6.37	0.000	.0656616	.1244386
ALS	.1725085	.0357564	4.82	0.000	.1021186	.2428985
_cons	-2.627126	.3161808	-8.31	0.000	-3.249558	-2.004693
sigma_u	.28477244					
sigma_e	.18076501					
Rho	.71279241 (fraction of variance due to u_i)					
F test that all u_i=0: F(30, 276) = 19.24 Prob > F = 0.0000						

Source: Field data, (2023)

#### 4.7 Testing the Direct Effect

In this subsection, the direct effect is examined by regressing the outcome variable (financial performance) against the financing structure dimension (equity capital, debt capital, retained earnings and deposits). The fixed effect regression model is used, according to the Hausman test. Table 4.11 displays the results for the direct effect.

The findings demonstrate that financing structure is associated with 43.39% variation in the financial performance of microfinance firms in Kenya. Further, equity capital had a significant and positive effect on financial performance ( $\beta = 0.252, \rho < 0.05$ ) indicating that for every unit increase in equity capital, financial performance rose by 0.252 units. The findings also show that debt capital had a significant and positive impact on MFIs financial performance ( $\beta = 0.382, \rho < 0.05$ ), and that an increase in debt capital was directly correlated with a 0.382 unit increase in firm financial performance. Comparably, retained earnings has a positive and significant effect on financial performance ( $\beta = 0.339, \rho < 0.05$ ), meaning that a rise in retained earnings results in an increase in financial performance by 0.339. Table 4.11 also indicates that deposits had a significant positive effect on MFIs' financial performance MFIs ( $\beta = 0.225, \rho < 0.05$ ); specifically, an increase in deposits is expected to result in a change in MFIs' financial performance of 0.225 units for every unit increase.

**Table 4.11: Financing structure and financial performance - Fixed Effect**

Fixed-effects (within) regression	Number of obs =	310				
Group variable: A	Number of groups =	31				
R-sq: within = 0.4339	Obs per group: min =	10				
between = 0.5981	Avg =	10.0				
overall = 0.5495	Max =	10				
	F(7,272) =	29.79				
corr(u_i, Xb) = 0.2029	Prob > F =	0.0000				
ROA	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
YLP	.1782266	.0819155	2.18	0.030	.0169576	.3394956
MFS	.0547825	.0142722	3.84	0.000	.0266844	.0828806
ALS	.1655965	.0319662	5.18	0.000	.1026639	.228529
EAR	.2523052	.0523742	4.82	0.000	.1491949	.3554155
DAR	.3817262	.0871257	4.38	0.000	.2101997	.5532527
REAR	.3390117	.077662	4.37	0.000	.1861167	.4919066
DEPAR	.2253628	.0798307	2.82	0.005	.0681983	.3825274
_cons	-1.970238	.2910362	-6.77	0.000	-2.543208	-1.397268
sigma_u	.2188167					
sigma_e	.15849098					
Rho	.65589941					(fraction of variance due to u_i)
F test that all u_i=0: F(30, 272) = 14.20 Prob > F = 0.0000						

**Source: Field data, (2023)**

#### 4.8 Testing Hypotheses for the Direct Effect

To examine the direct effect, all predictor variables were included in model 1 (which examined the effect of the control variables). Regression was performed using both fixed and random effects. The results of the Hausman test validated the use of the results of the fixed effect regression to assess the direct hypotheses. The outcomes of the fixed effect regression are displayed in Table 4.10. The direct hypotheses were examined, and the results were interpreted as described below.



*H<sub>01</sub>: Equity capital has no significant effect on financial performance of microfinance institutions in Kenya.*

Based on the findings that Equity capital had a significant beta coefficient ( $\beta_1 = 0.2523052$ ,  $p < 0.05$ ), the null hypothesis was rejected and it was determined that equity capital had a positive and statistically significant effect on the financial performance of microfinance institutions in Kenya. This indicated that a change of 0.154 equity capital results in an increase of 0.154 financial performance units. The results are consistent with Parvin et al., (2020) and contradict Abdulhakim (2020), who discovered that equity capital had a negative and statistically significant influence on the performance of MFIs. In contrast to the agency costs hypothesis, which states that increasing leverage or decreasing the capital-assets ratio is associated with a decrease in the agency costs of outside equity and an improvement in firm performance, the results of this study indicate that well-capitalized MFIs are more likely to report superior performance.

*H<sub>02</sub>: Debt capital has no significant effect on financial performance of microfinance institutions in Kenya*

According to the results, debt capital had a significant positive beta coefficient ( $\beta = 0.3817262$ ,  $p < 0.05$ ), indicating that it had a positive and significant impact on financial performance. Debt capital had a positive and statistically significant effect on the financial performance of MFIs in Kenya, so the null hypothesis was rejected. This suggests that debt financing is a positive determinant of MFIs' financial performance (Duguma, & Han, 2018). The results are consistent with the findings of Kar (2012), Mersland and Urgeghe (2013), Bayai and Ikhida (2016), and Hamada (2010). However, Hartarska and Nadolnyak (2007) found a negative correlation between debt capital and

financial performance, whereas Geresem and Michael (2021) found no correlation between debt capital and financial performance. The results support Berger and Udell's (2006) claim that high leverage reduces agency conflict between owners and managers by incentivizing or pressuring managers to act more in the shareholders' best interests.

*H<sub>03</sub>: Retained earnings has no significant effect on financial performance of microfinance institutions in Kenya*

The findings presented in model 2 revealed that retained earnings had beta coefficient estimates that were statistically significant ( $\beta = 0.3390117$ ,  $p < 0.05$ ). Thus, the null hypothesis was rejected and it was determined that retained earnings had a positive and statistically significant impact on the financial performance of microfinance institutions in Kenya. The findings are consistent with those of Omollo et al. (2018), Khachatryan, Hartarska, and Grigoryan (2017), and Kimaru and Kinyua (2018). A unit increase in debt capital led to a 0.339% increase in financial performance, according to the results. In contrast to Mwangi (2016), who discovered a negative correlation between retained earnings and ROA, the results contradict his findings. In Rwanda, Rutanga, Barayandema, and Mutarindwa (2021) discovered that retained earnings had no effect on return on assets and return on equity, but did affect financial performance. This study demonstrates that MFIs with a high retention policy are more likely to report improved financial performance. Literature has established the significance of retained earnings for MFIs. Glaubitt, Feist, and Beck (2009), for instance, claim that a significant number of MFIs support their expansion through the systematic mobilization of local savings, commercial refinancing loans, and retained earnings. Additionally, the author asserts

that funding through commercial loans is difficult for even financially stable MFIs, and that funding through retained earnings is only accessible to MFIs with enormous profits.

*H04: Deposits has no significant effect on financial performance of microfinance institutions in Kenya*

Deposits had a positive and statistically significant effect on the financial performance of MFIs in Kenya ( $\beta = .22536$ ,  $p < 0.05$ ). H04 was therefore rejected, and the results are consistent with those of Duguma et al. (2018), Abrarn and Javad (2016), and Parvin et al. (2020). Similar conclusions were reached by Khachatryan et al. (2017), who discovered that while previous-year deposits were associated with a significant increase in ROA, current-year deposits had no effect on financial performance. One unit of deposit arguably results in a 0.225 unit change in financial performance. The correlation between deposit growth and MFI profitability is believed to be positive, as deposits are a less expensive form of funding. Deposits may enable MFIs to maintain profitability while better managing the fixed costs of loan financing. Therefore, larger deposits enable firms to optimize their capital structure more effectively. Ismail and Possumah (2012) argue further that MFIs finance their operations primarily through the modest deposits they collect from clients. According to the author, deposits are not only a stable source of capital but also a relatively economical one.

#### **4.9 Testing the Hypotheses on Moderating Effect**

The fourth objective was to determine whether credit risk moderates the relationship between the financing structure and the financial performance of MFIs. Before creating the interaction terms, the moderators and predictor variables were mean-centered to test this objective. The interaction terms were gradually incorporated into the regression model. Additionally, modgraphs were used to determine the type of moderation, as

suggested in the literature (Jose, 2008). Aiken & West (1991) also suggest displaying the moderated findings on a moderation graph. Furthermore, it is insufficient to draw the conclusion that there is moderation without taking into account the varying levels of the moderator and predictor variables. In order to test for moderation, the study examined both modgraphs and the beta coefficients of the interaction terms.

Before testing moderation, the moderator must impact the outcome variable. To determine whether credit risk influenced financial performance, the outcome variable was regressed on the moderator while controlling for the predictor variables and the chosen control variables. Table 4.9 and the summary moderation table (model 3) exhibit the results. In response to the results of the Hausman test, the fixed effect regression model was utilized. Table 4.9 demonstrates that credit risk (as measured by PAR30) had a statistically significant negative impact on the financial performance of microfinance institutions in Kenya ( $\beta = -0.6538094$ ,  $p < 0.05$ ). The results are consistent with those of prior research (Bassem, 2012; Gwasi & Ngambi, 2014).

A crucial component for the viability of MFIs is loan repayment, which assesses the quality of the portfolio. It is anticipated that a low repayment rate may reduce the chances of an MFI surviving. Given that lending is MFIs' primary source of income, the analysis results provides evidence to support the hypothesis that increasing exposure to credit risk is connected with reduced MFI performance. This inverse association confirms that a larger risk portfolio will impede good financial performance. In order to guarantee their performance, MFIs should strive to improve the quality of their portfolio that are at risk.

**Table 4.12: Summary moderation table**

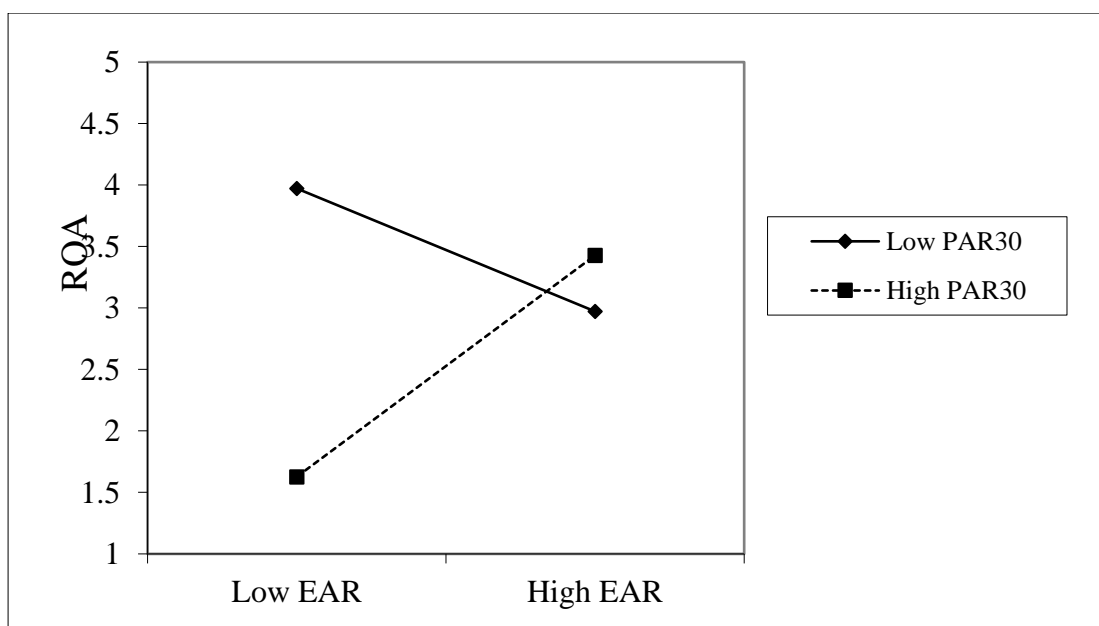
Fixed-effects (within) regression	Number of obs	=	310			
Group variable: A	Number of groups	=	31			
R-sq: within = 0.4970	Obs per group: min	=	10			
between = 0.7316	Avg	=	10.0			
overall = 0.6548	Max	=	10			
	F(8,268)	=	33.10			
corr(u_i, Xb) = 0.3569	Prob > F	=	0.0000			
ROA	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
YLP	.1756117	.0778013	2.26	0.025	.0224323	.3287911
MFS	.0413971	.0137638	3.01	0.003	.0142983	.068496
ALS	.1581211	.0303724	5.21	0.000	.0983222	.2179201
EAR	.2121171	.0503031	4.22	0.000	.1130775	.3111566
DAR	.362778	.0828247	4.38	0.000	.1997081	.5258479
REAR	.2882677	.0765348	3.77	0.000	.1375818	.4389535
DEPAR	.1688923	.0766965	2.20	0.029	.017888	.3198966
PAR30	-.6538094	.1186317	-5.51	0.000	-.8873781	-.4202408
_cons	-1.541456	.2868082	-5.37	0.000	-2.10614	-.9767721
sigma_u	.19274027					
sigma_e	.15044236					
Rho	.62140758	(fraction of variance due to u_i)				
F test that all u_i=0: F(30, 268) = 11.88 Prob > F = 0.0000						

**Source: Field data, (2023)**

Having confirmed that the moderator had a significant effect on the outcome variable, the study proceeded further to assess the effect of the interaction terms. The summary moderation table 4.12 presents the findings for the stepwise addition of the interaction terms, whereas appendix III has the regression results. The following hypotheses are tested using the results of model 7.

*H05a: Credit risk does not significantly moderate the relationship between equity capital and financial performance of microfinance institutions in Kenya.*

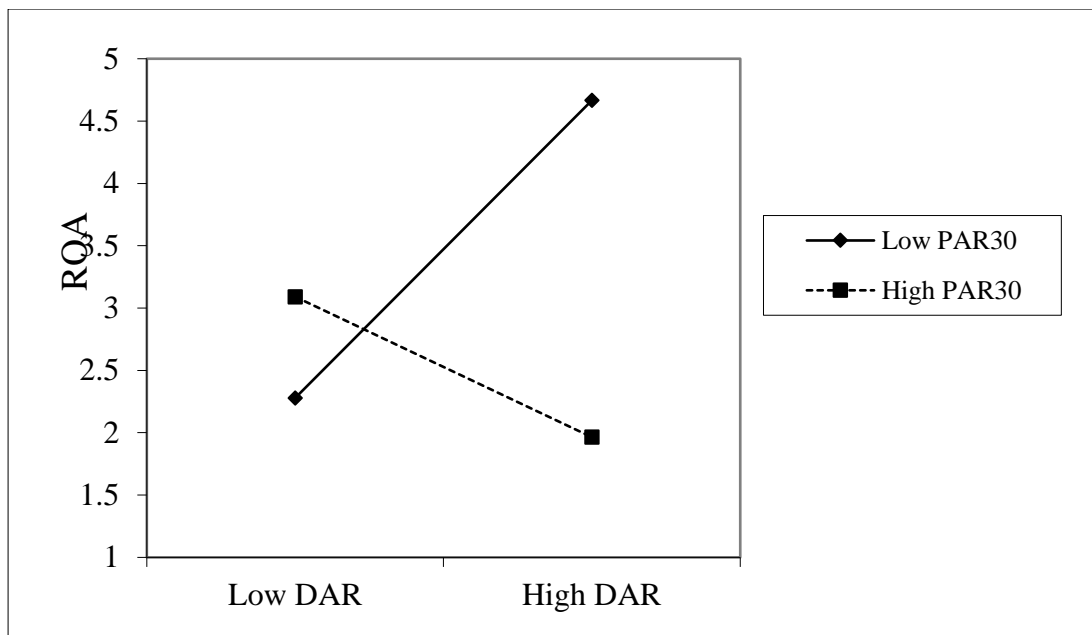
Credit risk had a positive and significant moderating effect on the relationship between equity capital and financial performance ( $\beta = .6994338$ ,  $p < 0.05$ ) therefore, the null hypothesis was rejected. This relationship is further supported by a Modgraph figure 4.1 shown below. Based on the modgraph, MFIs performance is high with low equity capital and low credit risk.



**Figure 4.1: Modgraph for Moderating Effect of credit risk on the relationship between equity capital and financial performance of MFI**

*H05b: Credit risk does not moderate the relationship between debt capital and financial performance of Microfinance institutions in Kenya.*

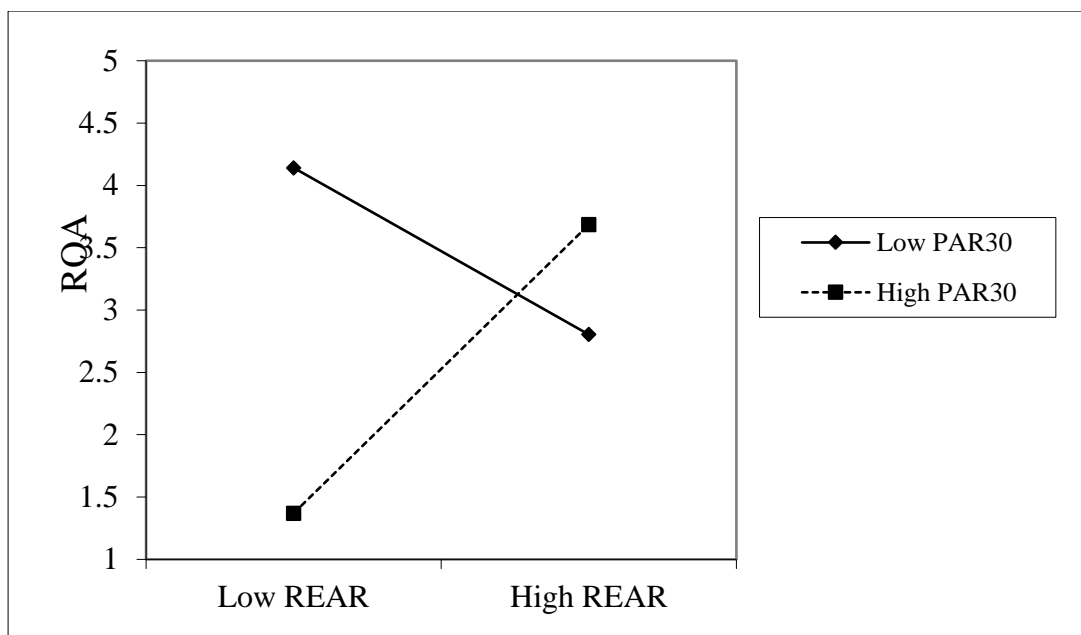
The beta coefficients of the interaction term were positive and significant  $\beta = 0.126$   $p < 0.05$  thus null hypothesis was rejected. However, the beta coefficient of deposits on financial performance changed from  $\beta = -.8784014$ ,  $p < 0.05$ ). The modgraph shown in figure 4.2 reveal that the MFIs financial performance will be high with more debt capital and low credit risk.



**Figure 4.2: Modgraph for Moderating Effect of credit risk on the relationship between debt capital and financial performance.**

*H<sub>05c</sub>: Credit risk does not moderate the relationship between retained earnings and financial performance of microfinance institutions in Kenya.*

The null hypothesis was rejected because Credit Risk had a significant and positive moderating effect on the relationship between debt capital and financial performance ( $\beta = .9128007$ ,  $P < 0.05$ ). In addition, the modgraph depicted in Figure 4.3 indicates that the financial performance of MFIs is strong. According to these results, credit risk moderated the relationship between debt capital and financial performance.

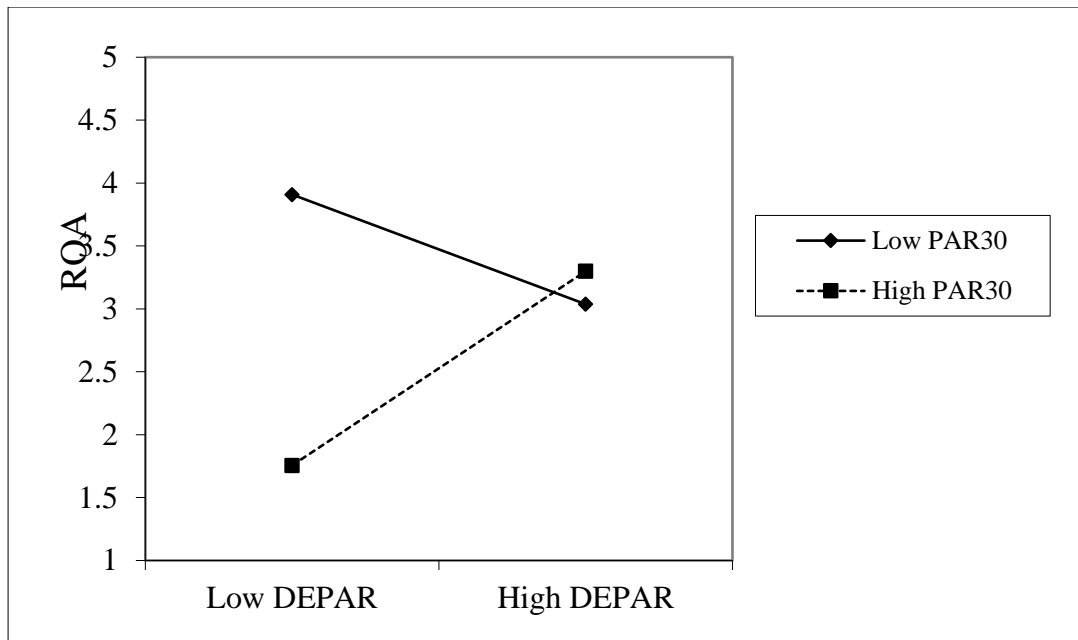


**Figure 4.3: Modgraph on the effect of credit risk on the relationship between retained earnings and financial performance**

*H<sub>05d</sub>: Credit risk does not moderate the relationship between deposits and financial performance of Microfinance institution in Kenya.*

The beta coefficients of the interaction term were positive and significant ( $\beta=0.6035525$ ,  $p < 0.05$ ), thus, the null hypothesis was rejected. Additionally, the modgraph illustrated in figure 4.4 reveal that MFIs performance is high with low deposits and low credit risks. However, with high deposits, a high amount of credit risk appears to improve MFIs' performance. This could be explained by potential prudential regulatory measures, or the depositors may threaten to withdraw savings; thus compelling managers to take measures aimed at boosting profitability.





**Figure 4.4: Modgraph on the effect of credit risk on the relationship between deposits and financial performance**

**Table 4.13: Hypotheses Summary**

<b>Hypotheses</b>	<b>B</b>	<b>P&lt;0.05</b>	<b>Decision</b>
<b>H<sub>01</sub>:</b> Equity capital has no significant influence on financial performance microfinance institution in Kenya.	0.252	0.000	rejected
<b>H<sub>02</sub>:</b> Debt has no significant effect on financial performance among microfinance institution in Kenya.	0.383	0.000	rejected
<b>H<sub>03</sub>:</b> Retained earning has no significant effect on financial performance among microfinance institution in Kenya.	0.339	0.000	rejected
<b>H<sub>04</sub>:</b> Deposit has no significant effect on financial Performance among microfinance institution in Kenya	0.225	0.000	Rejected
<b>H<sub>05a</sub>:</b> Credit risk does not moderate the relationship between equity capital and financial performance among microfinance institution in Kenya	0.699	0.000	Rejected
<b>H<sub>05b</sub>:</b> Credit risk does not moderate the relationship between debt capital and financial performance among microfinance institution in Kenya	-0.878	0.000	Rejected
<b>H<sub>05c</sub>:</b> Credit risk does not moderate the relationship between retained earnings and financial performance among microfinance institution in Kenya	0.9128	0.000	Rejected
<b>H<sub>05a</sub>:</b> Credit risk does not moderate the relationship between deposit and financial performance among microfinance institution in Kenya	0.6036	0.000	Rejected

**Source: Field data, (2023)**

## CHAPTER FIVE

### SUMMARY OF FINDINGS, CONCLUSION, AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter provides a summary of the study's findings, conclusions, recommendations, condition of the study, and suggestions for future research.

#### 5.2 Summary of Findings and Discussion

The primary objective of the study was to determine whether credit risk moderates the relationship between microfinance institutions in Kenya's financing structure and their financial performance. Overall, the findings suggest that credit risk influenced the relationship among the financing structure and financial performance of MFIs in Kenya.

Due to a lack of data, only 31 of the 53 Kenyan MFIs were considered. Panel data from 2010 to 2019 was used in the study. Several diagnostic were done out.

##### 5.2.1 Relationship between equity and financial performance.

The first objective was to determine whether equity capital affected the financial performance of Kenyan MFIs. On the basis of the findings, it can be concluded that equity capital had a significant and positive impact on the financial performance of microfinance institutions in Kenya ( $\beta = 0.252$ ,  $p < 0.05$ ). According to the study, an increase in shareholder capital results in improved financial performance.

##### 5.2.2 Relationship between debt capital and financial performance.

The second objective was to determine whether debt capital affected the financial performance of Kenyan MFIs. Based on ( $\beta = 0.382$ ,  $p < 0.05$ ), the results demonstrated that debt capital had significant and positive effects on the financial performance of

microfinance organizations in Kenya. The conclusion of the study was that highly leveraged MFIs were more likely to be profitable.

### **5.2.3 Relationship between retained earnings and financial performance**

The third objective was to investigate the relationship between retained earnings and the financial performance of Kenyan microfinance institutions. According to the study, retained earnings had a significant and positive impact on the financial performance of MFIs ( $\beta = 0.339$ ,  $p < 0.05$ ). The findings indicate that MFIs are more likely to report higher profits if they use retained earnings to finance their operations.

### **5.2.4 Relationship between deposits and financial performance**

The fourth objective was to evaluate the impact of deposits on the financial performance of Kenyan microfinance institutions. The financial performance of MFIs in Kenya was observed to be positively and significantly influenced by deposits ( $\beta = 0.225$ ,  $p < 0.05$ ). The findings indicate that deposit mobilization can assist MFIs in achieving enhanced financial performance and, ultimately, independence.

### **5.2.5 The moderating effect of credit risk on the relationship between financing structure and financial performance of MFIs.**

The primary objective of the study was to ascertain whether credit risk moderates the relationship between financing structure and financial performance. Therefore, the first stage of the study was to determine whether credit risk affects the financial performance of MFIs. The outcome demonstrated that credit risk has a negative and statistically significant impact on the financial performance of MFIs ( $\beta = -0.6538$ ,  $p < 0.05$ ). The study concluded, based on this finding that enhancing the quality of MFIs' loan portfolios may improve their financial performance.

#### **5.2.5.1 The Moderating influence of credit risk on the relationship between equity capital and financial performance of MFIs in Kenya.**

The credit risk moderated the relationship between equity capital and financial performance ( $\beta = 0.6994$ ,  $\rho < 0.05$ ). The mod graph revealed that MFIs financial performance is high with low equity capital and low credit risk, suggesting an enhancing effect. Compared to low credit risk, higher financial performance may result from high equity capital and high credit risk. With significant credit risk, shareholders may be more active in monitoring and pressuring management to improve MFIs' performance.

#### **5.2.5.2 The Moderating influence of credit risk on the relationship between debt capital and financial performance of MFIs in Kenya.**

According to the result ( $\beta = -0.878$ ,  $\rho < 0.05$ ), credit risk reduced the relationship between debt capital and financial performance, thus a buffering effect. Debt is viewed as a low-cost source of funding for MFIs. High credit risk MFIs may be viewed as hazardous by lenders, which could harm their chances of obtaining outside funding. Additionally, the advantage of borrowed funds may shrink owing to possible increases in loan costs.

#### **5.2.5.3 The Moderating influence of credit risk on the relationship between retained earnings and financial performance of MFIs in Kenya.**

The results show that credit risk ( $\beta = 0.9128$ ,  $\rho < 0.05$ ) moderates the effect of retained earnings on financial performance. According to the modgraph, MFIs have the highest financial performance, with low retained earnings and low credit risk pointing to a strengthening connection. Even though retained earnings are considered a cheap method of financing MFIs, significant credit risks may lead to demands for more

frequent and substantial dividends from shareholders. This might push managers to boost performance.

#### **5.2.5.4 The Moderating effect of credit risk on the relationship between deposits and microfinance institution financial performance in Kenya.**

The findings show that the association between deposits and MFIs' financial success is moderated by credit risk ( $\beta = 0.6036$   $p < 0.05$ ). The modgraph indicates an enhancing relationship because performance is high with low deposits and low credit risk. High credit risk appears to improve performance in situations where deposits are high. Although it's generally accepted that deposits are a primary source of funding for lending institutions, a high level of deposits may incentivize higher credit risks. This may result in regulatory intervention or depositor cutbacks in savings, which may drive MFIs to adopt more stringent lending guidelines and cost-saving measures, ultimately improving performance.

### **5.3 Conclusion**

The study concluded, based on its findings, that financing structure affects the financial performance of MFIs in Kenya. The objective of the study was to identify the moderating effect of credit risk on the relationship between financing structure and financial performance among Kenyan microfinance institutions. According to previous research, financing structure impacts credit risk, and credit risk impacts financial performance. Therefore, the moderating influence of credit risk on the relationship between financing structure and financial performance using a sample of 31 MFIs from 2010 to 2019 is examined. The results indicate that equity capital, debt capital, retained earnings, and deposits had a positive and statistically significant impact on financial

performance. The study concludes, therefore, that financing structure influences financial performance.

## **5.4 Recommendations**

### **5.4.1 Managerial Implication**

Engaging in financing structure was associated with an improvement in the financial performance of MFIs. Therefore, it's necessary for MFIs to improve on utilization of financing structure so that they can capitalize by minimizing credit risk thus improving on their performance and boost investor confidence.

Deposits are key to enhancing financial performance of MFIs. Therefore, efforts should be made by MFIs to mobilize more on savings/deposits to boost financial performance and utilization of borrowings. In addition, the study suggests policies to consider for the operation of microfinance programs in Kenya, including the improvement of yield on gross loan portfolio, equity capital, and reduction of borrowing funds from donors, as well as the reduction of operating costs, the utilization of resources to generate financial revenue, and the increase of total asset value.

### **5.4.2 Policy Implication**

Firstly, regulatory bodies in Kenya should consider revising and refining their guidelines and supervisory frameworks to account for the moderating influence of credit risk. This may involve implementing more nuanced capital adequacy requirements that take into consideration the composition of financing structures, thereby ensuring that MFIs maintain a balanced mix of equity, debt, retained earnings, and deposits. Such tailored regulations could help mitigate the adverse effects of credit risk on the financial performance of MFIs, contributing to the stability and sustainability of the microfinance sector in Kenya.

Secondly, MFIs operating in Kenya should incorporate risk management strategies that specifically address credit risk into their business models. This entails adopting prudent lending practices, robust credit assessment and monitoring mechanisms, and effective provisioning for potential loan defaults. By doing so, MFIs can enhance their resilience to credit risk fluctuations, which in turn could help maintain or even improve their financial performance, thereby ensuring continued access to funding and support for underserved communities. Overall, this study underscores the importance of aligning regulatory policies and risk management practices with the unique characteristics and challenges faced by microfinance institutions in Kenya, ultimately fostering a more resilient and impactful microfinance sector.

#### **5.4.3 Theoretical Implication**

This research contributes to the pecking order theory by emphasizing the hierarchical relationship between financial performance and financing. The performance of the company is communicated to the public by the pecking order theory. If a business finances itself internally, it is a sign of its strength. If a company finances itself through debt, it indicates management's confidence in the company's ability to meet monthly obligations. If a company finances itself through the issuance of new stock, it is typically a sign that the company believes its stock is overvalued and seeks to profit before the share price falls. Therefore the study concluded that equity capital, debt capital, retained earnings and deposits had a significant effect on financial performance.

#### **5.4.4 Limitation of the Study**

The study on the moderating effect of credit risk on the relationship between financing structure and financial performance of microfinance institutions in Kenya faced several limitations. Firstly, the study's findings were subject to data limitations, as accurate and



comprehensive financial data for microfinance institutions in Kenya were not always readily available or consistently reported. Additionally, the study's reliance on historical financial data did not fully capture the dynamic nature of credit risk and financing structure in the microfinance sector, as these factors could change rapidly in response to external economic and regulatory conditions.

Secondly, the study's focus on a specific geographic region, Kenya, limited the generalizability of its findings to microfinance institutions in other countries or regions with different economic, social, and regulatory environments. Microfinance operations and risk profiles could vary significantly across countries, making it challenging to extrapolate the study's results to a broader context. Furthermore, the study's findings did not account for country-specific factors that influence credit risk and financing decisions in Kenya, potentially overlooking unique variables that could affect the relationship between financing structure and financial performance. Therefore, researchers and practitioners should exercise caution when applying the study's conclusions to microfinance institutions operating in diverse global settings.

### **5.5 Future Research Recommendations**

This study's primary objective was to determine the moderating effect of credit risk on the association between financing structure and financial performance among Kenyan microfinance institutions. Similarly, there is a need for additional research on the moderating effect of credit risk on the relationship between equity, debt, retained earnings, and deposits in order to determine whether or not it actually diminishes the relationship. The study utilized only secondary data. It is therefore recommended that in future researchers can extend the study longitudinally based on the MFIs reports which is preferable for eliciting more detailed information on the subject. In addition,

more research needs to be conducted using different variables that may be relevant to this study and may also consider investigating other risks, as this study was limited to credit risk, and may also expand on the scope of other sectors offering financial services, such as SMEs, insurance firms, and savings and credit cooperative societies, in order to revalidate the model's generalizability.

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## APPENDICES

### Appendix I: List of MFIs in Kenya

- |   |  |
|---|--|
| 1. AAR Credit Services                                    | 25. Mayiana Investments Ltd              |
| 2. Adok Timo  | 26. Milango Financial Services Ltd       |
| 3. African Community Development Foundation               | 27. Molyn Credit Limited                 |
| 4. African Provident Limited t/a Real People Kenya        | 28. Musoni Kenya Ltd                     |
| 5. Bungoma Family Development Programme                   | 29. Opportunity Kenya Ltd                |
| 6. Business Initiative and Management Assistance Services | 30. Pamoja Women Development Programme   |
| 7. Century Microfinance Bank Limited                      | 31. Platinum Credit                      |
| 8. Digital Resource Center Microfinance                   | 32. Rafiki Microfinance Bank Ltd         |
| 9. Ebony Foundation                                       | 33. Remu DTM Ltd                         |
| 10. Equity Bank Kenya                                     | 34. Riverbank Credit SACCO Limited       |
| 11. Fadhili Africa Limited                                | 35. Rupia Micro-Credit Limited           |
| 12. Family Bank Limited                                   | 36. Rural Agency for Development         |
| 13. Faulu Microfinance Bank Limited                       | 37. Samchi Credit                        |
| 14. Formerly K-Rep Bank                                   | 38. SEED Development Group               |
| 15. Greenland Fedha Ltd                                   | 39. SISDO                                |
| 16. Jamii Bora Kenya Ltd                                  | 40. SMEP Microfinance Bank Limited       |
| 17. Jitegemea Credit Scheme                               | 41. Springboard Capital Limited          |
| 18. Juhudi Kilimo LLC                                     | 42. Sumac Microfinance Bank              |
| 19. Kenya Ecumenical Church Loan Fund                     | 43. Taifa Option                         |
| 20. Kenya Entrepreneurship Empowerment Foundation         | 44. U & I Microfinance Bank Limited      |
| 21. Kenya Post Office Savings Bank                        | 45. Ubiashara Kenya                      |
| 22. Kenya Women Microfinance Bank Limited                 | 46. Ufanisi Afrika                       |
| 23. Letshego Kenya Limited                                | 47. Unaitas                              |
| 24. Makao Mashinani Housing Microfinance Limited          | 48. Uwezo Microfinance Bank Ltd          |
|   | 49. Vision Fund Kenya                    |
|   | 50. Wakenya Pamoja Sacco Society Limited |
|   | 51. Women Economic Empowerment Consort   |
|   | 52. Yehu Microfinance Trust              |
|   | 53. Youth Initiatives-Kenya              |





## Appendix III: Regression Results

Dependent variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
ROA	Coef. (Std. Err.)	Coef. (Std. Err.)	Coef. (Std. Err.)	Coef. (Std. Err.)	Coef. (Std. Err.)	Coef. (Std. Err.)	Coef. (Std. Err.)
_cons	-2.627(0.316)**	-1.970 (0.291)**	-1.541(0.287)**	-1.585 (0.285)**	-1.516(0.110)**	-1.418 (0.289)**	-1.355(0.286)**
YLP	0.235 (0.093)**	0.178 (0.082)**	0.176 (0.077)**	0.171 (0.077)**	0.186 (0.073)**	0.166 (0.076)**	0.167 (0.075)**
MFS	0.095(0.015)**	0.054(0.014)**	0.041(0.014)**	0.043(0.014)**	0.041(0.027)**	0.037(0.014)**	0.034(0.014)**
ALS	0.176(0.036)**	0.166(0.032)**	0.158(0.0303)**	0.152(0.030)**	0.159(0.027)**	0.149(0.030)**	0.140 (0.029)*
EAR		0.252(0.052)**	0.212(0.050)**	0.211 (0.050)**	0.235 (0.048)**	0.210 (0.049)**	0.200(0.049)**
DAR		0.382 (0.087)**	0.363 (0.083)**	0.330(0.083)**	0.272(0.078)**	0.287(0.084)**	0.315(0.083)**
REAR		0.339(0.078)**	0.288(0.077)**	0.256 (0.077)**	0.272 (0.073)**	0.278 (0.076)**	0.244 (0.076)**
DEPAR		0.225(0.080)**	0.168(0.077)**	0.174(0.076)**	0.144(0.073)**	0.155(0.075)**	0.168(0.074)**
PAR30			-0.654(0.199)**	-0.538(0.126)**	-0.639 (0.120)**	-0.492(0.130)**	-0.472(0.128)**
EAR* PAR30				0.687(0.275)**	0.644 (0.271)**	-0.817(0.273)**	-0.878(0.051)**
DAR* PAR30					-0.915(0.415)**	-0.907(0.427)**	-0.878 (0.422)**
REAR* PAR30						0.883 (0.317)**	0.913 (0.313)**
DEPAR* PAR30							0.604(0.212)**
R-square	0.2528	0.4339	0.4970	0.5085	0.5151	0.5300	0.5440
R-square change	-	0.1811	0.0631	0.0115	0.0066	0.0149	.0140
Hausman Test							
chi2	15.81	24.21	16.55	17.29	14.86	15.17	44.69
Prob>chi2	0.001	0.001	.004	0.044	0.137	0.175	0.000

## Appendix IV: Introduction Letter



MOI UNIVERSITY  
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RE: MU/SBE/PGR/ACD/21B

DATE: 20<sup>th</sup> January 2023

TO WHOM IT MAY CONCERN:

RE: PHILOMENA WAIRIMU KIMANI –SBE/MBA/2003/19

The above named is a bonafide student of Moi University School of Business and Economics, undertaking **Master of Business Administration, specializing in Finance** degree.

She has successfully completed the coursework, defended her proposal, and is proceeding to the field to collect data for her research titled: *"The Moderating Effect of Credit Risk on the Relationship between Financing Structure and Financial Performance of Microfinance Institutions in Kenya."*

Any assistance accorded to her will be highly appreciated.

Yours faithfully,


SCHOOL OF BUSINESS &  
ECONOMICS  
MOI UNIVERSITY  
P. O. Box 3900 ELDORET 30100

**DR. RONALD BONUKE**  
**POSTGRADUATE CHAIR, SB&E**

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