CREDIT MANAGEMENT PRACTICES AND NONPERFORMING LOANS

IN MICROFINANCE INSTITUTIONS IN NAIROBI COUNTY, KENYA.

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DECLARATION

This Thesis is my original work prepared with no other than the indicated sources, support, and has not been presented elsewhere for a degree or any other award.

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The undersigned certify that they have read and hereby recommend for acceptance of Masinde Muliro University of Science and Technology of a Thesis entitled'' **Credit Management Practices and Non-performing loans in Microfinance Institutions in Nairobi County, Kenya**''.

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ABSTRACT

The Kenyan microfinance industry faces many challenges. Studies point to nonperforming loans as one of the main problems facing microfinance institutions in Kenya, which has led to reduced profitability and institutional collapse in some cases. Noncompliance with credit monitoring and loan policy provisions have been cited as some of the factors leading to increased nonperforming loans. This research sought to investigate, how techniques employed for managing credit by microfinance institutions effect levels of nonperforming loans and then formulate potential suggestions on how the problem of nonperforming loans can be mitigated. The main objective was to determine whether and how credit management procedures affect Nairobi County microfinance institutions. The specific objectives that served as a guide to this research were as follows: to ascertain the effect of credit monitoring, credit appraisal and credit risk controls affect nonperforming loans in the microfinance institutions of Kenya's Nairobi County. This study was moderated by the size of the microfinance institution on loan nonperformance among microfinance institutions in Nairobi County. Theories guiding the study were Information Asymmetry Theory, Loan Pricing Theory and Financial Accelerator. The study's main goal was to assess how credit management methods in Nairobi County's microfinance institutions affect the amount of nonperforming loans. The study employed causal research design where quantitative approach was adopted. Random sampling was adopted where data was obtained from 48 microfinance institutions in Nairobi County. The population constituted 192 respondents comprising general managers, credit managers, finance officers and accountants. The study sampled 128 staffs who responded to questionnaires designed in a 5-point Likert scale. Data was subjected to analysis by use of SPSS, where correlation demonstrated possible relationships of variables while regression predicted the effects of changing variables on the defaulted loans. The study found that there was a positive significant effect of credit monitoring practice, Credit appraisal practice, credit risk control practice and size of microfinance on loan nonperformance among Microfinance entities in Nairobi County, Kenya. The credit monitoring practice (β=-0.498; p_value $0.000 < 0.05$) while credit appraisal ($\beta = 0.173$; p_value $0.000 < 0.05$). Credit risk control practice had (B=0.742, p_value $0.000 < 0.05$) whereas size of microfinance had (β=0.007; p_value $0.003 < 0.05$). The null hypotheses rejected and alternative hypotheses accepted that credit monitoring practice, Credit appraisal practice, credit risk control practice and microfinance size have a significant effect on loan nonperformance among Microfinance entities in Nairobi County, Kenya. Based on the findings of the study, the researcher recommends that Microfinance entities should strengthen credit-monitoring practices to minimize debt writing off and loan nonperformance. The study further recommends credit risk control practice to stakeholders. These facilitate understanding of an organization's risk profile and risk appetite; clarifies thinking on the nature and effect of risks; and improves the organization's risk assessment approaches. The study recommends adoption of asset growth strategies to strengthen the microfinance size. This study may benefit MFIs managers, employees, the government policy makers and researchers.

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ABBREVIATIONS AND ACRONYMS

CBK   Central bank of Kenya

CA   Credit appraisal

CM   Credit Monitoring

CP   Credit Policy

CRC   Credit risk control

IMF   International monetary fund

MFI   Micro Finance Institution

NPA   Nonperforming assets

NPL   Nonperforming loans

NPLR   Nonperforming loans coverage ratio

TA   Total assets

TL   Total loans

OPERATIONAL DEFINITION OF TERMS

Nonperforming loans

This ascertains the number of borrowed funds not returned in relation to total loan given by the firm.

Credit Appraisal

It is an evaluation of credit borrowing ability after scrutiny of borrowers' behavior and abilities.

Credit Monitoring

Continuous assessment of client's activity, creditworthiness during the time of a loan maturity, loan repayment with its key emphasis on credit risk exposure, operating expenses provision, client orientation, credit reporting and credit documentation

Credit management practices

This refers to matters regarding credit monitoring, credit risk control and credit appraisal for purposes of loan performance.

Credit risk controls

A scrutiny of likely inhibitors of credit on basis on Credit designs, credit committee, delinquency management, loan rescheduling, credit collection policy

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Any financial sector economy's development depends heavily on a well-organized microfinance sector. The factors that contribute to loan default vary by nation and are multifaceted in both developed and developing economies. Various literary works have defined the idea of nonperforming loans. A nonperforming loan is defined by the International Monetary Fund (IMF) (2019) as any credit where the interest, principal amount and operational expenses are 90 days or more past due. Nonperforming loans are those that are 90 days or more behind on either interest or principal payments or both (Bexley & Nenninger, 2020). The conceptual framework is provided on the basis of independent variables: Credit Monitoring evaluated by operating cost to operating revenue ratio, credit appraisal measured by the 5Cs together with core capital weighted asset ratio, and credit risk controls determined by provisions for bad loans. The dependent variable based on nonperforming loans then measured by nonperforming loan to total loan ratio.

1.1.2   Credit Management Practices and Nonperforming loans

According to MFI Act (2008), nonperforming loans refer to all loans in the portfolio that do not generate income for more than 30 days and are disclosed as supplementary financial information. In addition, Manyuanda (2014) describes nonperforming loans as those assets in the organization which are no longer generating income. In addition, Kavata (2016) further describes NPLs as a loan arrangement where the principal amount and accrued interest have both remained unpaid for a predetermined duration of time. The researcher also described nonperforming loans as nonperforming assets. Nonperforming

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loans reflect how profitable a financial institution is; hence, a decreasing percentage of bad loans shows that asset quality of microfinance institutions has improved (Stuti & Bansal, 2017).

In general, the chief effect of defaulted loans on microfinance institutions is that rising default rates impede financial organizations' ability to expand (Karim, Chan & Hassan, 2019; Kuo et al., 2019). The inability to develop results from the nonperforming loans preventing Microfinance institutions from having adequate cash, which limits their ability to finance deserving persons and lend to other possibly profitable ventures. According to Karim et al. (2019), there are numerous other profitable ventures that the microfinance institutions are unable to consider for lending because of the defaulted loans that are detaining most of their funds. Due to these effects, the financial institutions have a shortage of earned incomes (Ghana Banking Survey, 2017), which has a negative effect on their ability to achieve their financial objectives. (Karim et al, 2019). A decline in the microfinance institution's ability to grow its ability lend is a fundamental consequence of nonperforming loans (Karim et al., 2019).

NPLs can be calculated by dividing the total amount in nonperforming loans by the overall loan portfolio's amount. High loan nonperformance percentages is indicative of a firm, which is not recouping the loan disbursed as quickly as anticipated (Chossudovsky, 2015). Another measure of nonperforming loans is by use of nonperforming loans coverage ratio (NPLR) which refers to the proportion of provision for expected losses from nonperforming loans to the sum of all defaulting loans (Kavata, 2016). NPLR is calculated by dividing the provision of losses in nonperforming loans by the total of nonperforming loans. The government has also put policy measure by licensing of credit reference

bureaus in order to manage the NPLs and secure confidence in the financial system (Bloem & Gorter, 2001). For the purpose of this study, the metrics that will be used to explain NPLS among MFIS are nonperforming loan ratio, loan loss provision ratio, cost to asset ratio and credit to deposit ratio.

A global view of nonperforming loans demonstrates a constant trend, particularly in the perspective of the state before and after the global financial crisis. According to a study by Saba, Kouser, and Azeem (2020) on the factors that affect non-performing loans in the US banking industry, interest rate, inflation, and real GDP per capital all significantly affect nonperforming loans. In United States, the proportion of Nonperforming loans increased sharply from under 3.0 percent before 2008 towards an astounding 7.50 percent at its apex within the first quarter of 2009 due to the continuing financial meltdown, although this decreased to 5.55 percent in the last quarter of 2016. Although the Mexican financial industry had adequate financial resources, larger housing developers' financial troubles caused the Nonperforming loan ratio to rise to more than 3.0 percent at the end of the year 2020. Concrete proof available indicates that definitely the amount of NPLs within the United States increased significantly across all industries in early 2006 well before nonprime mortgage industry collapsed from August 2007 (Greenidge & Grosvenor, 2019).

According to Selma and Jouini (2017), the Italian, Greek, and Spanish financial institutions experienced loan defaults as a consequence of an increase in actual interest rates. This was particularly the case for credit with variable interest rates since it made it harder for loan consumers to pay off their debts. Development as well as creativity has

been hampered in some South East Asian countries by lending firms that had to deal with the build-up of nonperforming credit that reduced their financial reserves.

Research findings from Espinoza and Prasad (2019), indicate the worldwide financial disaster within Gulf States bared to fluctuating degrees the risks of the financial institutions in the Gulf Cooperation Council (GCC).The GCC nations practiced noteworthy banking lending. During their investigation on the causes of NPLs in nine leading financial institutions in Greece in the period 2003-2019, Louzis, Vouldis, and Metaxas (2020), discovered that rising future NPLs are positively correlated with rising operational expenses.

According to Klein (2017), the majority of the European nations have had high and steadily rising levels of non-performing loans (NPLs), which has had a negative effect on financial institutions loan portfolio. Growing non-performing loans throughout the area were an unsettling element, and the banking system's feedback effects on production of goods and services undermined a lasting turnaround and presented serious risks moving into the future. In Zimbabwe, where several financial companies were declared bankrupt, the issue of nonperforming loans is widespread (Monetary Policy Statement, 2020). According to the Statement of Financial Policy, nonperforming loans played a substantial role in the downfall of these financial lending firms. Joseph, Edson, Manuere, Clifford and Michael (2020) revealed that outside causes seem to be more prevalent in triggering defaulted loans in the country's microfinance sector. The major factors causing nonperforming loans were found to be mainly, natural disasters, governmental regulations and the borrower's moral character.

Though in the financial sector the principal financing stream for economic operations and other ventures are Commercial banks, in Kenya, micro finance institutions are playing an increasing important role. By transferring funds from the savings of individuals and firms to people and businesses that need cash by way of credit and other financial facilities, they perform an important function in the economic system. According to Daniel and Wandera (2017), they are essential to developing nations since the majority of those who require funds cannot approach large financial markets.

They are regarded as a bridge connecting those with excess cash and those who need cash. The Ethiopian financial industry offers the most fundamental financial services, such as transferring money, credit, and savings services. The majority of financial institutions are launching new products by utilizing distinctive Digital technologies. In order to compete, financial institutions are expanding their capital structures, infrastructures, and domestic and international banking outlets. To satisfy the demands of their customers, these technical advancements must do much more (NBE, 2019). According to Wondimagegnehu (2020), nonperforming loans in Ethiopian finance institutions are brought on by subpar credit evaluation, assertive loaning, diminished moral standing, monopolistic practices between banks, flawed credit supervising, lending culture which is yet to mature, relaxed lending policies and procedures, weak institutional framework, fund misdirection for unplanned activities, and past-due financing.

Due to the rising number of nonperforming loans in Nigeria, the Basel II Accord placed a strong emphasis on credit risk mitigation procedures. The implementation of the provisions of the accord signaled a prudent approach to managing credit risk, which subsequently enhanced banking results (Bloem & Gorter, 2001). The effective managing their vulnerabilities to credit risk, financial institutions both secure the survival and

competitiveness of their own companies as well as contribute to fiscal stabilization and the appropriate deployment of necessary finances in national economies (Psillaki, Tsolas & Margaritis, 2019).

1.1.3   Microfinance Institutions in Kenya

The Kenyan microfinance sector is governed by laws such as, the Companies Act, the Banking Act, the Central Bank of Kenya Act, and several regulatory directives published by CBK. Microfinance institutions are regulated by CBK. The banking sector in Kenya was liberalized in the nineties with the elimination of currency restrictions. The Central Bank, which reports to the Cabinet Secretary National Treasury, is in charge of creating and carrying out fiscal policies as well as promoting the availability of funds, financial system stability, and effective operation. The Central Bank of Kenya as part of its regulatory role annually issues publications on key financial indicators on Kenya's Microfinance firms, such as, capitalization, assets, loan default levels and costs of credit. Thus, the primary Kenyan authority supervising microfinance institutions is the Central Bank. In Nairobi County today there are 48institutions conducting microfinance services of which 14 of them are Microfinance institutions, 5 are banks conducting microfinance services, 3 are wholesale microfinances and 26 are retail MFIs   (Nairobi County Licensed Firms, 2021).

1.2 Statement of the Problem

The microfinance sector of Kenya has lagged behind in profitability primarily caused by increasing nonperforming loans (MFI, 2020). The weak credit management, which is based on credit monitoring, credit appraisal processes and risk control provisions, has led to the collapse of microfinance institutions (CBK Annual Report, 2018). Microfinance

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institutions recorded decrease of 12% of loan performance in 2021 financial year. Furthermore the fall of Rafiki microfinance signifies performance inadequacies. Inadequate credit appraisal, poor risk monitoring, low ethical standards of the clients causes an increase in nonperforming loans in microfinance institutions leading to significant decline in their loan portfolio ,by raising the interest rates borrowers are made to pay, which results in an increase in bad loans. The cases of loan nonperformance have raised queries on efficiency of credit appraisal as well as credit monitoring initiatives by microfinance institutions. This has further led to queries on credit risk assessment practices. Various researches have been done regarding nonperforming loans in the commercial banks of Kenya and not microfinance institutions with various theories about what factors effect non-performing loans held by commercial lenders. Simon (2020) conducted a study on how guidelines for approving loans and supervising of the borrowers affect nonperforming loans in microfinance banks, indicating a positive significant impact.

In order to examine the effect of credit data exchange on nonperforming loans, Kwambai and Wandera (2017) found that credit risk had significant effect on loan performance as Billy (2016) argued it had insignificant effect on nonperforming loans in Kenya. Fawad and Taqadus (2017) recommended a further study on credit management practices of microfinance institutions in developing countries that sheds light on the effect of credit management practices on loan nonperformance among micro lending entities. The study therefore examined the effect of credit management practices on loan nonperformance among microfinance institutions Kenya's Nairobi County.

1.3 Research objectives

The main goal of this work was to assess the effect of credit management practices on loan nonperformance among microfinance institutions Kenya's Nairobi County.

1.3 2 Specific Objectives

This research was directed by the following particular objectives:

1. To determine the effect of Credit monitoring on loan nonperformance among microfinance institutions in Nairobi County.

2. To establish the effect of credit appraisal processes on loan nonperformance among microfinance institutions in Nairobi County.

3. To find out the effect of credit risk controls on loan nonperformance among microfinance institutions in Nairobi County.

4. To examine the moderating effect of firm size on the relationship between credit management practices and loan nonperformance among microfinance institutions in Kenya.

1.4 Research Hypotheses

H_{o1}: Credit monitoring has no significant effect on loan nonperformance among microfinance institutions in Nairobi County.

H_{o2}: Credit Appraisal Processes have no significant effect on loan nonperformance among microfinance institutions in Nairobi County.

H_{o3}: Credit risk controls has no significant effect on loan nonperformance among microfinance institutions in Nairobi County.

H_{o4}: Firm size has no moderating effect on the relationship between credit management practices and loan nonperformance among microfinance institutions in Nairobi County.

1.5 Significance of the Study

Research on nonperforming loans has great significance for all policy makers within the microfinance institutions. The fruits of this work can be of great practical use to the following stakeholders:

1.5.1 Government

The study's findings could be useful in aiding the government's efforts to regulate the finance system more effectively, taking into account that the health of the finance industry affects the entire national economic system. High percentages of non-performing loans might impede economic expansion.

1.5.2 Microfinance Institutions

The results of this research may be significant to microfinance institutions because they will enable them to identify the factors that affect adherence to loan appraisal and monitoring instruments and thereby help in reduction of nonperforming loans, so that they can effectively discharge their financing role for economic development. Borrowers, who might be interested in learning the reasons for variations in the total credit costs, are just one group of microfinance relevant stakeholders for whom the research may be important. Consumers may make wise financing decisions if they were aware of how nonperforming loans affect interest rates.

1.5.3 Researchers and Scholars

The findings of this research can be useful for academics and research institutions as well because they provide a foundation for additional studies. Additionally, this research may add to the body of information about how Microfinance Institutions relate with the effect

of credit management practices on nonperforming loans and thereby expand the scope of existing literature for future research.

1.6 Scope of the Study

Nairobi County has 48 Microfinance Institutions listed under County Licensed Businesses. The study focused on all the 48 MFIs of Nairobi for a duration of five years from 2017-2021. Microfinance has diverse approach on loan performance indicators given it's the second after banks. The five year period is based on basis of the fall of Rafiki microfinance. This research concentrated its discussion on credit monitoring, credit appraisal and credit risk controls as the key variables. Primary data was sought from all the Microfinance Institutions in Nairobi. The study involved one general manager, one credit manager, one finance officer and one chief accountant for each of the 48 MFIs hence 192 staff members.

1.7 Limitations of the Study

The target population comprised of only registered microfinance institutions. This could be limiting in terms of study results generalizability. The study therefore suggested for further studies carried out in other financial sectors in Kenya. Some respondents were unwilling to answer questions. The researcher thus assured them that results would be used for academic purposes. Further, disclosure of respondent's identity or the organizational was also not needed.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter examines various studies on factors that contribute to loan nonperformance among Microfinance Institutions in Kenya. It contains the theoretical, conceptual review, empirical review, research gap and concludes with conceptual framework of the research.

2.2 Theoretical Review

Different authors while addressing loan nonperformance on financial Institutions inclusive of Microfinance Institutions have examined various theories. Writers employed various parameters while examining Nonperforming Loans in multiple Nations of the world. The theories that will guide this particular work are Information Asymmetry Theory, Loan Pricing Theory and Financial Accelerator Theory.

2.2.1 Information Asymmetry Theory

Akerlofs (1970), proposed the concept of Information Asymmetry. The principle of asymmetric information suggests that differentiating between favorable and undesirable consumers may be difficult (Richard, 2016) and due to this, borrowers with unethical tendencies or loan nonpayment issues may not be flagged in time. According to the principle, in a marketplace, the party with more knowledge about a commodity to be exchanged compared to the other side is in a more advantageous position to secure the best conditions for the agreement. In this example, the person borrowing has advantage over the microfinance firm (Richard 2016). Therefore, the side with less knowledge about the same precise thing to be transacted is in a weaker position to decide whether the

transaction is made correctly or incorrectly. The amount of nonperforming loans in microfinance institutions has significantly increased as a result of borrowers who withhold critical information during loan appraisal procedures (Beste & Bofondi, 2003). Derban, Binner, and Mullineux (2005) proposed that creditworthiness assessments be used by financial firms to evaluate applicants in particular. According to the asymmetric information concept, getting accurate details from potential customers is essential to conducting an efficient vetting.

Both qualitative and quantitative methods are available to evaluate the applicants, but the discretionary character of qualitative approaches presents a significant hurdle. Nevertheless, Derban et al. (2005) claim that numerical scores can be allocated to loan applicants' traits evaluated using no quantitative methods, and the total of the scores can be compared to a benchmark. Such a method lowers operating expenses, decreases subjective evaluations, and potentially prejudices. If the evaluation methods show variations in predicted defaulted loans levels, they will be significant. Gehrig and Stenbacka (2005) came to the conclusion that quantitative approaches allow for the detection and quantification of the variables that are significant in explicating probability of default, assessing the comparative level of significance of the variables, enabling better determination nonpayment risks, weeding out risky borrowers, and trying to calculate any reserve required to satisfy anticipated future nonperforming loans.

The weakness of this theory is that it is not foolproof. Some information may show a client is of good character when in real sense the business is not doing well and in the long run if given credit can underperform. Therefore, to distinguish between good and bad borrowers microfinance institutions would monitor the credit and those seeking the credit

before setting appraisal. Microfinance institutions would further check on credit risk control policies before loaning. Microfinance institutions are further guided by Information Asymmetry Theory when setting appraisal to limit credit default. Therefore, Information Asymmetry Theory ends up as the greatest theory guiding this study on determinants of NPL among microfinance institutions.

2.2.2 Loan Pricing Theory

Stieglitz and Weiss put forth this hypothesis (1981). Microfinance institutions cannot constantly charge higher rates of interest in an effort to generate as much interest profit as possible. Considering that it is exceedingly challenging to predict the kind of credit customer at the beginning of the credit process, financial firms should take the danger of being misled by applicants during loan into consideration (Ewert, 2000). Since the most risk customers are prepared to overlook such exorbitant rates, financial institutions may still attract loan defaulters even when they establish forbidding borrowing costs. Such applicants, if successful in obtaining more likely to engage in incredibly speculative initiatives or ventures (Chodecai, 2015). This calls upon a conducive credit policy to address borrower's moral hazard.

The improvement of microfinance knowledge on credit applicants is how Pagano and Jappelli (2003) demonstrate that information exchange reduces chances of selecting risky borrowers. Most Microfinance institutions possess private data on local borrowers, with little or no information on foreigners. Financial institutions can more precisely assess applicants risk and determine the appropriate costs of finance with the help of improved information availability. The very few super risky borrowers would be edged out of access to financing when financiers become reluctant to provide them with favorable rates, which

would increase funds available for less risky customers. (Bofondi & Gobbi, 2003). Good borrowers are therefore given more points when it comes to credit appraisal.

According to Padilla and Pagano (2000), those who have been financed are motivated to put greater effort into their ventures if Lenders openly share credit reports on defaulting clients. Generally, defaulting entails the payment of increased costs of finance and is seen as an indication of inefficiency by external banks. According to the moral hazard dilemma, borrowers will be more inclined to skip loan payments unless there are clear repercussions for their future loan requests. Bankers may raise rates to prevent this, eventually causing the sector to collapse (Alary & Goller, 2001).

This theory is criticized on basis that a loan determining interest charge is wrong as urgency and ability to meet the price set should be prioritized. This research adopts this concept, suggesting that Microfinance Institutions could adopt credit risk control procedures and appraisal techniques and to demonstrate how a rise in interest rates can increase the likelihood of financial distress and, as a result, raise the percentage of defaulted loans.

2.2.3 Financial Accelerator Theory

This theory was advanced by Bernanke and Gertler (1989) and explains how economic changes of any size can have a significant effect on the financing business. It bases its analysis on the relationship between a borrower's total wealth and the fluctuations in the cost of finance resulting from economic disturbances This theory holds that the less the amount of borrower's wealth contribution to the project the more the borrower's interest will diverge from the interest of the supplier of the external fund. This calls for credit policies to guide on how to manage economic shocks.

According to financial accelerator, theory borrowers are more eager to undertake riskier projects, which have high probability for huge profits and those contributing to low gains (Bernanke, Gertler & Gilchrist, 2015). These projects favor the borrower because it is the lender who loses whenever the projects yield low or no returns. Such ventures are, however disadvantageous to lending firms as they incur heavy losses when they fail. Due to economic shocks, the theory further indicates that the borrowers may not be in a position to borrow and are likely to stop repayments of their loans hence eventually leading to nonperforming loans (Bernanke et al., 2015).

The critic of the theory is that though economic shocks affects borrowing but inflation makes liquid assets to appreciate hence good to lend. This theory was relevant because microfinance institutions should be alert on the economic trends and make wise decisions during the time of loan appraisal, carry out proper and thorough business assessment, and set clear policies and monitoring to avoid bad credits. Microfinance institutions need to enhance their credit policy by considering tangible collaterals, or lend secured loans in case the borrower defaults. This theory addresses the appraisal and credit risk control policy concept.

2.3 Conceptual Review

2.3.1 Credit Monitoring

To guarantee a solid financial system and avoid structural catastrophes, frequent credit performance assessment, preferably with an advance notification mechanism that can notify financial regulators of impending bank difficulties, is necessary (Agresti et al. 2017). Thus, it is unnecessary to overstate the necessity for keeping a close eye on the consumer in order to guarantee loan repayment. Whenever they feel they received closer

follow-ups, borrowers tend to do more to meet their loan obligations unlike when due to less attention defaulting on payments increases. Microfinance Institutions are expected to monitor their borrowers' prompt compliance (Mayers, 2019). This study measured credit monitoring through a continuous assessment of client's activity, creditworthiness during the time of a loan maturity, loan repayment with its key emphasis on credit risk exposure, operating expenses provision, client orientation, credit reporting and credit documentation.

2.3.2 Credit Appraisal

The credit evaluation is a thorough process that begins when a loan applicant enters the banking hall and ends with the delivery of the loan and, subsequent supervision with the aim of ensuring and maintaining the standard of lending and mitigating probabilities of defaulting. (Sharma &Kalra, 2015).Loan payments from customers must continue to be tracked.

Vetting customers to make sure they have the desire and capacity to pay back a loan is the initial stage in lowering default risk. The so-called 5Cs framework of creditworthiness is used by micros to assess clients as prospective borrowers (Abedi, 2000). As micro financial institutions learn more about their consumers thanks to the 5Cs, credit efficiency increases. The five Cs represent condition, capacity, collateral, capital, and character. Character describes a borrower's reliability and moral standing. It reveals the borrower's capacity to manage the business and desire to make payments. Capacity evaluates if the borrowers liquidity can support principal and interest payments when they fall due. Capital refers to borrower's assets. Collateral is property that a borrower is prepared to forfeit in the event of failing to pay, or a guarantee from a reputable individual to repay a

loan that has fallen behind on payments. Conditions refers to a marketing strategy that takes into account the competitiveness, the industry for the good or service, as well as the political and financial climate. Any credit rating formula must take into account all 5Cs.

2.3.3 Credit Risk Controls

Credit risk controls guides microfinance firms in disbursing loans to customers. They consist of credit panels, defaults control, customer focus, and loan product designs, loan Rescheduling, collection policy and staff incentives. The most economical and straightforward way to manage credit risk is by adhering strictly to the credit policies. The credit policies should be consistent with the general banking plan, and while creating such policy, the current credit policy, sector standards, underlying economic realities of the nation, and the current economic environment all need to be taken into account (Kithinji, 2019).

2.3.4 Firm Size

Size of a firm means how large or small a microfinance institution is and it is measured by looking at the logarithm of assets for a given data. Awunyo (2020) used logarithm of assets to compute firm size.

2.3.5 Nonperforming Loans

Nonperforming Loans are caused by debtors' failure to pay back their principal and interest when they fall due, which has a negative effect on the creditor's cash flow (Agu & Okoli, 2017). As soon as they are described as nonperforming debt, there is concern that the borrower will not be able to cover the whole amount owed, plus interest (Chelagat,

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2020; Awunyo-Vitor, 2017). Given that nonperforming lending, have a variety of negative impacts, it is crucial to prevent them because, they reduce loaning to financial institutions, households, and other businesses as well as hindering commercial Lending organizations' capacity to be profitable. This claim is supported by data from West Africa (Appiah, 2016; Awunyo-Vitor, 2020). The amount of loan defaults divided by the entire amount of the loan book will be used to calculate nonperforming loans.

2.4 Empirical Review

Because financial institutions have varying banking details about loanees, Kenyan microfinance institutions have been giving loans to repeat delinquents. These loanees have taken advantage of the credit information gaps to obtain multiple credit facilities from Kenyan microfinance institutions and have defaulted over time, which has increased the percentage of bad loans in the microfinance market in Kenya (CBK Annual Report, 2015). Such nonperforming loans are also referred to as nonperforming assets, where those who borrow default to honour payments on time. Lending is an important function of microfinance institutions to enhance economic expansion. Without loans, major economic development would be impossible or too slow. A study by Adhikary (2017) pointed at, inadequate effective monitoring and supervision by the microfinance institutions, weak regulatory statutes and lack of effective credit recovery strategies as key causes non-performing loans. Similarly, Warue (2017) adds that NPLs are caused by a number of wrong economic decisions by management of the firm, inflation and plain bad luck.

2.4.1 Credit Monitoring and Nonperforming Loans

Dimitrios Angelos and Vasilios (2016) used cross sectional data from 9 large Greek banking firms and a generalized method of movement to summarize their survey. Looking

at the causes of bad loans in the Greek monetary sector individually for each type of loan, they were persuaded that Finance institutions specific variable Credit Monitoring were also causes of differences in levels of nonperforming loans.

An investigation on Financial Institutions of India that spans 20 years also found that high interest rates and an actual effective exchange rate contributed to increasing nonperforming loans, Dash and Kabra (2019). However, Adela and Iulia (2019) provided the concept utilizing the bivariate correlation on how these financial institutions' average interest rates are related to NPLs in financial institutions system of Romania, encompassing the fifteen years 2006–2019. Their findings indicated significant effects of Credit Monitoring on the nonperforming loans as well.

On the premise of the Auto Regressive Distributed Lag technique, Solarin, Sulaiman, and Jauhari (2016) collated their conclusions on Malaysia's sharia based financial institutions. They concluded that cost of lending had a considerable long-term substantial effect on loan defaults while Credit Monitoring had a discernible but negligible association with defaulting loans thus lowering the larger assumption that Sharia compliant microfinance organizations operate on profitability basis since production has a lesser effect compared to the rate of interest .

Applying generalized autoregressive conditioned heteroscedasticity, Saad and Kamran (2020) came to the conclusion that while Credit Monitoring has a considerable though not sole effect on increasing nonperforming loans, other macroeconomic determinants, governmental policies, and the banking practices of the financial institutions need to be thoroughly investigated in order to identify the underlying causes of nonperforming loans.

Joseph et al. (2020) conducted research to determine the reasons why loans in Zimbabwe are not performing. Among financial institutions, loans make up the bulk of assets. The business success of microfinance institutions is greatly affected by such assets, which produce enormous interest income for the financial institutions. Unfortunately, to the detriment of the microfinance institutions, a portion of these loans typically enters the nonperforming credit category.

In 2020, Geletta evaluated the factors that contribute to loan delinquencies in Ethiopian financial institutions. Using self-administered questionnaires, a study was done involving staff occupying various offices, who work in both privately held and government financial institutions in Ethiopia. According to the survey's conclusions, the reasons for nonperforming loans include poor credit supervision, poor credit appraisal, flawed loan surveillance, immature credit heritage, lax credit contract terms, assertive lending, malfunctioning administrative frameworks, monopolistic practices among financial institutions, deliberate nonpayment by customers with their limited understanding, misappropriation of funds and inadequate financing by lenders.

In the Guyana's financial industry, Pasha and Khemraj (2019) investigated the factors that contribute to nonperforming credit. Their findings indicate that Gross domestic product and non-performing loans are negatively associated, indicating that a strengthening of the productive sector corresponds to a decline in defaulting loans. Financial organizations that price their loans significantly higher than normal and lend without restrictions stand high chances of loan failure. Credit Monitoring minimize nonperforming loans. In contrast to earlier research, their findings do not back up the idea that larger financial institutions are better at vetting loan applicants than their smaller rivals.

Alshatti (2015) conducted research on 13 business finance institutions from 2005 to 2017 to determine the effect of the nonperforming loan ratio on the profitability. Utilizing cross sectional time series data, the investigation found that credit risk has a direct effect on the economic results of Jordanian financial institutions. Moreover, the capital adequacy ratio, the interbank lending rates, and the debt to equity ratio did not have an effect on the revenue of the financial institutions as determined by Return on equity, indicating that some other parameters may have an effect on the earnings of financial institutions, which is why the present investigation was necessary.

Hasan and Wall (2014) conducted a study conducted between 2003 and 2019 examining the factors that affect financial institutions' provisions for bad loans in 21 different countries sampled from the United States and beyond. Nonperforming loans were among the essential factors, while optional factors were calculated using revenue prior to the provisions for bad loans. The research, applying data analysis methodologies discovered that a significant proportion of Nonperforming loans is associated with greater levels of provisions for bad loans. Although several indicators, including bad debts reflected important factors in United States analyses, they were found insignificant for institutions outside America. This present investigation, which has focused on Nairobi County, aims to determine whether there exists a geographical and situational difference.

2.4.2 Credit Appraisal and Nonperforming Loans

The credit evaluation is a thorough process that begins when a loan applicant enters the banking hall and ends with the delivery of the loan and, subsequent supervision with the aim of ensuring and maintaining the standard of lending and mitigating probabilities of defaulting. (Sharma &Kalra, 2015). Loan payments from customers should continue to be

tracked. Therefore, businesses must therefore refrain from lending to dangerous borrowers, monitor loan repayment, and restructure loans when loanees encounter challenges (Ameyaw-Amankwah, 2015). Credit evaluation involves analyzing and reviewing an application for financing by a microfinance institution. (Boldizzoni, 2015).The motive of the client, viability of the idea, the loanee's ability to pay back , the amount of the credit, and the pledged guarantee are the main factors to dwell on during the exercise. Credit evaluation exercise is essential for reducing nonperforming loans, therefore if the staff chosen to perform the task are skilled, there exists a good probability that funds will be loaned only to individuals who are not creditworthy. The evaluation documentation employed by the lending institution to assess the repayment capacity of a potential loanee, such as the credit agreement, financial performance reports, growth strategy, collateral and guarantee documents, and other loan covenants, are important, according to Peters and Monroe (2017). For further assessment by the lending advisory board and by branch inspectors from the bank's major regulatory authority, such documentation outlining the whole course of loaning are maintained in the debtors' branch. During the loaning cycle, keeping of accurate records is essential since credit quality ratings are strongly correlated with the reliability of paperwork concerning each borrower.

According to Mureithi (2016), credit evaluations are carried out for a variety of reasons, including to measure risk, support the management, and achieve optimum, credit-worthy transactions. Consequently, credit evaluation is still an important task for financing organizations. Sheila (2015) notes that managing or decreasing defaulting requires thorough and comprehensive evaluation. An important step in the lending procedures is the appraisal. This particular activity is the backbone of successful financing. Evaluation

entails analyzing and evaluating both the client and the venture he wishes to finance (Korankye, 2017). In the process of determining whether prospective borrowers are creditworthy or not, factors which are numerical like details from financial statements are evaluated using numerical methodologies, while factors which are more subjective are measured by applying personalized empirical approaches. (Mohammad & Onni, 2015).

The credit manager ought to ensure that reliable facts presented at the outset of the procedure to collect evidence on the applicant suitability to assess their loan capacity. This will mean that the details and values are provided thus ensuring that the applicant will not benefit from appraisal failure (Sheila, 2015). When scrutinizing a loan application, greater weight should be placed on viability of projects, which can pay the loan from the ensuing cash flows, rather than relying on realization of collateral or calling upon guarantors. Credit rating is a professional evaluation of the applicant's financial situation and capacity to pay back debt that aids the lender in grading the interested client (Hossain & Chowdhury, 2015).

Goddard et al. (2015) conducted research on the elements that affect financing organizations' profits across European nations. They discovered a strong correlation betwixt the credit assessment and performing loans (The World Bank, 2014).

Samy and Magda (2019) looked into how credit appraisal affected the performance of Egyptian financial institutions. The study offers a thorough methodology for evaluating the effect of capital upon, profits and interest margins, the two important measures of financial performance. The study results suggest that credit appraisal positively affects financial institution profitability" (Samy& Magda, 2019Furthermore, Murinde (2020)

contends that the examination of credit appraisal should cover the more comprehensive facets of banking and finance.

2.4.3 Credit Risk Controls and Nonperforming Loans

Bad loans provisioning is thought of as an indicator of anticipated bad loans.

Greater amounts of defaulting loans call for increased provisioning, since under the historical provisioning practice, the more defaults suffered, the grater cash should be reserved to cover them (Hasan & Wall, 2015).

Microfinance institutions may make larger provisions if they anticipate a substantial rate of bad loans in order to reduce profits fluctuations and strengthen short-term liquidity. Loan loss provisions can also be used by the management to indicate the financial health of their financial institutions because doing so shows that they have a lot of confidence in going concern status of their firms. The unique characteristics of the financial industry and every individual financial institution's policy decisions with regard to their pursuit of optimal performance and advancements in their methods of managing risks are likely to have a significant effect on the dynamics of nonperforming loans (Daniel, 2019). The main source of credit risk include, weak management and staff, lenient credit controls and debt collection rules, fluctuating loan pricing, low quality governance, weak legislation, flouting capital and liquidity adequacy requirements, insider lending, Financial firms widely licensed, inadequate credit appraisal loan , weak credit evaluation, questionable banking habits, meddling from the state, and insufficient monetary authorities oversight (Kithinji, 2019).

When the total amount in a lending institution's loan book is divided by the amounts deposited by customers in the bank, the resultant ratio is commonly referred to as Loan to

deposits ratio. This ratio indicates a firm's liquidity in the sense that it is favourable when less than 100 percent because the lender utilizes deposits only to lend. When the ratio is greater than 100 percent, it implies the lender borrows to lend which is risky. If the ratio is less than one, microfinance institutions might not be making the best returns possible. Conversely, if the ratio exceeds one, the microfinance institutions may not have adequate cash to deal with any unexpected financing needs or financial woes.

A financing company needs to establish a number of guidelines to guarantee that debtor management is carried out efficiently. Among such guidelines is a collection policy, which is required since not all consumers pay the company's invoices on time.

Some clients take their time paying, while others do not pay at all. Consequently, the debt recovery strategy must focus on speeding payments from slow payers and minimizing losses due to delayed payments (Kariuki, 2019).

The cash set aside for unpaid credits and loan repayments is known as the loan loss provision. Customers defaulting on repayments and other severe nonperforming loans are covered by LLP. To reduce return volatility and strengthen their liquidity, lending firms with high expectations for capital loss may consider bigger loan loss provisioning (Ahmad, Takeda & Thomas, 2019).

Mendoza and Rivera (2017) investigated the association between the growth increasing loan loss provision ratios and profitability using relevant literature from 576 rural financial institutions and applying numerical analysis. According to the analysis, increasing loan loss provision ratios has a detrimental effect on financial institutions' profitability. To reduce risk of default, the researchers proposed that the creditor's responsibility for making wise loan-granting decisions be given significant weight. Fawad and Taqadus (2017) examined the considerable deep correlation between non performing loans and

credit growth and tested the veracity behind the credit risk control assumption employing 6 years longitudinal time series data from 30 financial institutions in Pakistan. The positive correlation is theoretically justified by the fact that many risky customers are lent money during the boom in order to increase profits. Once the economic bubble ends and the downturn begins, such loanees do not have enough income to service their loans, which contributes to increasing defaulting loans. Moreover, Festi et al. (2016) expanded upon this aforementioned idea when they suggested that while rapid economic expansion boosts loans in a nation, an abrupt halt or drop in that expansion results a rise in non-performing loans because of debtors' incapacity to pay back loans. Therefore, when credit expands during a boom, NPLs increase during a downturn.

Olokoyo (2016) looks at factors that affect how financial institutions of Nigeria behave while making loans. The deposit amounts, currency trading, investment holdings, statutory reserves ratio, interest rates, and capital adequacy are all taken into account in the research. The lack of correlation between the lending rate and the required statutory cash reserve ratio suggests that the number of loans made by financial institutions in Nigeria is unaffected by macroeconomic policies.

According to Affinito and Tagliaferri (2019), financial institutions in financial distress, particularly those with a large number of defaulting loans, are more prone to use riskier loan security. Larger reserves are considered to have a strong positive correlation with loan defaults since they predict the likelihood that borrowers would default in meeting their loan obligations.

A study on the effect of nonperforming loans on the business financial health of microfinance institutions in Nakuru town was conducted by Wangai et al. in 2014.

Economic indicators including inflationary spiral and development index served as the survey's constant variables. Firsthand information on 66 staff members in the institutions over the September and October period of 2014 was collected. Before embarking on the actual research, a trial was conducted, after which, descriptive statistical inference were used to assess the results. According to the research findings, micro lender's financial health would suffer greatly with a rising credit risk. While this study concentrated on the effects on business performance the current work looks at debtor management procedures and how they react with loan defaults. Furthermore, the geographical gap needs to be filled, since this work is based on firms in Nairobi County and to apply secondary data on the dependent variable.

2.5 Research Gap

Research gap is based on Determinants of nonperforming loans based on geographical gaps, variable gaps, methodology gap, gaps on findings, and gaps on period of study, and gaps on firms under study for instance study on banks verses current study on microfinance institutions. These gaps are highlighted in the previous studies captured in the table below.

Table 1: Research Gap

Scholar	Title	Methodology Applied	Findings Obtained	Gap Realized
Kwambai and Wandera (2017)	The effects of credit information sharing on nonperforming loans in KCB Kenya	Primary sources and secondary data Period: 2010 to 2017. Descriptive case research design Stratified proportionate random sampling technique Both qualitative and quantitative methods. Variables: Credit policy, credit monitoring, credit risk	Credit policy, credit monitoring, credit risk have a positive and statistically significant effect on loan performance	Current study involved a longer study period of 5years The study used size of microfinance a moderator. Current study was on 48 microfinance institutions unlike one firm as previous study.
Geletta (2020)	Determinants of nonperforming loans In Ethiopia banks.	Descriptive research design , Ordinary least squares regression method Period covered; 5 years Administered questionnaire Variables: credit assessment, loan monitoring, credit terms, credit conditions	Results indicate that poor credit assessment, failed loan monitoring, lenient credit terms and conditions, aggressive lending, compromised	The research was in Ethiopia current study was in Kenya. Microfinance size moderated the study.

			integrity, weak institutional capacity; unfair competition negatively affected commercial Banks.	Current study is based on microfinance institutions and not banks.
Jackson (2021)	The relationship between Lending policy and Nonperformin g loans of Commercial Banks in Kenya	Descriptive research Target population; 42 Banks Sampling method; purposive Period covered: 2019 to 2017 Variables: credit terms, credit conditions, credit policies and credit monitoring	The study found that credit terms, credit conditions, credit policies and credit monitoring positively affected loan performance.	The study lacked a moderator, The current study was on microfinance firms and not banks The current study took a 5-year period and not 4-year period for previous study.

2.6 Conceptual Framework

INDEPENDENT VARIABLE

Credit Monitoring

- Credit risk exposure
- Operating expenses provision
- Client orientation
- Credit reporting
- Credit documentation

DEPENDENT VARIABLE

Nonperforming loans

- Nonperforming loan / total loan ratio

Credit Appraisal

The 5Cs

- Character
- Capacity
- Collateral
- Capital
- Condition

Credit Risk Controls

- Credit designs
- Credit committee
- Delinquency management
- Loan rescheduling
- Credit Collection policy

Size of Microfinance

- Natural logarithm of assets

MODERATING VARIABLE

Source: Self actualization (2022)

Figure 2.1: Conceptual Framework

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The conceptual framework is provided on the basis of independent variables: Credit Monitoring evaluated by operating cost to operating revenue ratio, credit appraisal measured by the 5Cs together with Core Capital/Risk Weighted Asset ratio, and credit risk controls determined by provisions for bad loans. The dependent variable based on Nonperforming loans then measured by nonperforming loan to total loan ratio.

Table 2.1 Operationalization of Variables

Category	Variable	Measurement	Formulae
Independent Variable	Credit Monitoring	Likert scale	• Credit risk exposure • Operating expenses provision • Client orientation • Credit reporting • Credit documentation
	Credit Appraisal	Likert scale	• Character • Capacity • Collateral • Capital • Condition
	Credit Risk Controls	Likert scale	• Credit designs • Credit committee • Delinquency management • Loan rescheduling • Credit Collection policy
Moderating Variable	Size of Microfinance	Total Assets	Natural logarithm Assets
Dependent Variable	Nonperforming loans	Loan loss ratio	- Nonperforming loan / total loan ratio

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The methods adopted to carry out this investigation are covered in this section. The theoretical population, data gathering tools, data gathering processes, pilot test, how data was processed and analysed, are all described in detail.

3.2 Study area

The research was on MFIs in Nairobi County that sums to 48 in number. Kenya is divided into forty seven devolved units called counties. Nairobi is county number 047. It is situated in south central regions of Kenya. It is the tiniest but most densely populated county, covering 696km2. More than three million people call Nairobi home with a population density of four thousand eight hundred people per square kilometer according to statistics. Being the biggest Metropolis in Kenya and the seat of government, Nairobi County is the headquarters of most microfinance institutions and the city has the highest number of loan borrowers.

3.3 Research Design

This study employed a causal research method. With a causal research model, connections among parameters are examined without any of them being under the researcher's direct effect or manipulation (Ngechu, 2015). Causal research, according to Allan and Randy (2005), is employed to specifically examine a representative sample in order to explain its key features. It explains the cause and effect relationship.

3.4 Study Population

The term population describes the entire set of the components based on which the investigator hopes to draw conclusions. (Cooper & Schindler, 2006). This research involved one general manager, one credit manager, one finance officer and one chief accountant for each of the 48 MFIs hence 192 staff (Appendix II: Study Population).

3.5 Sampling Design

A sample is a selection of people, things, or elements made from a broader class. (Nalzaro, 2017). The researcher applied the Krejcie and Morgan sampling method to calculate the desired population. This research used simple random sampling technique since it gives the scholars the freedom to exercise their discretion when deciding which scenarios will better advance their objectives and help them to address their topics of interest. The decision made by the researcher is to meet only people who meet the criteria required.

$$S = \frac{Y^2\,NP\,(1\text{-}P)}{d^2\,(N\text{-}1) + X^2P\,(1\text{-}P)}$$

Where

S is the required size of the sample.

Y^2 is the chi-square table value for one degree of freedom at the required confidence level that is 1.96 x 1.96= 3.841

N represents the size of population

P is the population proportion, which is assumed 0.5 because it will allow for the largest possible sample size, and d is the level of accuracy stated as a proportion, which is 0.05.

$$S \quad = \quad \frac{3.8416*192*0.5*0.5}{}$$

$$(0.0025*191)+ (3.8416*0.5*0.5)$$

$$= \quad 184.3968/1.4379$$

$$= \quad 128.2= \quad 128$$

The study adopted stratified simple random sampling to identify the general managers, finance officers, credit managers and accountants.

Table 3.1 Sampling Frame

Category	Study population	Sample size
General manager	48	32
Finance officer	48	32
Credit manager	48	32
Accountants	48	32
Total	**192**	**128**

Source: Microfinance institutions (2022)

3.6 Data Collection Instruments

This refers to the tools used to gather data, such as check lists. (Sekara & Bougie 2019). Primary data was sought from MFIs under study. Formulation of closed ended questions is easy to administer and easier to analyze (Mwangi, 2015). The researcher was in favor of this instrument because it is easy and economical to use on a large group of respondents (Orute, 2016). To obtain primary data requires the use of self-administered questionnaires that use the drop off methodology. To collect data from the target participants, the researcher administered five Likert scale closed ended questionnaires (Saunders, 2019). Secondary data was obtained from financial statements of mentioned firms.

3.7 Data Collection Procedure

The required data was gathered in the field where two research assistants were involved. Letter of authorization from Masinde Muliro University of Science and Technology was provided for data authorization. The researcher got research permit from NACOSTI. When evidence is gathered and measured on specific factors in a predetermined, methodical manner, it is called data collection. This procedure allows a researcher to assess results and respond to questions (Sekara & Bougie, 2019). Questionnaires were given and collected after two days to enable respondents respond accordingly before picking.

3.7.1 Validity

Cooper and Schindler (2017) argues that the researcher should carry out a preliminary testing of the information gathering tools before proceeding with the research. A pilot study was carried out on 10 accountants in 10 MFIs in Kakamega County. Accountants

are the best due to their nature of computations on NPLs. The main aim was to find any inconsistencies in the questionnaires, as well as flaws in the research design and data gathering methods, (Kihuthu, 2015). Content and construct validity was also ascertained by the expert opinion where my supervisors were involved in determining validity alongside the accountants under pilot (Mugenda, 2016).

3.7.2 Reliability

Testing for consistency, technically referred to as research reliability, this work uses the Internal Consistency methodology, which uses Cronbach's coefficient of reliability. Internal consistency is established, by comparing the results received in a particular research with the results gained at other times applying the same study design. Mugenda and Mugenda (2017) advise a Cronbach's alpha of 0.7. In research. It is standard practice to regard an actual value of more than 0.7 as sufficient for data analysis.

3.7.3 Pilot Test

A pilot test was done to establish any faults and errors in the tools by randomly selecting 10 respondents in Kakamega County MFI institutions. The respondents were from Kenya Women Microfinance, Faulu and SMEP MFI. The pilot respondents were not considered in the actual study. Pilot data was coded in the SPSS from the pilot questionnaires and run to find the coefficients. This inquiry used Cronbach alpha (p) coefficient in testing reliability of the questionnaire which shall be ascertained at 0.7 and above it was deemed to be reliable and in case it's 0.6 and less it was deemed to be not reliable (Koonce & Kelly, 2014).

Table 3.2: Pilot study Reliability Test

Variables	Pilot test (n=10)	
	No. of Items	Alpha value
Credit monitoring	6	.789
Credit appraisal	5	.809
Credit risk controls	5	.888
Size of Microfinance	5	.749
Non Performing loans	5	.758
Average		**.799**

Source: (Field Research data 2022)

From the above pilot results in table 4.5 confirmed that the reliability results are consistent and dependable. The Cronbach alpha of .799 was above 0.7 and deemed dependable for the research study to proceed.

3.8 Data Processing and Analysis

Data analysis refers to the procedure of modifying, interpreting, and filtering primary data in order to obtain useful, pertinent facts that support commercial decision-making. Babbie (2019) asserts that data analysis is performed on the information gathered to turn it into a format that is acceptable for use in generating research findings that take into account the concepts and hypotheses that served as the impetus for the investigation. The Statistical Package for Social Science (SPSS) computer program for Microsoft was used to encode, input, and analyze the acquired data. This study employs measures of dispersion and statistical inference. Pearson correlation coefficient is used find out whether there is correlation between the study variables. The correlation analysis is applied to enable the investigator to assess how strong the degree of correlation is between the independent and

dependent variables. Tables containing data are used to illustrate findings and justify differences of opinion, particularly among study participants.

With the help of the statistical tool of regression analysis, one can create a mathematical model that reveals the relationships between different variables. The research uses Pearson's correlation to explain the relationships among the various parameters. Bivariate regression is another data analysis method used in the study.

Simple linear models are as follows:

$$Y = \beta_0 + \beta_1 X_1 = \text{Credit monitoring}$$

$$Y = \beta_0 + \beta_2 X_2 = \text{Credit appraisal}$$

$$Y = \beta_0 + \beta_3 X_3 \text{ Credit risk controls}$$

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

$$Y = \beta_0 + \beta_1 X_1 M + \beta_2 X_2 M + \beta_3 X_3 M + \varepsilon = \text{Size of Microfinance (moderator)}$$

Where:

Y_{NPLs}	=	Nonperforming Loans.
$\beta_1, \beta_2, \beta_3$	=	Regression coefficient
X_1	=	Credit monitoring
X_2	=	Credit appraisal
X_3	=	Credit risk controls
M	=	Size of Microfinance
e	=	error term
β_0	=	Constant term

This mathematical model is applied in the analysis of this research on debtor management practices and nonperforming loans in microfinance institutions in Kenya.

3.8.1 Diagnostic Tests

The diagnostics tests conducted included; tests of normality, linearity, multi-collinearity, linear relationship between the variables conducted in order to control the error term.

3.9 Ethical Considerations

Ethical issues are undoubtedly among the most important parts of the research (Bryman & Bell, 2014). This study mainly used primary data from microfinance institutions, with some references to secondary data CBK Bank supervisory annual reports of 2017-2021. The data was confidentially used only for this study project.

The study well considers other ethical dimensions such as acknowledging other researchers' contributions that were used in any aspect of the research and maintaining of the highest level of professionalism in arguments and analyses everywhere in the study. This researcher sought a letter from NACOSTI and directorate to authorize the study.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSIONS

4.1 Introduction

The section avails results on response percentage, respondent background information, and study areas of credit monitoring, credit appraisal, credit risk controls as independent variables, size of microfinance as moderating variable and nonperforming loans as the dependent variable.

4.1.1 Response Rate

Questionnaires were used as a data gathering strategy in the study. Of the 128 surveys distributed, 81 were sccessfully completed and returned. The percentage of those returned was 63.3%, which was satisfactory (60% based on Mugenda & Mugenda, 2005). These question sheets were given to the responders to fill and picked by the investigator upon completing.

Table 4.1: Questionnaires Returned by Percentage

	Issued	Collected	Not collected
Questionnaires	128	81	47.00
TOTAL %	**100**	**63.3**	**36.70**

Source: (Field Research data, 2022)

4.1.2 Reliability Tests

Research findings in table 4.2 confirmed the reliability of findings of the pilot study. They were found to be consistent and dependable.

Table 4.2: Reliability Statistics

Variables	Final test (n=81)	
	No. of Items	Alpha value
Credit monitoring	6	.899
Credit appraisal	5	.862
Credit risk controls	5	.859
Size of microfinance	5	.889
Nonperforming loans	5	.912
Average		**.884**

Source: (Field Research data, 2022)

The Cronbach alpha of .800 was greater than 0.7 and considered dependable for the research proper to proceed. For individual variable summarized below. The reliability results of final study are also consistent and dependable. The Cronbach alpha of .882 overall was above 0.7 and deemed dependable for the research study to proceed.

4.2 Diagnostic Test for Control of Type I and II Errors

Controlling of Type I and Type II errors is a crucial aspect to the validity of the statistical results since erroneous conclusions can be drawn while testing for various statistical parameters. The Type I error normally happens whenever the null hypothesis is declined when it should be confirmed. On the other hand, Type II error usually happens whenever the null hypothesis is confirmed when it did not apply to the case at all and ought to have

been abandoned (Larry, 2013). This researcher controlled possible occurrence of either Type I or II errors from happening by setting a significance level of 0.05 , hence establishing the level of acceptable statistical significance.

To ensure that scales of measurement were suitable for multiple regression analysis, the measurements were converted into continuous scales for both the independent and dependent variables. The diagnostics tests conducted included; testing normality, linearity tests, multi-collinearity and linear connections among various variables. These are the typical diagnostic tests performed prior to commencing standard analysis of linear regression.

4.2.1 Tests for Normality

This research project applied a combination of graphical representations and regression analyses to measure the real extent of deviation from normalcy, as indicated by Hair et al. (2010). This researcher used both the Shapiro – Wilk and Kolmogrov- Smirnov tests to establish normality. In each of the two tests, it was established clearly that the results were taken from normal distribution of population. If $P > 0.05$, null hypothesis is adopted and the data is described as having normal distribution. On the other hand, if $P < 0.05$, the null hypothesis is abandoned and the resulting data is described as not normally distributed. The data indicated conformance to normality. The graphical analysis also showed normal distribution of data.

Table 4.3: Normality test

	Kolmogorov-Smirnov[a]			Shapiro-Wilk test		
	Statistic	**Df**	**Sig.**	**Statistic**	**Df**	**Sig.**
X1	.891	81	.201[*]	.712	81	.132
X2	.761	81	.209[*]	.655	81	.762
X3	.772	81	.199[*]	.856	81	.175
M1	.864	81	.221[*]	.695	81	.531

a. Lilliefors Significance Correction

Source: Research Data (2022)

To establish normality by use of graphs, the final result of a standard may also be employed. When data has a normal distribution, the plot points will lie very close to the main line. Should the data plot lie far from the main line in a manner that is clearly not linear, there is no normal distribution of data. Looking at the normality Q-Q graph below, it is clear that research data possesses the quality of normal distribution.

This interpretation of graphical analysis is because when the real data dispersion approximates nearly the main diagonal line, the necessary condition for normal distribution exists, and the necessary conclusion drawn is that data for the relevant variables was extracted from a population with normal distribution.

The points plotted in the graphs below run close to the main line, hence, the data is normally distributed as indicated in the figures as shown below.
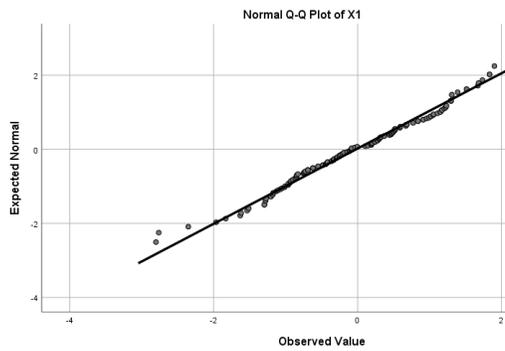
Normality plot for credit monitoring
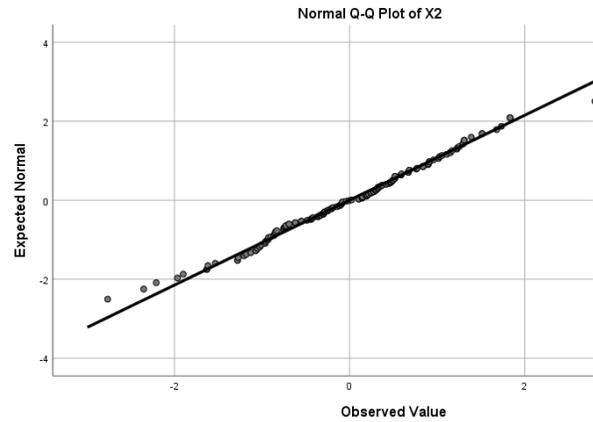
Normality plot for credit appraisal
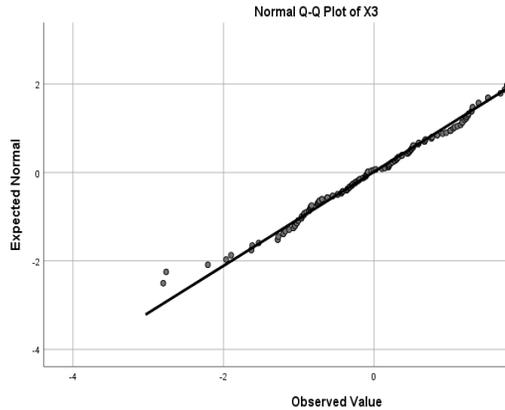
Normality plot for Credit risk controls
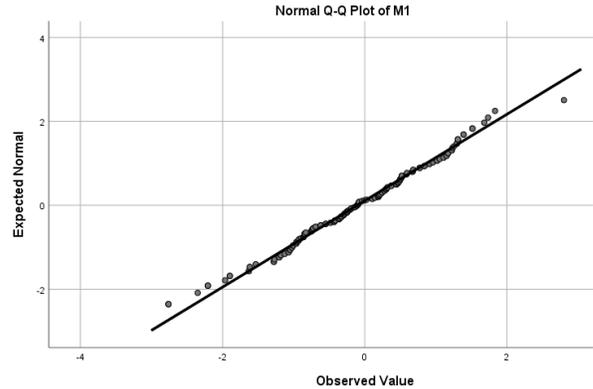
Normality plot for microfinance size

Figure 4.1 Normality Q-Q Plots for the research variables

Source: Research Data (2022)

4.2.2 Test for Multicollinearity

Multicollinearity can be quantified using the variance inflation factor (VIF) or by employing tolerance. The variance inflation factor denotes a scenario in which more than one independent variable are significantly linked with a correlation value greater than 0.9,

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hence leading to. Because of their interdependence, multicollinearity reduces the capacity of defining all variables. In line with Besley, 1980, as referenced by (Jingyu li, 2003), scholars have applied VIF= 10 as the key general principle to establish if there exists excessive association. All of the VIF values in the table below are below ten, indicating the fact that there does not exist multiple linearity in the research parameters. Furthermore tolerance values are less than 0.9.

Table 4.4: Testing Multicollinearity

		Tolerance	VIF
1	Credit Monitoring practice	.418	2.079
	Credit Appraisal practice	.213	4.342
	Credit risk Controls	.328	2.681
	Size of microfinance firms	.217	3.619

Dependent Variable: Nonperforming loans

Source: Research Data (2022)

4.3. Background Information

This investigation looked at the demographics of the participants, levels of education, and employment history. It was critical to analyze the aforementioned population features of the responders in order to determine if they had any bearing on the research variables.

4.3.1 Distribution of Respondents by Gender

The study examined how respondents distribution according to their gender categories as in table 4.5.

Table 4.5: Distribution of Respondents by gender

Gender	Frequency	Percentage (%)
Male	48	59.3
Female	33	40.7
Total	**81**	**100.0**

Source: (Field Research data, 2022)

The researcher noted that 59.3% of those surveyed were males while 40.7% comprised females. This demonstrates that the vast majority of the participants were males.

4.3.3 Distribution of Responders by Education

Table 4.6: Distribution of Responders by Education

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Degree	2	2.4	2.5	2.5
diploma	28	32.9	34.6	37.0
certificate	43	50.6	53.1	90.1
KCSE	8	9.4	9.9	100.0
Total	81	100.0	100.0	

Source: (Field Research data, 2022)

Table 4.6 gives a breakdown of the educational status of owners as well as staff. None had a PhD or masters. The results further indicated that those with a certificate were 50.6 while those with undergraduate qualifications accounted 2.4%. The findings further indicated that those with diploma only accounted for 32.9% whereas 9.4% had secondary level of education. From the findings respondents were skilled enough to handle credit management practices.

4.3.5 Work experience within the Microfinance

Table 4.7: Work experience in the Microfinance

	Frequency	Percent	Valid Percentage	Cumulative Percentage
0-4 years	20	23.5	24.7	24.7
5-9 years	30	35.3	37.0	61.7
10-14 years	26	30.6	32.1	93.8
over 15 years	5	5.9	6.2	100.0
Total	81	100.0	100.0	

Source: (Field Research Data, 2022)

From the above findings, it should be mentioned that a significant number of responders (35.3%) had 5 to 9 years of employment. The participants who had worked for 10-14 years were 30.6% while those over 15 years of experience were 5.9% of the participants under consideration. It additionally came up that at 0 to 4 years' experience amounted to 23.5%. The working experience was representative enough for access of credit management strategies influencing the performance of loans.

4.5. Descriptive Statistics for the Research

The purpose of this research was to estimate the effect of loaning administrative practices on loan nonperformance of Microfinance entities in Nairobi County, Kenya. The specific objectives were as follows; to determine the effect of Credit monitoring on loan nonperformance among microfinance entities within Nairobi county, to establish the effect of credit appraisal processes on loan nonperformance among Kenyan microfinance entities in Nairobi County, to ascertain possible effect of credit risk controls on credit

nonperformance among Kenyan microfinance entities in Nairobi County and to investigate whether the size of the microfinance business had any moderating effect on loan nonperformance among Kenyan microfinance entities in Nairobi. The study author employed the average as well as the standard deviation. The average figure is the mean, while standard deviation talks of how far the value differs from mean figure. The standard value preferred at not less than negative two and not more than positive two. Raw data was evaluated in respect to every study objective using SPSS software to generate the mean.

4.5.1. Credit Monitoring Practice

The participants were provided with a questionnaire to rate the degree to which they agreed or disagreed with the assertions on a Likert scale of 1 to 5, with 1 being strongly disagree, 2 being disagree, 3 being undecided, 4 being agree, and 5 being strongly agree. The results are tabulated in 4.8 as seen below.

Table 4.8: Credit Monitoring Practice

Credit Monitoring Practice	5	4	3	2	1	Mean	S.D
The organization conducts background check on clients before loaning.	8.6%	18.5%	31.5%	37%	4.3%	2.90	.470
In my organization we report client behavior	30.2%	19.1%	20.7%	20.0%	10.0%	4.80	.419
In my organization we have established credit documentation to approve and review counterparty credit limits	15.4%	16.0%	27.6%	38.5%	2.5%	4.83	.395
In my organization we base on client orientation analysis	85.8%	12.3%	1.9%	0.0%	0.0%	4.84	.416
In my organization we continuously monitor client's activity and creditworthiness during the time of a loan maturity	20.9%	21.8%	24.2%	26.1%	7.0%	4.06	.724
In my organization we maintain a control system of expenses incurred on loan repayments.	25.7%	20.0%	16.2%	29.1%	9.0%	4.47	.670
Average						**4.32**	**.516**

Source: (Field Research data 2022)

Credit monitoring is a continual procedure, and the investigator sought to know how much respondents agreed with different techniques. The respondents were further, asked whether there organization gave loans based on client orientation analysis. According to the research, 85.8% highly accepted that the organization conducts background check on clients before loaning while 12.3% agreed. It was also found that, as seen in table 4.7, that 1.9% were undecided. In general, it was evident that majority of respondents at 85.8%

agreed that client orientation analysis affected loan performance and it was strongly scored with an average of 4.84 and standard deviation of 0.416.

The study found that the organization had established credit documentation to approve and review counterparty credit limits since 15.4% strongly agreed. The research also revealed that 16.0% agreed, 27.6% were not very sure, 38.5% disagreed while 2.5% strongly disagreed. A large proportion of the participants denied that there existed credit documentation, as demonstrated by a high rate of 38.5%, with a mean of 4.83 and standard deviation of 0.395.

The results of the study additionally showed that the organization reports client behavior. It was established, as indicated in table 4.7, that 30.2% highly agreed, 19.1% agreed, 20.7% were not very sure, 20.0% disagreed and 10.0% emphatically disagreed. As indicated 30% of the respondents disagreed that the microfinance firms reported client behavior. The average score is 4.80 while the standard deviation is 0.419.

As to whether or not microfinance firms continuously monitor client's activity and creditworthiness during the time of a loan maturity it was established, as seen that 20.9% strongly agreed, 22.1% agreed, 25% were not very sure, 19.5% disagreed and 3.5% highly disagreed. As indicated by the research findings, it was concluded that 23% of the respondents disagreed that there was continuous client monitoring. The average finding is 4.68 with standard deviation of 0.468.

In addition, the results showed that 25.7% strongly agreed with the assertion that the organization maintains a control system of expenses incurred on loan repayments. It was further, revealed that 20% agreed while 16.2% undecided and 29.10% did not agree, while7.0% highly disagreed. Therefore, 36.1% of the responders disagreed that organization maintain a control system of expenses incurred on loan repayments with an

average of 4.47 and standard deviation of 0.670. Generally the mean value of 4.32 and standard deviation of 0.516 showed that microfinance institution had a Credit Monitoring Practice in place.

These findings agrees with Dimitrios Angelos and Vasilios (2016) conducted a study on antecedents of loan nonperformance and revealed that credit monitoring had a considerable favourable effect on the performance of loans. It further agrees with Solarin, Sulaiman and Jauhari (2016) who carried out a study on microfinance institutions that are Islamic in Malaysian sector and noted that credit monitoring was proved to be of considerable favourable effect on credit nonperformance. Pasha and Khemraj (2019) established the antecedents of loan nonperformance finance sector in Guyanese and noted that credit monitoring minimize nonperforming loans and therefore had a favourable considerable effect on performing loans. However disagrees Alshatti (2015) who established the effect on NPL ratio on financial performance microfinance entities indicating credit monitoring to be of negative insignificant effect on loan performance. The difference in findings on the disagreed findings was due to use of secondary data on past studies and primary data for the current study.

4.5.2. Credit Appraisal Practice

The researcher used a Likert scale of 1-5, where 1 means highly disagrees, 2 means disagree, 3 means uncertain, 4 means agree, and 5 means highly agree. The results are shown in table 4.8 below.

Table 4.9: Credit Appraisal Practice

Credit Appraisal Practice	5	4	3	2	1	Mean	S.D
Client credit history is a parameter for credit assessment	5.6%	10.5%	33.5%	43%	7.4%	4.78	.417
We document client performance for loan capacity purposes.	35.2%	29.1%	20.7%	15.0%	0.0%	4.70	.461
There is a credit committee evaluation to monitor customers capital ability	15.4%	16.0%	27.6%	38.5%	2.5%	4.83	.395
There is a skilled workforce for customer conditions	65.8%	22.3%	5.9%	5.0%	0.0%	4.76	.443
There is a credit rating to analyze clients collateral ability.	10.9%	21.8%	34.2%	25.1%	8.0%	4.35	.504
Average						**4.68**	**0.44**

Source: (Field Research data 2022)

The researcher wanted to know how much responders agree or disagree with credit appraisal practice. The researcher sought to investigate whether the client credit history was a parameter for credit assessment. The findings indicated as can be observed in table 4.8, that 7.4% totally disagreed, 43% disagreed, 33.5% was undecided, 10.5% agreed and 5.6% strongly agreed. Only 16.1% shows that there was credit history kept with an average of 4.78 and standard deviation of 0.417.

The study further sought to establish if there was a skilled workforce for customer conditions. Looking at the figures in table 4.8, the replies of the respondents were in the following order: None highly disagreed, 5% disagreed, 5.9% were uncertain, 22.3% agreed and 65.8% emphatically agreed. As a result, the most of the participants, (88.10%) affirmed and 10.9% disagreed that skilled workforce led to efficiency at work. The mean stood at 4.76 while the standard deviation was 0.443.

The results further revealed that 35.2% highly agreed that there were document client performance for loan capacity purposes. The results further indicated that 29.10% agreed, 20.7% were not sure, 15% disagreed and 0.0% emphatically disagreed. As indicated,

64.3%, of respondents agreed that all documentation used for guaranteed agreement are binding to all parties and legally enforceable while 35.7% disagreed .The average of the responses is 4.71 while the standard deviation is 0.461.

This study also sought to investigate whether there was a credit committee evaluation to monitor customers capital ability. It was discovered, as set out in table 4.8, that 15.4% strongly agreed, 16% agreed, 27.6% were uncertain, 38.5% did not agree and 2.5% highly disagreed. Therefore credit committee evaluation to monitor customers capital ability was by and large done. The mean is 4.56 while standard deviation is 0.522.

In establishing whether the there is a credit rating to analyze clients collateral ability, as indicated in table 4.8, it was observed that 8.0% emphatically disagreed, 25.10% disagreed, 34.2% were undecided, 21.8% agreed and 10.9% highly agreed. These results showed that only 32.7% of the participants agreed, 34.2% remained uncertain while 33.1% did not agree that the borrower's ability was affected by collateral adequacy with an average of 4.35 and standard deviation of 0.504.

 The research results above largely agree with those of Mureithi (2016) who did a research about credit appraisal techniques on performing loans in Kenyan microfinance entities and found credit appraisal to be of significant positive effect on loan performance. This further agrees with Goddard *et al.* (2015) who established the influential factors of financial performance of microfinance institutions indicating credit appraisal as of positive effect on loan performance. According to Karim, (2019) conducted a research on Malaysian microfinance credit appraisal technique on performing loans. It was evident that microfinance credit appraisal indicated a negative implication on the performance of loans. This has accelerated NPL as evident in a research on nine Microfinance entities in Malaysian for the 2003-2019 financial years. There exists pressure in managing bank

activities due to a squeezed balance sheet that had magnified loan nonperformance. This finding disagrees with Samy and Magda (2019) who investigated the effect of loan appraisal upon financial institutions loan performance in Egypt and noted had negative insignificant effect.

4.5.3. Credit Risk Control Practice

The researcher used a Likert scale of 1-5, where 1 means highly disagrees, 2 means disagree, 3 means uncertain, 4 means agree, and 5 means highly agree. The results are shown in table 4.10 below.

Table 4.10: Credit Risk Control Practice

Credit Risk Control Practice	5	4	3	2	1	Mean	S.D
In my organization we have formulated credit design collection procedures and systems to secure payment from customers	31.6%	33.5%	11.5%	14.1%	9.3%	4.39	.489
In my organization we have a credit monitoring committee that follows up cases of defaults	20.2%	29.1%	10.7%	30.0%	5.0%	4.43	.497
In my organization we have regular reviews delinquency management approach.	15.4%	16.0%	32.6%	34.5%	1.5%	4.38	.504
In my organization we design a convenient loan schedules based on clients ability	20.8%	27.3%	12.9%	34.9%	4.10%	4.55	.500
In my organization we have stringent credit period policy	25.7%	29.0%	18.2%	25.10%	2.0%	4.32	.469
Average						**4.41**	**.492**

Source: (Field Research data 2022)

A study on credit risk control practice effect on loan performance was ascertained. The research had the goal of establishing whether the entity designed convenient loan schedules based on clients ability. According to table 4.9, 4.10% highly disagreed, 34.9% disagreed, 12.9% were indecisive, 27.3% agreed, and 20.8% absolutely agreed. These results showed that 47.8% of the responders disagreed that organization designed a convenient loan schedules based on clients ability with an average of 4.55 and standard deviation of 0.5.

In establishing whether the organization have a credit monitoring committee that follows up cases of defaults, the research found that 5.0% firmly disagreed, 30.0% disagreed, 10.7% were uncertain, 29.10% agreed and 20.20% strongly agreed. From the findings 35% disagreed, 10.7 were undecided and 49.3% agreed. A bigger proportion of responders had of the opposing viewpoint that credit monitoring committee that follows up cases of defaults measures was in place. The average was 4.43 while standard deviation of 0.497.

The study was further interested in assessing whether organizations have formulated credit design collection procedures and systems to secure payment from customers. As shown in table 4.10, the following were the replies: 9.3% strongly disagreed, 14.10% disagreed, 11.5% were undecided, 33.5% agreed and 31.6% emphatically agreed. Consequently, most of the responders, 65.10% were in general agreement, 11.5% were undecided while only 23.4% were of the contrary opinion having the mean of 4.39 with a standard deviation of 0.489.

They also sought to assess whether microfinance institutions have regular reviews delinquency management approach. The findings, according to Table 4.9, indicate that 1.5% highly disagreed, 34.5% disagreed, 32.6% were uncertain, 16% agreed and 15.4% strongly agreed. Generally, it was clear that 67.10% of responders disagreed that the

microfinance institutions have regular reviews delinquency management approach with a mean of 4.38 and standard deviation of 0.504. The general mean was 4.41 for credit risk control practice.

These findings agree with Mendoza and Rivera (2017) who investigated the role of credit risk control in good financial results of microfinance firms in rural financial institutions in Uganda and found a positive significant effect of credit risk controls on performing loans. Similarly Fawad and Taqadus (2017) established the effect caused by robust credit risk control practice on the performance of loans among Pakistan microfinance businesses obtaining a considerable positive association of loan performance with credit risk monitoring. However according to Karim, Chan & Hassan, (2019) non performing loans were negatively affected by credit risk control practices. The difference in findings on the disagreed findings was due to use of different variables on past studies and primary data for the current research.

4.7. Inferential Analysis

This part of the paper contains inferential analysis, results, and comments. Evaluation of the hypotheses is discussed as well. From statistical analysis, when the significance level is below $p<0.05$, null hypothesis is dismissed while the other hypothesis is accepted.

4.7.1 Tests for Correlation

The test of Correlation Statistics additionally conducted and the resultant findings set out as shown in table 4.11.

Table 4.11: Correlation Statistics

Correlations

		CM	CA	CRC	TA	NPL/TL
CM Credit monitoring	Pearson Correlation	1	.109	-.475**	.126	-.498**
	Sig. (2-tailed)		.332	.000	.262	.000
	N	81	81	81	81	81
CA Credit appraisal	Pearson Correlation	.109	1	.318**	-.136	.173
	Sig. (2-tailed)	.332		.004	.226	.123
	N	81	81	81	81	81
CRC Credit risk control	Pearson Correlation	-.475**	.318**	1	.030	.742**
	Sig. (2-tailed)	.000	.004		.791	.000
	N	81	81	81	81	81
TA Total assets	Pearson Correlation	.126	-.136	.030	1	.073
	Sig. (2-tailed)	.262	.226	.791		.517
	N	81	81	81	81	81
NPL/TL NPL to Total loan	Pearson Correlation	.498**	.173	.742**	.073	1
	Sig. (2-tailed)	.000	.123	.000	.517	
	N	81	81	81	81	81

**. Correlation is significant at the 0.01 level (2-tailed).

Source; Researcher (2022)

The correlation coefficient is a statistical numerical indicator of covariation, or connection, involving two variables that reveals both the amount as well as the trajectory of the linear connection (Coopers & Schindler, 2014). A coefficient of correlation of 0.3 or lower indicates an insignificant relationship, 0.3 - 0.5 indicates a mild connection, and

higher than 0.5 indicates a high degree of correlation. Correlation values of >0.9 signal the existence of Multicollinearity for independent variables (Henson & Roberts, 2006).

Research data suggests that signs of NPL have a weak correlation with credit monitoring (r = 0.498, p< 0.00). This implies unit increase in credit monitoring led 0.4988 unit increase in nonperforming loans. These findings confine to Dimitrios Angelos and Vasilios (2016) conducted a study on antecedents of loan nonperformance which established that credit monitoring had a considerable negative effect on loan nonperformance. It further agrees with Alshatti (2015) who established the effect on NPL ratio on financial performance microfinance entities indicating credit monitoring to be of negative insignificant effect on loan nonperformance. The findings disagrees with Solarin, Sulaiman and Jauhari (2016) who carried out a study on microfinance institutions that are Islamic in Malaysian sector and noted that credit monitoring exerted a considerable positive effect nonperforming loans. Pasha and Khemraj (2019) established the antecedents of loan nonperformance finance sector in Guyanese and noted that credit monitoring minimizes nonperforming loans and therefore carries a positive significant effecton loan performance. These contradicting findings are as a result of most studies using secondary data and different variables.

Credit appraisal (r = 0.173, p>0.05). This means that every unit increase in credit appraisal led to 0.173 decrease in non perfoming loans. This shows a weak positive significance of Credit risk controls on loan nonperformance. These findings are in line with Mureithi (2016) who did a research investigation about credit appraisal techniques on loan performance in Kenyan microfinance entities and found credit appraisal to be of significant positive effect on loan performance. This further agrees with Goddard *et al.*

(2015) who established the influential factors of financial performance of microfinance institutions indicating credit appraisal as of positive effect on loan performance. According to Karim, (2019) conducted a research on Malaysian microfinance credit appraisal technique on loan performance. It was evident that microfinance credit appraisal had a negative implication on loan performance. This has accelerated NPL as evident in a research on nine Microfinance entities in Malaysian for the 2003-2019 financial years. There exists pressure in managing bank activities due to a squeezed balance sheet that had magnified loan nonperformance. This finding disagrees with Samy and Magda (2019) who investigated the effect of credit appraisal on lending institutions of loans in Egypt and noted had negative insignificant effect.

Credit risk controls (r = 0.742, p>0.05). The implication is that every unit rise in credit risk controls caused 0.742 unit decrease in nonperforming loans. This shows a strong positive significance of Credit risk controls on loan performance. The above findings agree with findings of Mendoza and Rivera (2017) who researched about the role played by credit risk control on financial performance of microfinance firms in rural financial institutions in Uganda and found a positive significant effect involving the performance of loans and credit risk management. Similarly Fawad and Taqadus (2017) established the effect of credit risk control practice on loan performance of Pakistan microfinance organizations obtaining a positive substantial link with regard to loan performance and credit risk surveillance. However according to Karim, Chan & Hassan, (2019) nonperforming loans were negatively affected by credit risk control practices. The findings demonstrated that credit management practices had a considerable favorable effect on nonperforming loans.

4.7.2 Simple regression analysis

4.7.2.1 *Credit monitoring has no significant effect on loan nonperformance among Kenyan microfinance entities*

The goal of this hypothesis aimed to find out the association of credit monitoring with loan nonperformance across Kenyan microfinance entities.. The hypothesis of the study that posits, $H_0 2$: Credit monitoring does not have a substantial effect on loan nonperformance among Kenyan microfinance entities.

Table 4.12: Regression Results of Credit monitoring on loan nonperformance among Kenyan microfinance entities

Model Summary

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.498[a]	.248	.238	.91212	.248	26.003	1	79	.000

a. Predictors: (Constant), Credit monitoring

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig
1	Regression	21.633	1	21.633	26.003	.000[a]
	Residual	65.725	79	.832		
	Total	87.358	80			

a. Predictors: (Constant), Credit monitoring

b. Dependent Variable: Total loan to NPL 2017-2021

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	7.309	.774		9.441	.000
	Credit monitoring	-.929	.182	-.498	-5.099	.000

a. Dependent Variable: TL to NPL 2017-2021

Source: (Field Research data 2022)

Table 4.12 reveals a slightly positive and substantial association involving credit monitoring and loan nonperformance among Kenyan microfinance entities. The correlation coefficient (R) of 0.498 means a strong positive link between Credit monitoring and loan nonperformance. The coefficient of determination, R-square of 0.248 suggests that Credit monitoring techniques explains 25% of the variance in loan nonperformance among Kenyan microfinance entities in Nairobi @ 5% significance level and 95% confidence level.

According to the ANOVA outcome, F=26.003 p=0.000, meaning it is below the p-value of 0.05. The findings show that the entire regression model was of significance when assessing application of the model for measuring the research variables. Hence there is a good match between credit monitoring and loan nonperformance among Kenyan microfinance entities. As a result, using a regression model to either approve or disregard the study's hypothesis is justifiable. The regression equation to estimate the degree of loan nonperformance stated as:

$Y = 7.309 - 0.929X_1$

From the regression equation, when credit monitoring changes by - 0.929, loan nonperformance changes by - 0.929. Thus, credit monitoring has a negative relationship with loan nonperformance. Here Y denotes loan nonperformance, X1 denotes credit monitoring, and e denotes term error. The results also show that credit monitoring is statistically significant (p=0.000 and p-value=0.05 thus p<p-value) in explaining loan nonperformance among Kenyan microfinance entities.

The regression findings in Table 4.12 employed regression coefficient to evaluate the initial study hypothesis, Ho1, which stated that credit monitoring practice had no

noteworthy effect on loan nonperformance across microfinance entities in Nairobi County, Kenya. Because the beta value was not equal to ($\beta \neq 0$, 0.591, the null hypothesis of the research was rejected at the 0.05 significance level, and the investigation came to the conclusion that there is a positive significant regression between credit monitoring practice and loan nonperformance of microfinance entities in Nairobi County, Kenya. This finding agrees with Dimitrios Angelos and Vasilios (2016) conducted a study on antecedents of loan nonperformance and discovered that credit monitoring posed a substantial positive effect on loan performance. It further agrees with Solarin, Sulaiman and Jauhari (2016) who carried out a study on microfinance institutions that are Islamic in Malaysian sector and noted that credit monitoring was shown to be of considerable positive effect on credit nonperformance. Pasha and Khemraj (2019) established the antecedents of loan nonperformance finance sector in Guyanese and noted that credit monitoring minimize nonperforming loans and therefore had a strong favorable effect on how well the loans performed. However disagrees Alshatti (2015) who established the effect on NPL ratio on financial performance microfinance entities indicating credit monitoring to be of negative insignificant effect on loan performance.

4.8.2. *Credit Appraisal Processes has no significant effect on loan nonperformance among microfinance institutions in Nairobi County, Kenya.*

The goal of this hypothesis was to find out if there was any causal connection of Credit appraisal practices with loan nonperformance. The hypothesis of the study stated, $H_0 2$: Credit appraisal practice has no statistical significant effect on loan nonperformance. The

hypothesis was examined at a 95.0% confidence level utilizing the significance of R

square and the Regression coefficient. Table 4.13 shows the findings.

Table 4.13: Regression Results of on loan nonperformance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
					Change Statistics				
1	.173[a]	.030	.018	1.03576	.030	2.430	1	79	.003

a. Predictors: (Constant), Credit appraisal

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.607	1	2.607	2.430	.123[a]
	Residual	84.751	79	1.073		
	Total	87.358	80			

a. Predictors: (Constant), CA

b. Dependent Variable: TL to NPL 2017-2021

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.931	.946		2.041	.045
	Credit appraisal	.386	.247	.173	1.559	.123

a. Dependent Variable: Total loan to NPL 2017-2021

Source: (Field Research data 2022)

Table 4.13 reveals a positive and substantial association between credit appraisal processes and nonperforming loans of Microfinance entities. The correlation coefficient (R) of 0.173 suggested a slight positive connection between Credit appraisal practice and loan nonperformance. The coefficient of determination, R-square of 0.03 means that Credit appraisal practice explains 3% of the variance in loan nonperformance of MFIs in Nairobi County, Kenya, @ 5% significance level and 95% confidence level.

According to the ANOVA outcome, F=2.43, p=0.000, meaning it is below the p-value of 0.05. The findings show that the entire regression model was of significance when assessing application of the model for measuring the research variables. Hence there is a good match between credit monitoring and loan nonperformance among Kenyan microfinance entities. As a result, using a regression model to either approve or disregard the study's hypothesis is justifiable.

The regression equation to estimate the connection of Credit appraisal practice with loan nonperformance among Microfinance entities in Nairobi County, Kenya stated as:

$Y = 0.1931 + 0.386X_2$

From the regression equation, when Credit appraisal practice changes by 0.386, loan nonperformance changes by 0.386. Thus, Credit appraisal practice has a positive relationship with loan nonperformance. Where Y= loan nonperformance , X_2=Credit appraisal practice and e=error of term.

The findings also reveal that Credit appraisal practice has statistical significance (p=0.000 and p-value=0.05 thus p>p-value) in analyzing loan nonperformance in Microfinance entities.

The outcome of running the regression in Table 4.13 made use of regression coefficient to evaluate the second study hypothesis, H_{O2} stated that, Credit appraisal practice has no significant effect on loan nonperformance microfinance entities in Nairobi County, Kenya. Because the beta value was not equal to ($\beta \neq 0$, 0.621, the null hypothesis of the research was dismissed at the 0.05 significance level, and the investigation came to the conclusion that there is a positive considerable connection between credit appraisal practice and loan nonperformance of microfinance entities in Nairobi County, Kenya.

These findings are in line with Mureithi (2016) did a research about the role of credit appraisal techniques on loan performance in Kenyan microfinance entities and found credit appraisal to be of significant positive effect on loan performance. This further agrees with Goddard *et al.* (2015) who established the influential factors of financial performance of microfinance institutions indicating credit appraisal as of positive effect on loan performance. According to Karim, (2019) conducted a research on Malaysian microfinance credit appraisal technique on loan performance. It became evident that microfinance credit appraisal posed a negative implication on loan performance. This has accelerated NPL as evident in a research on nine Microfinance entities in Malaysian for the 2003-2019 financial years. There exists pressure in managing bank activities due to a squeezed balance sheet that had magnified loan nonperformance. This findings disagrees with Samy and Magda (2019) who investigated the effect of credit appraisal on finance institutions' loan performance in Egypt and noted had negative insignificant effect.

4.8.3. Credit risk control practice has no significant effect on loan nonperformance among Microfinance Institutions in Nairobi County, Kenya.

The figures from the Table 4.14, illustrate the regression effect of credit risk control practice on loan nonperformance of Microfinance businesses. The major goal of this hypothesis was to find out if there was any causal connection of Credit risk control practices with loan nonperformance. The third hypothesis posits that: $H_0$3 credit risk control practice has no statistical significant effects on loan nonperformance of MFIs. At a 95.0% confidence level, it was evaluated utilizing the significance of R square, regression coefficient, and correlation coefficient. Table 4.14 shows the findings.

Table 4.14: Regression Results on credit risk control practice on loan nonperformance of Microfinance entities

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df 1	df2	Sig. F Change
					Change Statistics				
1	.742[a]	.550	.544	.70554	.550	96.491	1	79	.000

a. Predictors: (Constant), Credit risk control

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	48.032	1	48.032	96.491	.000[a]
	Residual	39.326	79	.498		
	Total	87.358	80			

a. Predictors: (Constant), Credit risk control

b. Dependent Variable: TL to NPL 2017-2021

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.674	.422		-1.599	.114
	Credit risk control	1.159	.118	.742	9.823	.000

a. Dependent Variable: TL to NPL 2017-2021

Source: (Field Research data 2022)

Table 4.14 reveals a positive and substantial association between credit appraisal processes and nonperforming loans of Microfinance entities. The correlation coefficient (R) of 0.742 suggested a high positive connection between Credit risk control practice and loan nonperformance. The coefficient of determination, R-square of 0.55 means that Credit risk control practice explains 55% of the variance in loan nonperformance of Microfinance entities in Nairobi County, Kenya, @ 5% significance level and 95% confidence level.

According to the ANOVA outcome, F=96.491. The findings show that the entire regression model was of significance when assessing application of the model for measuring the research variables. Hence there is a good match between credit risk control practice and loan nonperformance among Kenyan microfinance entities. As a result, using a regression model to either approve or disregard the study's hypothesis is justifiable.

The regression equation to estimate the connection of Credit risk control practice with loan nonperformance among Microfinance entities in Nairobi County, Kenya stated as:

Y= -0.674+ 1.159X_3

From the regression equation, when credit risk control practice changes by 1.159, loan nonperformance changes by 1.159. Thus, credit risk control practice has positive relationship with loan nonperformance. Where Y= loan nonperformance, X_3=credit risk control practice and e=error of term.

The results also show that credit risk control practice has statistical significance (p=0.000 and p-value=0.05 thus p>p-value) in analyzing loan nonperformance in Microfinance entities.

The outcome of running the regression in Table 4.14 made use of regression coefficient to evaluate the second study hypothesis, Ho_3 stated that, credit risk control practice has no significant effect on loan nonperformance microfinance entities in Nairobi County, Kenya. Because the beta value was not equal to ($\beta \neq 0$, 0.683, the null hypothesis of the research was dismissed at the 0.05 significance level, and 0.95 level of confidence and the investigation came to the conclusion that there is a positive considerable connection between credit risk control practice and loan nonperformance of microfinance entities in Nairobi County, Kenya.

These findings agrees with Mendoza and Rivera (2017 who did a research about the role of credit risk control on financial performance of microfinance firms in rural financial institutions in Uganda and found credit risk control to be of significant positive effect on loan performance. Similarly Fawad and Taqadus (2017) established the effect of credit risk control practice on performance of loans across Pakistan microfinance institutions obtaining a positive noteworthy link between performing loans and credit risk monitoring. However according to Karim, Chan & Hassan, (2019) nonperforming loans were negatively affected by credit risk control practices

4.9 Multiple Regression results without moderator

The findings shown in table 4.15 indicates that jointly credit monitoring practice, credit appraisal practice and credit risk control practice had a favorable and substantial effect on loan nonperformance with an r=0.718. The independent variables collectively explains 51.5% of variations on loan nonperformance with an R-square=0.515. The independent variables were of statistical significance in forecasting the dependent variable as indicated in Table 4.14.

According to the ANOVA outcome, F=56.005, p=0.000, meaning it is below the p-value of 0.05. The findings show that the entire regression model was of significance when assessing application of the model for measuring the research variables. Hence there is a good match between credit monitoring and loan nonperformance among Kenyan microfinance entities. As a result, using a regression model to either approve or disregard the study's hypothesis is justifiable.

Table 4.15: Summary of Multi Regression results without moderator

					Model Summary				
				Std.		Change Statistics			
			Adjusted	Error of	R				Sig. F
			R	the	Square	F			
Model	R	R Square	Square	Estimate	Change	Change	df1	df2	Change
1	.718	.515	.506	.70763	.515	56.005	3	77	.000

    a. Predictors: (Constant), credit monitoring practice, credit appraisal practice and credit risk control practice

				ANOVAᵃ			
		Sum of			Mean		
Model		Squares	Df		Square	F	Sig.
1	Regression	84.131	3		28.044	56.005	.000
	Residual	79.116	77		.501		
	Total	163.247	80				

a. Dependent Variable: Loan nonperformance
b. Predictors: (Constant), credit monitoring practice, credit appraisal practice and credit risk control practice

		Coefficientsᵃ				
		Unstandardized		Standardized		
		Coefficients		Coefficients		
			Std.			
Model		B	Error	Beta	T	Sig.
1	(Constant)	.135	.056		2.743	.007
	Credit monitoring practice	-.138	.081	.179	2.269	.002
	Credit appraisal practice	.223	.091	.214	2.557	.011
	Credit risk control practice	.443	.096	.405	4.521	.000

a. Dependent Variable: Loan nonperformance
Source: (Field Research data 2022)

From Table 4.15, the R Square Change (R^2) = 0.515, F-statistics (56.005), p = 0.000. An analysis of the strength of each predictor variable provided in the coefficient tables. In table 4.1, Credit monitoring practice was statistically significant, sig=.002 with t= 2.269 and B= -.138. This positive beta indicates that credit monitoring practice has a positive effect on loan nonperformance.

Credit appraisal practice was statistically significant, sig=.011 with t= 2.557 and B= .223. This positive beta indicates that credit appraisal practice has a positive effect on loan nonperformance.

Credit risk control practice was statistically significant, sig=.000 with t= 4.521 and B= .443. This positive beta indicates that credit appraisal practice has a positive effect on loan nonperformance.

Based on the results displayed in Table 4.15 without the effect of moderating variable (size of microfinance), there is strong relationship as clearly shown by the coefficient of Determination (R) of 0.718. The R^2 of 0.515 implied that credit management practice without moderating variable explains 51.5% of variations in loan nonperformance.

The multiple regression equation to predict the degree of variation of loan nonperformance in Microfinance entities in Nairobi County, Kenya without moderator is stated as:

$Y = 0.135 + 0.138X_1 + 0.223X_2 + 0.443X_3$

Beta coefficients for the variable (credit monitoring practice, credit appraisal practice and credit risk control practice) measures the number of unit's loan management procedures produce in a similar unit of loan nonperformance. The findings above established that credit monitoring practice, credit appraisal practice and credit risk control practice are statistically significant at (p=0.000 and p-value=0.05 thus p<p-value). Hence, the mathematical model equation was found to have significance.

4.9.1 Multi Regression results without and with moderator

Table 4.16: Multi Regression results without and with moderator

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.718[a]	.515	.506	.70763	.515	56.005	3	158	.000
2	.736[b]	.542	.530	.69040	.027	8.985	1	157	.003

a. Predictors: (Constant), credit monitoring practice, credit appraisal practice and credit risk control practice
b. Predictors: (Constant), credit monitoring practice, credit appraisal practice and credit risk control practice, Interaction

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	84.131	3	28.044	56.005	.000[b]
	Residual	79.116	158	.501		
	Total	163.247	161			
2	Regression	88.414	4	22.103	46.373	.000[c]
	Residual	74.834	157	.477		
	Total	163.247	161			

a. Dependent Variable: Loan nonperformance

b. Predictors: (Constant), credit monitoring practice, credit appraisal practice and credit risk control practice

Predictors: (Constant), credit monitoring practice, credit appraisal practice and credit risk control practice, Interaction

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	T	Sig.	Confidence at 95.0% Lower Bound	Confidence at 95.0% Upper Bound	Collinearity Statistics Tolerance	Collinearity Statistics VIF
without moderator										
1	(Constant)	.153	.056		2.743	.007	.043	.262		
	CMP	.183	.081	.179	2.269	.025	.024	.343	.493	2.027
	CAM	.232	.091	.214	2.557	.011	.053	.410	.438	2.284
	CRM	.434	.096	.405	4.521	.000	.244	.623	.383	2.612
Moderation										
2	(Constant)	.103	.055		2.371	.019	.022	.238		
	CMP*FS	.230	.079	.198	2.565	.011	.047	.359	.490	2.041
	CAM*FS	.338	.102	.354	3.764	.000	.182	.584	.330	3.034
	CRM*FS	.218	.107	.262	2.637	.009	.071	.492	.295	3.386

a. Dependent Variable: Loan nonperformance

Credit management practices (CMP), Firm Size (FS), Credit appraisal practices (CAM) and Credit risk practices (CRM)

The figures in table 4.16, indicate that with the inclusion of firm size of microfinance in the model relating credit management practice with loan nonperformance , the value of R slightly increased to 0.736 from 0.718. The Adjusted R Square also increased from 0.515 to 0.542. The adjusted R^2 figure indicates that nearly 54.2% of the change in loan nonperformance is represented by credit management practices when size of microfinance work as a moderating factor.

In addition we expect better predictions of loan nonperformance, (F-ratio > 1) with the factoring in of the moderating effect. However, the prediction is less accurate. The F-ratio has dropped significantly from 56.005 to 46.373.

The results above in model 2 established that credit monitoring practice technique, Credit appraisal practice, credit risk control practice and interaction (X_1, X_2,X_3 and M1) are statistically significant at (p=0.011, 0.000, 0.009 and 0.003 respectively and p-value=0.05 hence p<p-value). It follows that the significance of the model is established.

Additionally, the p-value of credit management practices shown in table 4.15 model 2 is seen to be below the significance level of the research i.e. 0.003 <0.05. Thus, size of microfinance significantly moderating affects the link between credit management techniques and loan nonperformance of microfinancing entities in Nairobi County, Kenya.

Table 4.17: Summary comparison of regression results

Description	Before moderation	After moderation
R	.718	.736
R-Square	.515	.542
Adjusted R- Square	.506	.530
R-Square change	.515	.027

Source: (Field Research data 2022)

In table 4.17, "R Square Change, showed an increase in variation explained by the addition of microfinance size. The change in R square of .027, which translated to 2.7% (027 x 100 = 2.7%), expressed as a percentage denoted an increase in the variation explained by the addition of the factor of moderation. The increase has statistical significance, $p < .005$. This research arrived at the conclusion that size of microfinance significantly affects the interaction of credit monitoring practice, credit appraisal practice and credit risk control practice with loan nonperformance of Microfinance entities.

The regression model to predict the degree of loan nonperformance stated as:

$$Y = 0.103+ 0.230X_1 + 0.338X_2 + 0.218X_3 + 0.022 M$$

From the regression equation, credit monitoring practice explains 23.0%, Credit appraisal practice explains 33.8% and credit risk control practice explains 21.8% of variations in loan nonperformance while when the moderator was added it explains 2.2%. Thus, size of microfinance has little significant effect between credit management practices and loan nonperformance.

The fourth null hypothesis H_04: Firm size has no considerable moderating effect on loan nonperformance among Kenyan microfinance institutions was rejected. On the contrary,

the alternative hypothesis accepted that credit management practices had significant and positive linear regression with loan nonperformance of microfinance business entities in Nairobi County, Kenya. These findings concur with Mureithi (2016) who carried out a research on credit management practice on the performance of loans in microfinancial entities in Kenya, and found size of microfinance to be of significant positive effect.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This part summarizes this research's principal results, findings, conclusions, proposals, and subject matters for future studies.

5.2 Summary of Findings

This part provides an overview of the study's principal conclusions. The goal of this research was to examine the effect of credit monitoring, Credit appraisal practice, credit risk control practice on loan nonperformance among Microfinance entities in Nairobi County, Kenya. The role of microfinance business size as a moderator on credit management procedures and loan nonperformance among Microfinance entities was examined.

5.2.1 Credit Monitoring

There is evidence that credit monitoring has a considerable connection with loan nonperformance as indicated by correlation coefficient (R) of -0.498. This means that credit monitoring practice has a negative significant though moderate relationship with loan nonperformance. The coefficient of determination, R-square of 0.248 indicates that credit monitoring practice explains 25% of the variance in loan nonperformance in Microfinance entities in Nairobi County, Kenya. Since significance value is given as

0.000, a value smaller than 0.05, it indicates the equation had statistical significance in calculating possible the effect of credit monitoring practice on loan nonperformance in Microfinance entities in Nairobi County, Kenya.

With an F-significance value of $p = 0.000$, the regression model had a 0.00% chance of accepting the null hypothesis. The opening study hypothesis, H01 proposed that credit monitoring practice had no substantial effect on loan nonperformance. As a result of the model's significance, the null hypothesis was ruled out on the ground that credit monitoring practice had a substantial and robust positive relationship with loan nonperformance in Microfinance entities in Nairobi County, Kenya.

5.2.2 Credit Appraisal Practice

This research also tried to determine the effect of credit appraisal practice on loan nonperformance in Microfinancial entities in Nairobi County, Kenya. The results revealed the existence of positive and significant relations of Credit appraisal practice with loan nonperformance. The correlation coefficient (R) of 0.173 implied a favourable connection linking Credit appraisal practice and loan nonperformance. With a significant value of $p = 0.000$, which is less than 0.05, the coefficient of determination, R-square of 0.03 indicated that Credit assessment practice explained 3% of the variation in loan nonperformance.

With the F-significance value of $p = 0.000$ which was calculated, indications were that the regression equation had a 0.00% chance of accepting the null hypothesis. The second study hypothesis, H02 proposed that credit appraisal practice had no substantial effect on loan nonperformance. As a result of the model's significance, the null hypothesis was ruled

out on the basis that credit appraisal practice had a substantial and robust positive relationship with loan nonperformance in Microfinance entities in Nairobi County, Kenya.

5.2.3 Credit Risk Control Practice

The third objective of this research sought to establish the effect of Credit risk controls practice upon loan nonperformance. Research findings revealed the existence of strong and positive connection of credit risk control practice on loan nonperformance as shown by correlation coefficient (R) at 0.742. The R square of 0.55 suggested that credit risk control practices account for 55% of the variance in loan nonperformance. The model's significance value of p = 0.0000.05 indicated that it is of statistical significance for forecasting how Credit risk control practices affect loan nonperformance.

This meant that a unit shift in credit risk management practice would result in a corresponding shift in loan nonperformance in Microfinance entities in Nairobi County, Kenya with 0.742 in the same direction. Credit risk control practice and loan nonperformance were significant in predicting the extent of loan performance at the 5% level of significance and 95% level of confidence.

With the F-significance value of p = 0.000 which was calculated, indications were that the regression equation had a 0.00% chance of accepting the null hypothesis. The third study hypothesis, H03 proposed that credit risk control practice had no substantial effect on loan nonperformance. As a result of the model's significance, the null hypothesis was ruled out on the basis that credit risk control practice had a substantial and robust positive relationship with loan nonperformance in Microfinance entities in Nairobi County, Kenya.

The findings indicated that size of microfinance has a positive and substantial effect on the effect of credit risk mitigations strategies on loan nonperformance.

Credit management practices with moderator were statistically significant, p=.000 with t= 13.007 and a B= .717.

5.2.4 Firm Size

From the findings, without the effects of moderating variable (microfinance size), there was a positive connection as shown by the value (R) = 0.845. When size of microfinance included, the relationship decreased to 0.717 showing a slight reduction. The R^2 of 0.714 implied that Credit management practices explains 71.4% of variations in loan nonperformance. When size of microfinance introduced, it explains 51.4 % of variations in loan nonperformance among Microfinance entities in Nairobi County, Kenya. This indicates that size of microfinance is a hindrance to loan nonperformance other than activators because it does not significantly affect loan nonperformance of Microfinance entities.

However, the H_04 stated that the size of microfinance had no significance as a moderating factor on the effect of credit management practices on loan nonperformance among microfinance entities of Nairobi County, Kenya. The null hypotheses was rejected since the findings indicated that the size of the institution significantly affected the effect of credit management practices on loan nonperformance of Microfinance entities of Nairobi County, Kenya.

The analysis results were as follows: credit monitoring practice (β=-0.498; p_value 0.000 < 0.05) while credit appraisal (β = 0.173; p_value 0.000 < 0.05). Credit risk control

practice had (B=0.742, p_value 0.000 < 0.05) whereas size of microfinance had (β=0.007; p_value 0.003 < 0.05). Thus all null hypotheses were abandoned and alternative hypotheses accepted, namely, credit monitoring practice, Credit appraisal practice, credit risk control practice and microfinance size significantly affect loan nonperformance across Microfinance entities within Nairobi County, Kenya.

5.3 Conclusion

This research demonstrated that there exists a significantly strong positive effect of credit monitoring practice on loan nonperformance among Microfinance institutions in Nairobi County, Kenya. This shows that credit monitoring practices are of high importance hence need to practice them.

This research also confirmed that there exists a significantly moderate positive effect of Credit appraisal practice on loan nonperformance among Microfinance institutions in Nairobi County, Kenya. This shows that credit appraisal is of high importance hence the need to practice it.

The study also found out that there was a weak but positive significant effect of credit risk control practice in conjunction with size of microfinance on loan nonperformance among Microfinance institutions in Nairobi County, Kenya. This shows that credit risk control practices are of high importance hence the need to practice them. On the basis of these conclusions, the research established that the size of microfinance significantly affects credit monitoring practice, Credit appraisal practice, credit risk control practice on loan nonperformance among Microfinance entities in Nairobi County, Kenya. The increase on R^2 value shows its moderating effect.

5.4 Recommendations of the Study

The scholar proposes the following recommendations considering the study's results:

The research proposes that Microfinance entities need to strengthen credit monitoring practices to minimize debt writing off and loan nonperformance. By ensuring strong credit monitoring practices the microfinance institutions will have a positive result of increased net income.

The study also recommended that Microfinance entities should consider appraising customers to determine the feasible amount of loan to be taken. This enables them maximize on operations and minimize or avoid losses.

The study further recommended credit risk control practice to stakeholders. This strengthens an organization's risk assessment methodologies and enhances comprehension of its risk profile and tolerance for risks.

The study recommends adoption of asset growth strategies to strengthen the microfinance size.

5.5 Area for Further Research

Considering the research gaps identified, the study does recommend as follows:

More studies to explore the establishing of other pertinent factors affecting loan nonperformance.

Further, carry out the research on credit management practices and procedures on loan nonperformance of deposit taking SACCOs and commercial banks in Kenya.

Since firm size was the moderator, other moderators such as age of the firm can be employed for a similar study.

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APPENDICES

Appendix I: Listing of Microfinance Institutions in Nairobi County 2021

BANKS (Commercial banks under taking micro finance services)

1. Sidian Bank

2. Equity Bank

3. Co-operative Bank

4. Kenya Post Office Savings Bank

5. Jamii Bora Bank

WHOLESALE MFIs

1. Jitegemee Trust

2. MESPT

3. Stromme Microfinance East Africa Ltd

MICROFINANCE INSTITUTIONS

1. Kenya Women Microfinance Bank Ltd

2. Rafiki Microfinance Bank Ltd

3. Faulu Kenya Microfinance Bank Ltd

4. SMEP Microfinance Bank Ltd

5. Remu Microfinance Bank Ltd

6. Uwezo Microfinance Bank Ltd

7. Century Microfinance Bank Ltd

8. Sumac Microfinance Bank Ltd

9. U&I Microfinance Bank Ltd

10. Choice Microfinance Bank Ltd

11. Caritas Microfinance Bank Ltd

12. Daraja Microfinance Bank Ltd

13. Maisha Microfinance Bank

14. Key Microfinance Bank

RETAIL MFIs

1. Eclof Kenya

2. Vision Fund Kenya Ltd

3. Bimas Kenya Ltd

4. Zenka Finance

5. Fin Credit Services Ltd

6. Juhudi Kilimo

7. Select Finance Services

8. Ngao Credit

9. Platinum Credit Ltd

10. Taifa Options Microfinance

11. Real People Ltd

12. Neema Heep Ltd

13. Ushindi Bora Ltd

14. Hand In Hand Eastern Africa

15. Premier Credit Ltd

16. Moneyworth Investment Ltd

17. Hazina Development Trust

18. Springboard Capital

19. Progressive Credit Ltd

20. Longitude Finance

21. Jiweze Ltd

22. Liberty Africa Technologies Ltd

23. Diversity Microcredit

24. Momentum Credit

25. Weighbridge Ventures

26. Karibu Kenya Ventures

Appendix II: Study Population

No	Microfinance category	General manager	credit manager	finance officer	Accountants staff	Total population
1	Sidian Bank (former K-Rep bank) MF wing	1	1	1	1	4
2	Equity Bank MF wing	1	1	1	1	4
3	Co-operative Bank MF wing	1	1	1	1	4
4	Kenya Post Office Savings Bank MF wing	1	1	1	1	4
5	Jamii Bora Bank MF wing	1	1	1	1	4
6	Jitegemee Trust	1	1	1	1	4
7	MESPT	1	1	1	1	4
8	Stromme Microfinance EA Ltd	1	1	1	1	4
9	Kenya Women Microfinance Ltd	1	1	1	1	4
10	Rafiki Microfinance Bank Ltd	1	1	1	1	4
11	Faulu Kenya Microfinance Ltd	1	1	1	1	4
12	SMEP Microfinance Bank Ltd	1	1	1	1	4
13	Remu Microfinance Bank Ltd	1	1	1	1	4
14	Uwezo Microfinance Bank Ltd	1	1	1	1	4
15	Century Microfinance Bank Ltd	1	1	1	1	4
16	Sumac Microfinance Bank Ltd	1	1	1	1	4

17	U&I Microfinance Bank Ltd	1	1	1	1	4
18	Choice Microfinance Bank Ltd	1	1	1	1	4
19	Caritas Microfinance Bank Ltd	1	1	1	1	4
20	Daraja Microfinance Bank Ltd	1	1	1	1	4
21	Eclof Kenya	1	1	1	1	4
22	Vision Fund Kenya Ltd	1	1	1	1	4
23	Maisha Microfinance Bank Ltd	1	1	1	1	4
24	Key Microfinance Bank Ltd	1	1	1	1	4
25	Bimas Kenya Ltd	1	1	1	1	4
26	Zenka Finance	1	1	1	1	4
27	Fin Credit Services Ltd	1	1	1	1	4
28	Juhudi Kilimo	1	1	1	1	4
29	Select Finance Services	1	1	1	1	4
30	Ngao Credit	1	1	1	1	4
31	Platinum Credit Ltd	1	1	1	1	4
32	Taifa Options Microfinance	1	1	1	1	4
33	Real People Ltd	1	1	1	1	4
34	Neema Heep Ltd	1	1	1	1	4

35	Ushindi Bora Ltd	1	1	1	1	4
36	Hand In Hand Eastern Africa	1	1	1	1	4
37	Premier Credit Ltd	1	1	1	1	4
38	Moneyworth Investment Ltd	1	1	1	1	4
39	Hazina Development Trust	1	1	1	1	4
40	Springboard Capital	1	1	1	1	4
41	Progressive Credit Ltd	1	1	1	1	4
42	Longitude Finance	1	1	1	1	4
43	Jiweze Ltd	1	1	1	1	4
44	Liberty Africa Technologies Ltd	1	1	1	1	4
45	Diversity Microcredit	1	1	1	1	4
46	Momentum Credit	1	1	1	1	4
47	Weighbridge Ventures	1	1	1	1	4
48	Karibu Kenya Ventures	1	1	1	1	4
	Total	48	48	48	48	192

APPENDIX III: LETTER OF INTRODUCTION

KAKAMEGA

Dear respondent,

RE: <u>REQUEST FOR RESEARCH DATA</u>

I am Jacob Wafula, a student at Masinde Muliro University of Science and Technology (MMUST), Kakamega Main Campus, striving to achieve a Master of Business Administration (Finance). I am conducting research in order to complete my degree in the above course.

The study's goal is to look into the effect of credit management practices on nonperforming loans at microfinance institutions in Nairobi County, Kenya. Consequently, I am kindly asking that you assist me in the study by filling out the attached questionnaire as completely as possible.

I will value your sincere contribution and I assure you that any information you provide will be kept strictly confidential and used only for academic purposes.

Please feel free to contact me if you have any questions. Thank you.

Yours faithfully

Wafula Jacob

Masters student

Appendix IV: Questionnaire

PART ONE: GENERAL INFORMATION

Gender.

Male ☐

Female ☐

Level of education.

Secondary ☐

Certificate ☐

Diploma ☐

Degree ☐

Masters ☐

PhD ☐

Work experience

1 year and below ☐

2-5 years ☐

6-10 years ☐

Above 10 years ☐

2. When did your organization start operating?

Less than 5 Years ☐

Between 5 and 10 Years ☐

Between 10 and 15 Years ☐

Above 15 Years ☐

PART TWO:

CREDIT MONITORING

	Express your level of agreement or disagreement with the following statements on a scale of 1 to 5. where 1=Strongly Disagree, 2=Disagree, 3=Fairly Agree 4=Agree, 5=Strongly Agree	1	2	3	4	5
1	In my organization, we conduct background check on clients before lending to confirm that they are capable and prepared to pay back a loan.					
2	In my organization, we report client loan default; action is taken to reclaim both the principal and interest due.					
3	In my organization we have established credit documentation to approve and review counterparty credit limits					
4	In my organization we do not extend loans to those who are not creditworthy based on client orientation analysis					
5	In my organization we continuously monitor client's activity and creditworthiness during the time of a loan maturity					
6	In my organization, we maintain a control system of expenses incurred on loan repayments.					

CREDIT APPRAISAL

	Express your level of agreement or disagreement with the following statements on a scale of 1 to 5. where 1=Strongly Disagree, 2=Disagree, 3=Fairly Agree 4=Agree, 5=Strongly Agree	1	2	3	4	5
1	When conducting a credit appraisal, my institution takes into account a client's credit record and character.					
2	In my institution, we maintain loan borrower's history records in the borrower's credit file.					
3	In my institution there is a credit appraisal committee to assess customers capital ability					
4	In my institution has qualified staff to conduct Credit appraisal of customer conditions.					
5	In my institution, we have an internal credit scorecard that is used to analyze client's collateral ability.					

CREDIT RISK CONTROLS

	Express your level of agreement or disagreement with the following statements on a scale of 1 to 5. 1=Strongly Disagree, 2=Disagree, 3=Fairly Agree 4=Agree, 5=Strongly Agree	1	2	3	4	5
1	In my organization we have formulated credit design collection procedures and systems to secure payment from customers					
2	In my organization we have a credit monitoring committee that follows up cases of defaults					
3	In my organization, we have regular reviews delinquency management approach on debt collection policy to strengthen credit management standards.					
4	In my organization we design a convenient loan schedules based on clients ability					
5	In my organization we have stringent credit period policy					

Appendix V: Document Analysis

Microfinance Name					
Year	Total Loan	Nonperforming Loan	TL/NPL Ratio	Total Assets	Natural Log of Assets
2017					
2018					
2019					
2020					
2021					

Appendix VI: Raw Data

TOTAL ASSETS

	Microfinance	(M) 2017	M 2018	M 2019	M 2020	M 2021
1	Kenya women MFI	10295	54463.9	26451.6	12985	31267
2	Faulu MFI	54191	10515	12393.8	17222	37890
3	Rafiki MFI	6505	15332.1	8466.28	23145	27212
4	SMEP MFI	3548	10235.5	57083.3	94428	126842
5	Maisha MFI	11745	6856.57	9317.7	30612	21947
6	Caritus MFI	13456	17880.5	8652.48	12886	32643
7	Century MFI	19302	9223.08	6860.3	12729	11022
8	U & I MFI	12851	12887.3	11865.6	44917	33500
9	Uwezo MFI	2610	10004.9	8987.92	13263	11378
10	Choice MFI	69051	57083.3	112029	54478	16858
11	Muungano MFI	53456	25329.2	8584.54	5114	18743
12	Daraja MFI	11148	5250.61	43996.1	10147	12985

FOR ROA	2017			2018			2019			2020			2021		
	T. L	NPL	RATIO	TOTAL L	NPL	RATIO	TOTAL L	NPL	RATIO	TOTAL L	NPL	RATIO	TOTAL L	NPL	RATIO
Microfinance													**2020**		
1 Kenya women MFI	132497	15038	0.1135	139406	17621	0.1264	257566	28953	0.11241	290564	26185	0.09011784	355630	42825	0.12042
2 Faulu MFI	176349	11472	0.06505	177224	12615	0.07118	231026	17064	0.0738618	281516	31156	0.110672218	307324	51781	0.16849
3 Rafiki MFI	19354	272	0.01405	20771	435	0.02094	18615	13910	0.7472468	244395	30516	0.124863438	259698	35995	0.138603
4 SMEP MFI	38089	3392	0.08905	43943	2666	0.06067	152287	11036	0.0724684	205304	13519	0.065848693	229677	17099	0.074448
5 Maisha MFI	105082	7450	0.0709	107038	7798	0.07285	133166	21661	0.1626616	163859	19345	0.118058819	176597	25038	0.14178
6 Caritus MFI	4339	816	0.18806	39763	2252	0.05664	155498	16644	0.1070367	155307	12892	0.083009781	165948	19747	0.118995
7 Century MFI	40170	1855	0.04618	7232	18714	2.58767	144434	21115	0.1461913	152807	18799	0.123024469	160665	20178	0.125591
8 U & I MFI	241395	11273	0.0467	68153	27658	0.40582	117786	15830	0.1343963	144483	20058	0.138826021	152711	22337	0.14627
9 Uwezo MFI	68616	29987	0.43703	7741	809	0.10451	118271	9271	0.0783878	60677	25175	0.414901857	74774	26438	0.353572
10 Choice MFI	7109	856	0.12041	38080	1724	0.04527	66123	31461	0.4757951	54389	8244	0.151574767	63111	9391	0.148801
11 Muungano MFI	28242	805	0.0285	5680	592	0.10423	49215	13334	0.2709337	49335	4126	0.08363231	51151	6342	0.123986
12 Daraja MFI	5361	158	0.02947	3242	1438	0.44355	47023	8138	0.1730642	45822	12316	0.268779189	41836	10799	0.258127

Appendix VII: Research Permit

Ref No: 951512

Date of Issue: 14/October/2022

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RESEARCH LICENSE

This is to Certify that Fr.. Jacob Wafula of Masinde Muliro University of Science and Technology, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: Debtor management Practices and Nonperforming Loans among Microfinance institutions in Nairobi County Kenya for the period ending : 14/October/2023.

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