

**EFFECT OF BORROWERS INFORMATION ON CREDIT RISK  
MANAGEMENT: A CASE OF MICROFINANCE INSTITUTIONS IN  
NAKURU TOWN**

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Management Science in Partial Fulfillment of the Requirement for the Award of  
a Master of Business Administration**

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## DECLARATION AND RECOMMENDATION

### Declaration

This research project is my original work and has not been submitted for any award of a degree or diploma in any institution of higher learning.

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### Recommendation

This research project has been submitted for examination with my recommendation as University Supervisor.

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## **DEDICATION**

This research project is dedicated to my entire family. What I owe them, words cannot express entirely.

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## ABSTRACT

Throughout the developing world, the growing availability of consumer credit and the heightened competition between microfinance institutions have made the necessity of borrower information all the more apparent. However, the extent and efficiency of borrower information vary greatly. Borrowers have often used the underlying challenge of information asymmetry to create multiple bad debts in MFIs in Kenya. The purpose of this study therefore was to establish the effect of borrowers' information on credit risk management in MFIs in Nakuru Town, Kenya. The study specifically looked at the effect of information on borrower's capacity, borrower's capital, borrower's collateral, borrower's conditions and borrower's character on credit risk management. The study employed a descriptive research design and targeted managers and finance related employees in 18 MFIs in Nakuru Town, Kenya who totaled 198. From this population, statistical formula was employed to establish a sample size of 67. The sample was allocated proportionately and later simple random sampling was used to collect data. The study used a closed ended questionnaire which was piloted to ensure validity and reliability. The data collected was then coded and analyzed using SPSS Version 21 and presented in tables. For purposes of testing the hypothesis of the study, a regression analysis was carried out. It was established that the coefficient of correlation (R) for the relationship between the independent variables and the dependent variable was 0.433. The value therefore indicated a strong and positive correlation. The  $R^2$  value of 0.188 implies that 18.8% of the variations in credit risk management of MFIs in Nakuru Town can be explained by the variations in independent variables in the study, that is, information on the 5Cs of applicants had an effect on credit risk management.

## TABLE OF CONTENTS

|   |             |
|---|-------------|
| <b>DECLARATION AND RECOMMENDATION</b> .....                                 | <b>ii</b>   |
| <b>COPYRIGHT</b> .....  | <b>iii</b>  |
| <b>DEDICATION</b> .....   | <b>iv</b>   |
| <b>ACKNOWLEDGEMENT</b> .....  | <b>v</b>    |
| <b>ABSTRACT</b> .....   | <b>vi</b>   |
| <b>TABLE OF CONTENTS</b> .....  | <b>vii</b>  |
| <b>LIST OF TABLES</b> .....   | <b>x</b>    |
| <b>LIST OF FIGURE</b> .....   | <b>xii</b>  |
| <b>ABBREVIATIONS AND ACRONYMS</b> .....                                     | <b>xiii</b> |
| <b>CHAPTER ONE:INTRODUCTION</b> .....                                       | <b>1</b>    |
| 1.1 Background of the Study .....   | 1           |
| 1.1.1 Concept of 5Cs of Credit.....   | 3           |
| 1.1.2 Concept of Microfinance.....  | 4           |
| 1.2 Statement of the Problem.....   | 4           |
| 1.3 Objectives of the Study.....  | 5           |
| 1.3.1 General Objective .....   | 5           |
| 1.3.2 Specific Objectives .....   | 5           |
| 1.4 Hypotheses of the Study .....   | 6           |
| 1.5 Justification of the Study .....  | 6           |
| 1.6 Scope of the Study.....   | 6           |
| 1.7 Limitations of the Study .....  | 7           |
| 1.8 Operational Definition of Terms .....                                   | 8           |
| <b>CHAPTER TWO:LITERATURE REVIEW</b> .....                                  | <b>9</b>    |
| 2.1 Introduction.....   | 9           |
| 2.2 Theoretical Framework.....  | 9           |
| 2.2.1 Adverse Selection Theory .....  | 9           |
| 2.2.2 Theory of Credit Scoring .....  | 10          |
| 2.2.3 Moral Hazard Theory.....  | 11          |
| 2.2.4 Transaction Cost Theory.....  | 11          |
| 2.3 Empirical Review .....  | 12          |
| 2.3.1 Borrower’s Capacity and Credit Risk Management .....                  | 13          |
| 2.3.2 Borrower’s Capital and Credit Risk Management .....                   | 14          |
| 2.3.3 Borrower’s Collateral, or Guarantees and Credit Risk Management ..... | 15          |

|   |           |
|---|-----------|
| 2.3.4 Borrower’s Conditions and Credit Risk Management.....                     | 16        |
| 2.3.5 Borrower’s Character and Credit Risk Management.....                      | 17        |
| 2.3.6 Credit Risk Management in Microfinance Institutions.....                  | 18        |
| 2.4 Conceptual Framework.....   | 20        |
| 2.5 Research Gaps.....  | 21        |
| <b>CHAPTER THREE:RESEARCH METHODOLOGY .....</b>                                 | <b>22</b> |
| 3.1 Introduction.....   | 22        |
| 3.2 Research design.....  | 22        |
| 3.3 Target Population .....   | 22        |
| 3.4 Sample Size and Sampling Technique .....                                    | 22        |
| 3.4.1 Sample Size .....   | 23        |
| 3.4.2 Sampling Technique .....  | 23        |
| 3.5 Data Collection Instruments .....   | 23        |
| 3.6 Data Collection Procedures.....   | 24        |
| 3.7 Piloting.....   | 24        |
| 3.7.1 Validity of Instruments .....   | 24        |
| 3.7.2 Reliability of Instruments.....   | 25        |
| 3.8 Data Analysis and Presentation.....   | 25        |
| <b>CHAPTER FOUR:RESULTS AND DISCUSSIONS.....</b>                                | <b>27</b> |
| 4.1 Introduction.....   | 27        |
| 4.2 Response Rate .....   | 27        |
| 4.3 Respondents’ Profile .....  | 27        |
| 4.3.1 Gender Distribution of the Respondents.....                               | 28        |
| 4.3.2 Distribution of Respondents by Age Group.....                             | 28        |
| 4.3.3 Distribution of Respondents by Attained Educational Level.....            | 29        |
| 4.3.4 Working Experience of the Respondents.....                                | 29        |
| 4.4 Findings of the Study Variables .....                                       | 30        |
| 4.4.1 Descriptive Statistical Results on Borrower’s Capacity Information.....   | 30        |
| 4.4.2 Descriptive Statistical Results on Borrower’s Capital Information .....   | 32        |
| 4.4.3 Descriptive Statistical Results on Borrower’s Collateral.....             | 34        |
| 4.4.4 Descriptive Statistical Results on Borrower’s Conditions Information..... | 36        |
| 4.4.5 Descriptive Statistical Results on Borrower’s Character Information.....  | 39        |
| 4.4.6 Descriptive Statistical Results for Credit Risk Management .....          | 40        |
| 4.5 Correlation Analysis .....  | 42        |



|   |           |
|---|-----------|
| 4.5.1 Correlations between Borrower’s Capacity Information and Credit Risk Management.....                            | 42        |
| 4.5.2 Correlations between Borrower’s Capital Information and Credit Risk Management.....                             | 43        |
| 4.5.3 Correlations between Borrowers’ Collateral or Guarantees Information and Credit Risk Management .....           | 44        |
| 4.5.4 Correlations between Borrower’s conditions and Credit Risk Management.....                                      | 45        |
| 4.5.5 Correlations between Borrower’s Character and Credit Risk Management  | 46        |
| 4.6 Hypothesis Testing .....  | 47        |
| 4.6.1 Effect of Borrower’s Capacity Information on Credit Risk Management ..  | 48        |
| 4.6.2 Effect of Borrower’s Capital Information on Credit Risk Management in Microfinance Institutions in Nakuru ..... | 49        |
| 4.6.3 Effect of Borrower’s Collateral, or Guarantees Information on Credit Risk Management.....                       | 51        |
| 4.6.4 Effect of Borrower’s conditions on Credit Risk Management.....  | 53        |
| 4.6.5 Effect of Borrower’s Character on Credit Risk Management.....   | 56        |
| 4.7 Multiple Regression.....  | 57        |
| <b>CHAPTER FIVE:SUMMARY, CONCLUSION AND</b>   |           |
| <b>RECOMMENDATIONS .....</b>  | <b>61</b> |
| 5.1 Introduction.....   | 61        |
| 5.2 Summary of the Findings.....  | 61        |
| 5.2.1 Effect of Borrower’s Capacity Information on Credit Risk Management ..  | 61        |
| 5.2.2 Effect of Borrower’s Capital Information on Credit Risk Management ....   | 61        |
| 5.2.3 Effect of Borrower’s Collateral on Credit Risk Management.....  | 62        |
| 5.2.4 Effect of Borrower’s Conditions Information on Credit Risk Management .....                                     | 63        |
| 5.2.5 Effect of Borrower’s Character Information on Credit Risk Management.   | 63        |
| 5.3 Conclusion .....  | 64        |
| 5.4 Recommendations of the Study .....  | 65        |
| 5.5 Suggestions for Further Research .....  | 65        |
| <b>REFERENCES .....</b>   | <b>66</b> |
| <b>APPENDICES .....</b>   | <b>72</b> |

## LIST OF TABLES

|   |    |
|---|----|
| Table 3.1 Employees within the MFIs in Nakuru Town .....  | 23 |
| Table 3.2: Reliability Test Statistics.....   | 25 |
| Table 4.1: Distribution of Respondents by Gender .....  | 28 |
| Table 4.2: Distribution of Respondents by Age.....  | 28 |
| Table 4.3: Distribution of Respondents by Educational Level .....   | 29 |
| Table 4. 4: Distribution of Respondents According to Working Experience .....                             | 30 |
| Table 4. 5: Effect of Borrower’s Capacity Information on Credit Risk Management .                         | 31 |
| Table 4. 6: Descriptive Statistical Results on Borrower’s Capital Information.....                        | 33 |
| Table 4. 7: Descriptive Statistical Results on Borrower’s Collateral.....                                 | 35 |
| Table 4. 8: Descriptive Statistical Results on Borrower’s Conditions Information .....                    | 37 |
| Table 4.9: Descriptive Statistical Results on Borrower’s Character Information.....                       | 39 |
| Table 4.10: Descriptive Statistical Results for Credit Risk Management .....                              | 41 |
| Table 4.11: Correlations between Borrower’s Capacity Information and Credit Risk<br>Management .....      | 43 |
| Table 4.12: Correlations between Borrower’s Capital Information and Credit Risk<br>Management .....       | 44 |
| Table 4.13: Correlations between Collateral or Guarantors Information and Credit<br>Risk Management ..... | 45 |
| Table 4.14: Correlations between Borrower’s conditions and Credit Risk<br>Management. ....                | 46 |
| Table 4.15: Correlations between Borrower’s Character and Credit Risk Management<br>.....                 | 47 |
| Table 4.16: Table Model Summary.....  | 48 |
| Table 4. 17: Analysis of Variances (ANOVA).....   | 48 |
| Table 4.18: Coefficients .....  | 49 |
| Table 4.19: Model Summary .....   | 50 |
| Table 4. 20: Analysis of Variances (ANOVA).....   | 50 |
| Table 4. 21: Coefficients for Information on Borrower’s Capital .....                                     | 51 |
| Table 4.22: Model Summary .....   | 52 |
| Table 4. 23: Analysis of Variances (ANOVA) .....  | 52 |
| Table 4. 24: Coefficients for Information on Borrower’s Collateral or Guarantors .....                    | 53 |
| Table 4.25: Model Summary .....   | 54 |
| Table 4. 26: Analysis of Variances (ANOVA) .....  | 54 |

|  |    |
|--|----|
| Table 4. 27: Coefficients for Information on Borrower’s Conditions ..... | 55 |
| Table 4.28: Model Summary .....  | 56 |
| Table 4. 29: Analysis of Variances (ANOVA) .....                         | 56 |
| Table 4.30: Coefficients for Information on Borrower’s Character .....   | 57 |
| Table 4.31: Model Summary .....  | 58 |
| Table 4.32: Analysis of Variances (ANOVA) .....                          | 58 |
| Table 4.33: Coefficients for Multiple Regressions .....                  | 59 |

## LIST OF FIGURE

|                                       |    |
|---------------------------------------|----|
| Figure 2.1: Conceptual Framework..... | 20 |
|---------------------------------------|----|

## **ABBREVIATIONS AND ACRONYMS**

|              |   |   |
|--------------|---|---|
| <b>CAMEL</b> | : | Capital adequacy, Asset quality, Management quality, Earnings and Liquidity |
| <b>CBK</b>   | : | Central Bank of Kenya   |
| <b>CRB</b>   | : | Credit Reference Bureau   |
| <b>GDP</b>   | : | Gross Domestic Product  |
| <b>GoK</b>   | : | Government of Kenya   |
| <b>KCB</b>   | : | Kenya Commercial Bank   |
| <b>MFI</b> s | : | Microfinance Institutions   |
| <b>OLS</b>   | : | Ordinary Least Squares  |
| <b>SPSS</b>  | : | Statistical Package for Social Sciences                                     |
| <b>US</b>    | : | United States   |

# **CHAPTER ONE**

## **INTRODUCTION**

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

Credit risk management in an organization encompasses a number of processes both within and outside the firm all aimed at creating the best strategies to minimize the adverse effects of credit risk and improve on cash inflows to enhance liquidity. It is basic to start with the constitution of a credit control department formed from a team of finance professionals bestowed with the responsibility of managing a firm's credit portfolio. This defines clearly their responsibilities and defines a logical manner in which they are supposed to interact with the other interrelated departments within the organization such as the sales or marketing team as well as treasury or the cash management arm of finance department. This ensures that conflicts are minimized and the overall organization objective is maintained.

The functional responsibility of credit control department starts with formulation of a sound credit policy which stipulates acceptable credit standards and desired credit terms to be extended to the customers. Credit terms can be described in terms of factors like credit period, collection policy, allowable cash discounts and discounts period all which are incentives in credit management. All these credit parameters in the credit policy must be designed in such a manner that they conform to the overall organizational policy and goal of profit maximization (Fabozzi et al, 2002).

Before an organization extends any credit to its customers a policy or a list of rules must be established to prevent any potential credit risks. According to Pike and Neale (1999), credit management entails a design process starting all the way from a credit sale to the very end when the payment relating to that sale is fully collected. Many organizations have gotten into pitfalls of credit such as cash flow problems or constrained working capital because they have not established good systems to be able to collect debts in a pace consistent with the way sales are made. This has led to inevitable financing of accounts receivables and at times costly borrowing to be able to meet short term working capital requirements.

Organizations can avoid cash flow problems if they administer and manage credit with financial prudence by ensuring that all goods and services rendered are promptly paid for (Grover, 2002). Accounts receivables account for a big proportion of assets in

businesses averaging 15% to 20% of the total assets of a typical business. To control credit sales it is necessary to specify clear responsibilities for the credit department in its credit management functions. This function should be instilled with specific goals and objectives (Knox, 2004). This corroborates the fact that no matter the size of any business operation the focus should be on managing and collecting accounts receivables efficiently and effectively to maximize essential cash inflows.

Credit management is a complex process (Armstrong, 2000). It requires sophistication on the part of the lender and credibility in the borrower. However, inefficiencies in some markets – particularly information irregularities from both lender and borrower - limit the level to which they contribute to financial inclusion. In the absence of comprehensive information about a borrower, credit decisions are often less than optimal. As a result, the incidence of non-performing loans soars; interest rates increase and collateral requirements become more stringent, as lenders make efforts to mitigate the lack of transparency between them and their borrowers.

In extension, credit risk management is an important aspect of credit management. Credit risk is most simply defined as the potential that a borrower or counterparty will fail to meet its obligations in accordance with agreed terms. The goal of credit risk management is to maximize a financial institution's risk-adjusted rate of return by maintaining credit risk exposure within acceptable parameters. Financial Institutions need to manage the credit risk inherent in the entire portfolio as well as the risk in individual credits or transactions. They should also consider the relationships between credit risk and other risks. The effective management of credit risk is a critical component of a comprehensive approach to risk management and essential to the long-term success of any financial organization. Microfinance institutions therefore need to effectively manage their credit risks if they are to meet the financial obligations.

The Kenyan financial sector was in the 80's and 90's weighed down with a momentous nonperforming assets portfolio. This habitually led to the collapse of financial institutions. One of the promoters in this situation was serial defaulters, who borrowed from a range of institutions with no purpose of repaying the loans. Certainly, these defaulters thrived in the “information asymmetry” environment that prevailed due to lack of a borrower information mechanism. Information asymmetry

refers to a situation where business owners or managers know more about the scenario, for and risk facing, their business than do lenders. Information asymmetry describes the condition in which relevant information is not known to all parties involved in an undertaking (Ekumah and Essel, 2003).

Lending is a risky enterprise because repayment of loans can seldom be fully guaranteed. According to Brown et al., (2004), implicit contracts between lenders and borrowers, thus, banking relationships can motivate high effort and timely repayments. Fehr & Zehnder, (2005) also confirm that long-term relationships are a powerful disciplinary device. They posit that in credit markets dominated by short-term interactions, borrowers may only be motivated to repay if they know that, due to loan reporting, their current character is observable by other lenders. The work of Fehr & Zehnder, (2005) indicates that the impact of credit reporting on repayment character on credit market performance is highly dependent on the potential for relationship banking. Therefore, when bilateral relationships are not feasible, the credit market essentially collapses in the absence of acceptable borrower character.

As repayments are not third-party enforceable, many borrowers default and lenders cannot profitably offer credit contracts (Brown, Falk, & Fehr, 2004). The availability of information on past repayment character allows lenders to condition their offers on the borrowers' reputation. As borrowers with a good track record receive better credit offers, all borrowers have a strong incentive to sustain their reputation by repaying their debt (Orebiyi, 2002). Therefore, by repeatedly interacting with the same borrower, lenders establish long-term relationships that enable them to condition their credit terms on the past repayments of their borrower. As only a good reputation leads to attractive credit offers from the incumbent lender, borrowers have strong incentives to repay.

### **1.1.1 Concept of 5Cs of Credit**

There are various methods of assessing credit worthiness of borrowers including the 5C's, 5P's, financial analysis and previous experience methods among others. The 5C's, according to Peavler (2013), is an approach of assessing credit worthiness which is defined as follows: Capacity refers to borrower's ability to meet the loan payments of interest and principal. Capital is the money invested in the business and is an indicator of how much is at risk should the business fail. Collateral is a form of



security for the lender. Banks usually require collateral as a type of insurance in case the borrower cannot repay the loan. Conditions refer to the economic and political conditions of the country. Character is the obligation that a borrower feels to repay the loan. Since there is not an accurate way to judge character, the lender will decide subjectively whether or not the borrower is sufficiently trustworthy to repay the loan. Abrahams et al, (2008) argue that comprehensive credit assessment framework offers a comprehensive rating system that enables lenders to classify credit risk using the Five Cs of credit.

### **1.1.2 Concept of Microfinance**

The concept of microfinance arose out of the need to provide to the low-income earners who were left out by formal financial institutions. The practice of microfinance dates back to as early as 1700 and can be traced to Irish Loan Fund System which provided small loans to rural poor with no collateral. Over the years, the concept of microfinance spread to Latin America, then to Asia and later to Africa. Microfinance has its roots in the 1970s when organizations, such as Grameen Bank of Bangladesh were starting and shaping the modern industry of microfinance (Mwangi, 2011). In Kenya, microfinance movement gained momentum in the late 1980s as a result of exclusion of large proportion of the population from the formal financial institution mainly banks. Microfinance emerged with the aim of filling the gap left by banks in providing credit to individuals, micro, small and medium enterprises which were on the rise during this period (Ogindo, 2006). Among the pioneer microfinance institutions (MFIs) in Kenya are Equity Building Society (currently Equity Bank), Family Building Society (currently Family Bank), Faulu Kenya and KRep (Mwangi, 2011).

### **1.2 Statement of the Problem**

Lending is the main business of financial institutions and loans are naturally the major source of revenue for these institutions. Despite the huge income created from lending, available literature shows that huge shares of loans regularly go bad and therefore affect the financial performance of these institutions. Failure to manage credit risks can thus lead the collapse of such financial institutions. Certainly, credit risks can lead to the collapse of microfinance institutions if critical measures are not taken to minimize the problem. One such measure is the management of borrower

information to minimize credit risks. According Beck *et al.*, (2000), asymmetric information between borrowers and lenders results in inefficient allocation of credit and credit rationing. Furthermore, according to CBK (2010), information asymmetry between banks and borrowers in Kenya has for long constrained financial intermediation between the surplus and deficit sectors of the economy leading to high costs of credit that have hampered the expansion of businesses and deterred access to credit by a significant proportion of Kenyans (CBK, 2010). Managing borrower information would aid the building of information capital that would guide the pricing of loans by financial institutions. This would in turn not only enhance access to credit but also reduce the cost of doing business and catalyze growth of credit for investment and wealth creation, pushing Kenya faster towards Vision 2030 aspirations of being a middle-income country. Borrowers have often used the underlying challenge of information asymmetry to create multiple bad debts in financial institutions in Kenya (Kipyego & Wandera, 2013).

According to Pagano & Jappelli (2003), borrower information can have important effects on credit markets activity. Firstly, it improves the institutions' knowledge of applicants' characteristics and permits a more accurate prediction of their repayment probabilities. Secondly, it reduces the informational rents that institutions could otherwise extract from their customers. Thirdly, it can operate as a borrower discipline device. Finally, it eliminates borrowers' incentive to become over-indebted by drawing credit simultaneously from many banks without any of them realizing. A clear understanding therefore of the effect of borrower information on credit risk management is of great importance not only to microfinance institutions but also the larger financial industry players and policy makers.

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

#### **1.3.1 General Objective**

The main objective of the study was to establish the effect of borrowers' information on credit risk management in microfinance institutions in Nakuru Town.

#### **1.3.2 Specific Objectives**

The study specifically sought:

- i. To determine the effect of borrower's capacity information, on credit risk management in microfinance institutions in Nakuru Town

- ii. To find out the effect of borrower's capital information on credit risk management in microfinance institutions in Nakuru Town
- iii. To establish the effect of borrower's collateral, information on credit risk management in microfinance institutions in Nakuru Town.
- iv. To determine the effect of borrower's conditions information on credit risk management in microfinance institutions in Nakuru Town
- v. To establish the effect of borrower's character information on credit risk management in microfinance institutions in Nakuru Town.

#### **1.4 Hypotheses of the Study**

The study sought to prove or disprove the following hypothesis:

H<sub>01</sub>: Borrower's capacity Information does not significantly affect credit risk management in MFIs in Nakuru Town

H<sub>02</sub>: Borrower's capital information on does not significantly affect credit risk management in MFIs in Nakuru Town

H<sub>03</sub>: Borrower's collateral information, does not significantly affect credit risk management in MFIs in Nakuru Town

H<sub>04</sub>: Borrower's conditions information does not significantly affect credit risk management in MFIs in Nakuru Town

H<sub>05</sub>: Borrower's character information does not significantly affect credit risk management in MFIs in Nakuru Town.

#### **1.5 Justification of the Study**

The study will be important, as it will provide insights into the effect of borrower information on credit risk management in microfinance institutions in Nakuru Town. The performance of microfinance institutions is a necessary condition for institutional sustainability. Furthermore, microfinance have been instrumental in alleviating poverty all over the world since they increase the incoming earning capacity of the low income households; especially those that own micro-enterprises. Lastly, the study is important to the economic growth of the country, as it will give insights of the effects of borrower information on credit risk management.

#### **1.6 Scope of the Study**

The study mainly focused on registered microfinance institutions in Nakuru Town. Available data indicate that there are 18 microfinance institutions operating in Nakuru

Town. The study purposively targeted all the managers of the microfinance institutions and a further 10 senior managers in the finance department of each microfinance thereby giving a sample of 198 respondents in the study. The study will also seek to obtain secondary data from annual published results of the MFIs. The study will be undertaken with a proposed budget of Kenya shillings 70,000.

### **1.7 Limitations of the Study**

The study was limited by a number of factors. Firstly, the response rates and incorrect filling of questionnaires may come up due to the sensitivity of the information sought. This was addressed by assuring the respondents that all information was treated confidentially. Secondly, respondents were not willingly and truthfully answering some questions that they may deem personal. The researcher attempted to overcome this by attempting to personally administer most of the questionnaires.

## 1.8 Operational Definition of Terms

- Capacity** : Refers to borrower's ability to meet the loan payments of interest and principal as agreed between lender and borrower (Peavler, 2013)
- Capital** : Refers to the money invested in the business and is an indicator of how much is at risk should the business fail (Peavler, 2013)
- Character** : Refers to the obligation that a borrower feels to repay the loan and which lenders decide subjectively whether or not the borrower is sufficiently trustworthy to repay the loan (Peavler 2013).
- Collateral** : Refers to a form of security for the lender and which financial institutions usually require as a type of insurance in case the borrower cannot repay the loan (Abrahams *et al.*, 2008)
- Conditions** : Refers to the economic and political conditions of the country in which the loan terms are applicable (Abrahams *et al.*, 2008)
- Credit management** : Is the process of controlling and collecting payments from customers. This is the function within a bank or company to control credit policies that will improve revenues and reduce financial risks (Richard *et al.*, 2008)
- Credit Risk** : Is defined as the possibility of losses associated with diminution in the credit quality of borrowers or counterparties (Chijoriga, 1997)
- Credit Risk Management** : Encompasses identification, measurement, monitoring and control of the credit risk exposures (Basel, 2004)
- Micro-financing** : Refers to provision of financial services to low-income clients, including the self-employed. These services generally include savings and credit (Basel, 2004).

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

The chapter reviews literature on effects of borrower information on credit risk management in microfinance institutions in Kenya. The chapter also presents the theoretical framework, empirical review, conceptual framework, summary of existing literature and research gaps identified.

#### **2.2 Theoretical Framework**

The theory of asymmetric information indicates that it may be complex to distinguish between good and bad borrowers (Auronen, 2003), which may result into adverse selection and moral hazards problems. The theory expounds that in the market, the person that possesses more information on a particular item to be transacted is in a position to negotiate optimal terms for the transaction than the other party (Auronen, 2003). The party that knows less about the same specific item to be transacted is therefore in a position of making either right or wrong decision concerning the transaction.

##### **2.2.1 Adverse Selection Theory**

Pagano and Jappelli (1993) show that borrower information reduces adverse selection by improving banks information on credit applicants. In their mode of doing business, each institution has private information about local credit applicants, but has no information about foreign applicants. If financial institutions exchange information about their clients' credit worth, they can assess also the quality of foreign credit applicants and lend to them as carefully as they lend to local customers. By reducing information asymmetry between lenders and borrowers, credit registries allow loans to be extended to safe borrowers who had previously been priced out of the market, resulting in higher aggregate lending which may reduce the credit risks.

According to Boot *et al.*, (1991), very little empirical evidence exists as to whether or not credit markets are in fact characterized by asymmetric information. Unfortunately, existing models beg the question of the informational regime by defining a first best equilibrium loan contract that generates zero collateral posted by all borrowers. The literature also often abstracts from other important stylized facts of credit markets, most notably, the substantial variation in loan size across customers of broad similar

type. This is a consequence of the assumption of identical loan amounts across borrowers. Although acceptable, these features are unsatisfactory elements in a theory if the objective is to establish whether credit markets are in fact characterized by adverse selection. The study therefore intends to explore this theoretical gap in the microfinance industry in Kenya.

### **2.2.2 Theory of Credit Scoring**

The theory of credit scoring is a theory of unsecured consumer credit where: (i) borrowers have the legal option to default; (ii) defaulters are not exogenously excluded from future borrowing; (iii) there is free entry of lenders; and (iv) lenders cannot collude to punish defaulters. In our framework, limited credit or credit at higher interest rates following default arises from the lender's optimal response to limited information about the agent's type and earnings realizations. The lender learns from an individual's borrowing and repayment behavior about his type and encapsulates his reputation for not defaulting in a credit score (Karapetyan & Stacescu, 2010).

Given the inability of borrowers to commit to pay back, lenders condition the terms of credit (including whether they lend at all) on an individual's credit history encapsulated by a credit score. Individuals with higher scores are viewed by lenders as less likely to default and receive credit on more attractive terms. A default may signal something about the borrower's future ability to repay and leads to a drop in the individual's credit score. Consequently, post-default access to credit is available on worse terms and may not be available at all. Even absent default, greater indebtedness may signal something about the borrower's future ability to repay which subsequently leads to a lower credit score and worse terms of credit (Auronen, 2003).

According to Chatterjee *et al.*, (2007), it is well known that lenders use credit scores to regulate the extension of consumer credit. People with high scores are offered credit on more favorable terms. People who default on their loans experience a decline in their scores and, therefore, lose access to credit on favorable terms. People who run up debt also experience a decline in their credit scores and have to pay higher interest rates on new loans. While credit scores play an important role in the allocation of consumer credit, credit scoring has not been adequately integrated into the theoretical literature on consumption smoothing and asset pricing. Given

commitment frictions, it's important for a lender to assess the probability that a borrower will fail to pay back – that is, assess the risk of default.

### **2.2.3 Moral Hazard Theory**

The moral hazard problem implies that a borrower has the incentive to default unless there are consequences for his future applications for credit. This result from the difficulty lenders have in assessing the level of wealth borrowers will have accumulated by the date on which the debt must be repaid, and not at the moment of application. If lenders cannot assess the borrower's wealth, the latter will be tempted to default on the borrowing. Forestalling this, lenders will increase rates, leading eventually to the breakdown of the market (Alary & Goller, 2001).

According to Brown and Zehnder (2007), the standard model of moral hazard in which collateral can be requested describes the following situation: a lender has funds available to lend to a borrower, who needs a loan for an investment project. The borrower has some capital, which cannot be used directly for investment but can be pledged as collateral. If the borrower receives a loan, she starts an investment project, which requires effort. Effort, which is costly for the borrower, refers to all actions by the borrower that make the investment project more likely to succeed. It is neither contractible nor observable by the lender. Thus, a problem of moral hazard arises. The lender desires a high effort from the borrower, since it increases the likelihood of success and in turn repayment of the loan. By requesting collateral, the lender incentivizes the borrower to provide a large effort, because she loses her property if the project fails.

### **2.2.4 Transaction Cost Theory**

Transaction cost theory concentrates on the relative efficiency of different exchange processes. If for the firm-as-a-production-function view the internalization of one or more stages of production might generate technological economies for the firm which could lead also to transactional economies. Following the transaction cost theory (Coase, 1937), firms evaluate the relative costs of alternative governance structures (spot market transactions, short term contracts, long-term contracts, vertical integration) for managing transactions. Transaction costs could be defined as the costs of acquiring and handling the information about the quality of inputs, the relevant prices, the supplier's reputation, and so on. Monitoring of costs in this context



therefore is equally costly: costs have to be borne in order to negotiate and write the terms of the arrangements, to monitor the performance of the contracting party, to enforce the contracts.

Transactions cost broadly refers to the cost involved in exchange. These are costs that prevent market from operating efficiently or factors that prevent markets from forming altogether. Transactions cost occur both on the lenders' side as well as on the borrowers' side. On the lender's side, transactions cost involve costs of information gathering, loan administration, enforcement, etc. Where loanable funds are in limited supply the use of non-price factors such as collateral, quotas, compensating deposit balance, bureaucratic procedures, long delays in disbursement are employed to eliminate excessive credit demand. These factors need to be considered in determining the effective transactions cost of procuring credit (Djankov *et al.*, 2007).

Borrowers also incur transactions cost. Borrower transaction costs mainly involve various charges imposed by lenders beyond interest payments such as application fees, services fees and photographs. The most important transactions cost is borrower's travel time and time spent in obtaining the loan. Lost time from work is an important part of the transactions cost for most borrowers. The addition of costs such as the cost of transportation and inconveniences indicates that the efficient opportunity sets of borrowers would vary not only with the size of their portfolios, but also with the physical location and the opportunity cost of their time (Hertzberg *et al.*, 2011).

### **2.3 Empirical Review**

This section presents literature review drawn from past studies related to the effects of borrower information on credit risk management of MFIs. The section is discussed based on the objectives of the study. The review shows how effect of information on borrower's capacity, information on borrower's capital, information on borrower's collateral, or guarantees, information on borrower's conditions and information on borrower's character on credit risk management in microfinance institutions. According to Micro-finance Institutions use these 5Cs model of credit to evaluate a customer as a potential borrower (Abedi, 2000). The 5Cs help MFIs to increase loan performance, as they get to know their customers better. Risk is intrinsic to every financial transaction.

According to Forcella (2015), the objective of risk management is not to eliminate the risk, but rather to understand the risks of the institution's activities; reduce risk exposure to an acceptable level in line with the institution's risk appetite; and, employ the right procedures to manage the residual risk. Credit risk management is important because, Survival of most MFIs depends entirely on successful lending program that revolves on funds and loan repayments made to them by the clients (Sindani, 2012).

### **2.3.1 Borrower's Capacity and Credit Risk Management**

Brown and Moles (2014) stresses the importance of obtaining borrows information on capacity to repay the loan. Ken et al noted that is necessary for a microfinance to analyze the credit and determine its quality in order to determine the creditworthiness of the counterparty. They emphasize the necessity for such organization to analyze his capacity and willingness to pay according the agreement. Capacity to repay is the most critical of the five factors; it is the primary source of repayment - cash. The prospective lender will want to know exactly how you intend to repay the loan. The lender will consider the cash flow from the business, the timing of the repayment, and the probability of successful repayment of the loan. Payment history on existing credit relationships - personal or commercial- is considered an indicator of future payment performance. Potential lenders also will want to know about other possible sources of repayment.

Assess Key Risk Factors to measure and limit risk exposures. Key Risk Factors (KRFs) are specific factors relevant for the repayment capacity of a borrower under the loan agreement. Often KRFs relate to overarching risks that are typical (and often unavoidable) due to the location or nature of the target markets. FIs can develop a set of KRFs, grouped according to criteria such as: factors directly related to the borrower (age or past performance), factors related to the borrower's business (management experience or competition), or factors related to special situations (location or exposure to a certain industry).

Kanyunyuzi (2013) conducted a study capacity to repay is the most critical of the five factors. It is the primary source of repayment – cash. The prospective lender will want to know exactly how a borrower intends to repay the loan. The lender will consider the cash flow from the business, the timing of the repayment, and the probability of successful repayment of the loan. Payment history on existing credit relationships –

personal or commercial- is considered an indicator of future payment performance. Potential lenders also will want to know about other possible sources of repayment.

According to Moti, Masinde, Mugenda and Sindani, (2012), capacity of the client to repay has a great influence on the loan performance. Capacity to repay is critical in client appraisal and microfinance institutions should consider the capability of the customers they are awarding loans to repay. Microfinance institutions should evaluate the collateral used as security when appraising the clients, this is because in case of any default the MFI's will recover the collateral in order to service the loan. The size of the business hence capital of the client is an important factor that should be scrutinized when appraising clients.

According to a study by Hartmut (1997) cited by Aliija and Muhangi (2017), assessing effective credit demand based on repayment potential therefore requires certain skills in an institution. The success or failure of a loan depends to a large degree on an accurate appraisal of the customers' repayment capacity. It is commonly said that a loan can be bad at the time of appraisal meaning that once a mistake is committed at the time of loan appraisal it can have an effect on the final repayment of the loan.

### **2.3.2 Borrower's Capital and Credit Risk Management**

According to Wester (1993) capital is measured by the general financial position of the borrower as indicated by a financial ratio analysis, with special emphasis on tangible net worth of the borrower's business. Thus, capital is the money a borrower has personally invested in the business and is an indication of how much the borrower has at risk should the business fail. Lenders also consider any capital the borrower puts toward a potential investment. A large contribution by the borrower decreases the chance of default. For example, borrowers who have a down payment for a home typically find it easier to get a mortgage. Even special mortgages designed to make homeownership accessible to more people, such as loans guaranteed by the Federal Housing Authority (FHA) and the Veterans Administration (VA), require borrowers to put between 2 and 3.5% down on their homes. Down payments indicate the borrower's level of seriousness, which can make lenders more comfortable in extending credit.

Kiplimo and Kalio (2012) observed that in order to determine if the borrower has the ability to repay the debt, microfinance institutions consider the cash flow from the business, the timing of the repayment, and the successful repayment of the loan. Cash flow helps the MFIs. The analysis of cash flow can be very technical. It may include more than simply comparing income and expenses. MFIs determine cash flow by examining existing cash flow statements and reasonable projections for the future.

### **2.3.3 Borrower's Collateral, or Guarantees and Credit Risk Management**

According to Modoc (1999) cited in Kiplimo and Kalio (2012), Collateral is any asset that customers have to pledge against debt. Collateral represents assets that the company pledges as alternative repayment source of loan. Most collateral is in form of hard assets such as real estate and office or manufacturing equipment. Alternatively, accounts receivable and inventory can be pledged as collateral. MFIs prefer collateral that has duration closely matched to the short term loan.

Ross, Westerfield and Jordan (2008) in their work *Essentials of Corporate Finance* from a USA context pointed out that that the time period for which credit is advanced is affected by credit risk, collateral value, competition in the market and size of client's account. This means that borrower's collateral value was an important aspect to consider during borrower's appraisal.

Inkumbi (2009) notes that capital and collateral are the major obstacles for entrepreneurs trying to access capital. This is especially true for young entrepreneurs or entrepreneurs with no money to invest as equity; or with no assets, they can offer as security for a loan. Any effort to improve access to finance has to address the challenges related to access to capital and collateral. One way to guarantee the recovery of loaned money is to take some sort of collateral on a loan. From Inkumbi's study it is clear that collateral is an attribute that cannot be ignored in appraising borrowers.

Abedi (2009) in a research paper titled "Highway to Success" found that microfinance institutions could use the borrower's Collateral, or Guarantees to evaluate a customer as a potential borrower in order to increase as loan performance. Similarly, Kamau (2011) while examining the Determinants of audit expectation gap: Evidence from limited companies in Nakuru Town highlighted that collateral was part of a credit-

scoring model that has successfully been used to assign credit applicants to good or bad credit risk classes.

Mutua (2016) conducted a study on the impact of credit risk management on financial performance of savings and credit co-operative societies in Kitui County. In the study Mutua argued that risk ratings should be developed for various credit types based on their unique features and risk characteristics that is, credit scores, debt-to-income ratios, collateral types, and loan-to-value ratios for consumer loans, and debt service coverage, financial strength of management/major tenant, and loan-to-value ratios for commercial real estate credits. Collateral (quality and control), the company's management, and the strength provided by any guarantors should also be considered.

#### **2.3.4 Borrower's Conditions and Credit Risk Management**

Sangwayire (2016) conducted a study titled "Credit risk management mechanisms and financial performance of micro finance banks". This was a case study of the Urwego Opportunity Bank in Rwanda. The study observed that borrowers' conditions were critical in credit risk management in the micro finance banks. According to Sangwayire, conditions describe the intended purpose of the loan. Will the money be used for working capital, additional equipment or inventory? An answer to any of these questions demonstrates how borrowers' information on conditions is important in managing credit risk.

According to Mirach (2010), the current economic and business climate as well as any unique circumstances affecting either party to the credit transaction. For example, if the firm has excess inventory of the items the applicant wishes to purchase on credit, the firm may be willing to sell on more favorable terms or to less creditworthy applicants. Analysis of the general economic and business conditions, as well as special circumstances that may affect the applicant or firm is performed to assess conditions. Mirach argues that adequately managing credit in financial institutions (FIs) is critical for the survival and growth of the FIs. In the case of banks, the issue of credit management is of even greater concern because of the higher levels of perceived risks resulting from some of the characteristics of clients, business conditions and economic environment in which they find themselves.

Pandey (2008) in the works titled “Financial management in Delhi India” concluded that a firm’s credit policy is greatly influenced by economic conditions. As economic conditions change, the credit policy of the firm may also change. Therefore, MFIs must develop a credit policy to govern their credit management operations (Pandey, 2008) and since MFIs generate their revenue from credit extended to low income individuals in the form of interest charged on the funds granted (Kariuki, 2010) the loan repayments may be uncertain.

### **2.3.5 Borrower’s Character and Credit Risk Management**

Character is the general impression you make on the prospective lender or investor. The lender will form a subjective opinion as to whether or not the borrower is sufficiently trustworthy to repay the loan or generate a return on funds invested in their company. Borrowers’ educational background and experience in business and in their industry will be considered. The quality of your references and the background and experience levels of your employees will also be reviewed. The lender need information on aspects such as borrowers’ loan history, whether the borrower has used past loans for intended purpose, the borrower’ health history, employment status of close family relations.

Character basically, is a tool that provides weighting values for various characteristics of a loan applicant and the total weighted score of the applicant is used to estimate his credit worthiness (Myers, 2005). The factors that influence a client can be categorized into personal, cultural, social and economic factors (Ouma, 2008). The psychological factor is based on a man’s inner worth rather than on his tangible evidences of accomplishment. MFIs may consider this factor by observing and learning about the individual. In most cases, it is not considered on first application of credit by an applicant but from the second time.

Kiplimo and Kalio (2012) conducted a study to investigate the effect of Credit Risk Management practices on loan performance in MFIs in Baringo County. The study employed a descriptive research design and was based on a survey of MFIs in Baringo County. The target population in this study was managers and credit officers in MFIs in Baringo County. The study established that under social factors affecting loan performance, lifestyle is the way a person lives. This includes patterns of social relations such as membership groups, consumption and entertainment. A lifestyle

typically also reflects an individual's attitudes, values or worldview. Reference groups in most cases have indirect influence on a person's credibility. Through group guarantors, MFIs try to identify the reference groups of their target as they influence a client's credibility. Personal factors include age, life cycle stage, occupation, income or economic situation, personality and self concept. Under life cycle stage for example older families with mature children are not likely to default since it's easier to attach collateral on their assets since they are settled unlike the unsettled young couples

An effect on incentives exists even when there is no hold-up problem, if banks communicate to each other data about past defaults, rather than information about borrowers' quality. Padilla and Pagano (2000) in their study on sharing default information as a borrower discipline device showed that this creates a disciplinary effect. Their study targeted macro-level data where the authors took a survey of information sharing institutions in 40 countries. Their study used OLS regression analysis with bank lending as a percent of GDP, indicator of credit risk, presence of a public credit registry and threshold above which data on loans must be reported to a public credit registry. They established that when banks share default information, default becomes a signal of bad quality for outside banks and carries the penalty of higher interest rates. To avoid this penalty, borrowers exert more effort, leading to lower default and interest rates and to more lending. In contrast with the result of Padilla and Pagano (1997), disclosing information about borrowers' quality has no effect on default or interest rates in this model. Ex-ante competition is assumed to eliminate the informational rents of banks, so that their customers' overall interest burden cannot be reduced further. As a result, when information about their quality is shared, borrowers have no reason to change their effort level, and equilibrium default and interest rates remain unchanged.

### **2.3.6 Credit Risk Management in Microfinance Institutions**

According to Chijoriga (1997), credit risk is defined as the potential that a bank borrower or counterparty will fail to meet its obligations in accordance with agreed terms. It is the most expensive risk in financial institutions and its effect is more significant as compared to other risk as it directly threatens the solvency of financial institutions. The magnitude and level of loss caused by the credit risk as compared to

other kind of risks is severe to cause high level of loan losses and even bank failure. While financial institutions have faced difficulties over the years for a multitude of reasons, the major cause of serious banking problems continues to be directly related to lax credit standards for borrowers and counterparties, poor portfolio risk management, or a lack of attention to changes in economic or other circumstances that can lead to a deterioration in the credit standing of a MFI's counterparties (Basel, 1999).

Loans are the largest source of credit risk to MFIs. However, other sources of credit risk exist throughout the activities of these institutions, including in the banking book and in the trading book, and both on and off the balance sheet. MFIs are increasingly facing credit risk (or counterparty risk) in various financial instruments other than loans, including acceptances, interbank transactions, trade financing, foreign exchange transactions, financial futures, swaps, bonds, equities, options, and in the extension of commitments and guarantees, and the settlement of transactions. The goal of credit risk management is to maximize risk adjusted rate of return by maintaining credit risk exposure within acceptable parameters. MFIs need to manage the credit risk inherent to the entire portfolio as well as the risk in individual credits as transactions (Sinkey, 1992).

Credit risk management should be at the centre of MFIs operations in order to maintain financial sustainability and reaching more clients. Despite these facts, over the years there has been increased number of significant MFI problems in both, matured as well as emerging economies (Basel, 2004). These problems, mostly failures and financial distress have afflicted numerous MFIs, many of which have been closed down by the regulatory authorities (Brownbridge and Harvey, 1998). Among other factors, weakness in credit risk management has all along been cited as the main cause for MFIs problems (Richard *et al.*, 2008). Since exposure to credit risk continues to be the leading source of problems in MFIs world-wide, MFIs and their supervisors should be able to draw useful lessons from past experiences. MFIs should now have a keen awareness of the need to identify, measure, monitor and control credit risk as well as to determine that they hold adequate capital against these risks and that they are adequately compensated for risks incurred (Basel, 1999). Operating and financial ratios have long been used as tools for determining the performance of a



firm. These procedures, though varying from country-to-country, are designed to generate financial soundness ratings and are commonly referred to as the CAMEL rating system (Gasbarro *et al.*, 2002). In Kenya, the Central Bank also applies the CAMEL rating system to assess the soundness of financial institutions.

## 2.4 Conceptual Framework

The framework conceptualizes that borrower's information (independent variables), that is, borrower's capital, borrower's collateral or guarantees, borrower's conditions, borrower's capacity and borrower's character has an effect on credit risk management in microfinance institutions in Kenya. The argument in this study is that lenders need such information to evade risky business, since this is likely to affect their profitability.

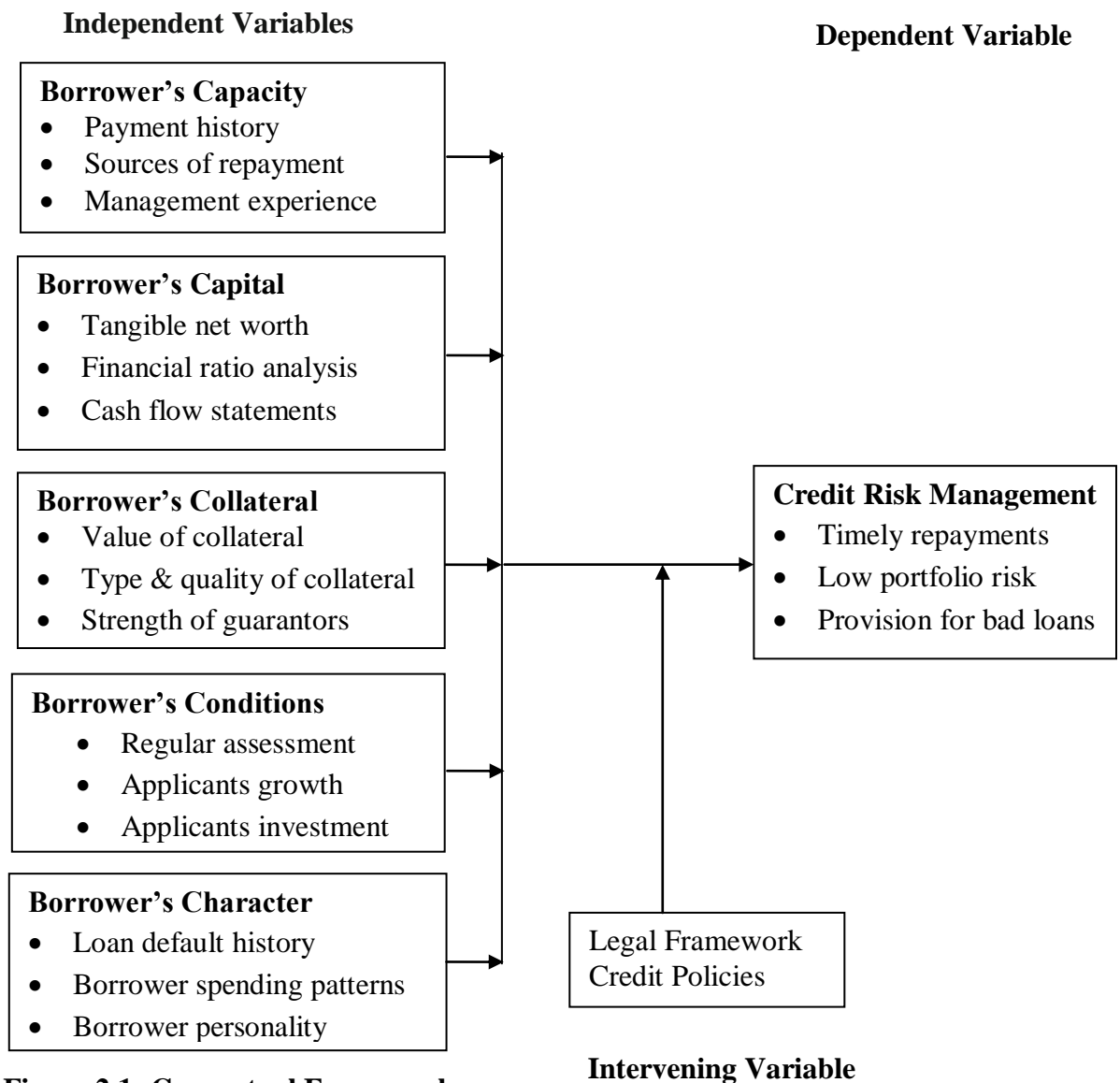


Figure 2.1: Conceptual Framework

## **2.5 Research Gaps**

Even though, most study demonstrate the importance 5Cs in the management of credit risk, the focus is either in other financial institutions other than microfinance institutions if not the focus was in developed countries. Moti, Masinde, Mugenda and Sindani, (2012), capacity of the client to repay has a great influence on the loan performance. However, the researcher did not link capacity to credit risk management. Mutua (2016) conducted a study on the impact of credit risk management on financial performance of savings and credit co-operative societies in Kitui County Mutua's though acknowledging the importance of the 5Cs, the focus was on financial performance. This was the same case with Sangwayire (2016), who conducted a study titled "Credit risk management mechanisms and financial performance in microfinance banks in Rwanda. Interesting the study by Kiplimo and Kalio (2012) which investigated the effect of Credit Risk Management practices on loan performance did not directly link the individual 5Cs to credit risk management but instead linked the process of credit risk management to financial performance. This shows that there is indeed a gap on the effect of borrower's information on credit risk management in financial. This study sought to fill this gap.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

The chapter focuses on the methods that were used to collect data and analyze it. It majorly addresses the research design, the population to be studied, the sample selection procedures and sampling techniques, data collection, methods of verifying reliability and validity of data and methods, and data processing and analysis.

#### **3.2 Research design**

A research design is a blue print for fulfilling the objectives of the study. Although there are numerous research designs; the study employed a descriptive research design. This is because the design is well structured with clearly stated hypotheses and investigative questions. The focus of this study was to establish the effect of borrower information on credit risk management in MFIs in Kenya. Descriptive research design was appropriate as it enabled the researcher to generalize the findings to a large population. The study utilized quantitative approaches in the collection of data. According to Kothari (2009), the approach enables data to be systematically collected and analyzed in order to provide a descriptive account of the variables under study.

#### **3.3 Target Population**

The study focused on managers and finance related employees of all the MFIs in Nakuru Town. The financial management process of the MFIs involves a cross section of individuals and most importantly the departmental heads of the MFI since they play a major role in the decision making and ultimately the credit risk management of the MFI. For the purpose of the study, the population comprised all the 18 managers and 10 finance-related employees in each of the 18 MFIs thereby making the population of the study to be 198 employees of MFIs in Nakuru Town.

#### **3.4 Sample Size and Sampling Technique**

From the target population of 198 employees, a sample of respondents which is a true representative of the population will be tabulated. The sample size was selected based on the time, budget allocation, population distribution among other factors.

Further simple random sampling was used to select the respondents in each of the MFIs.

### 3.4.1 Sample Size

Nassiuma (2000) provided a simplified formula to calculate sample sizes as:

$$n = \frac{NC^2}{C^2 + (N - 1)e^2}$$

Where  $n$  – sample size,

$N$  – sampling population and,

$e$  – level of significance

$C$  – Coefficient of Variation

Given a population of 198 and significance level of 5%, then the sample size can be calculated as:  $n = \frac{198 \times 0.5^2}{0.5^2 + (198 - 1)0.05^2} = 66.7$ . The sampling frame of the study constituted 67 employees randomly selected from the 18 MFIs in Nakuru Town. The tabulated sample size was allocated proportionately amongst the employees as shown in Table 3.1.

**Table 3.1: Employees within the MFIs in Nakuru Town**

| <b>Job Specification</b>  | <b>Target Population</b> | <b>Sample</b> |
|---------------------------|--------------------------|---------------|
| Managers                  | 18                       | 6             |
| Finance Related Employees | 180                      | 61            |
| <b>Total</b>              | <b>198</b>               | <b>67</b>     |

### 3.4.2 Sampling Technique

Simple random sampling technique was used in collecting data from the respondents. Simple random sampling is most suitable because there would be equal chance of selecting each unit from the population being studied when creating the sample. This technique ensured that the sample is representative, reliable, flexible and efficient.

### 3.5 Data Collection Instruments

The study used questionnaires as the main tools for collecting data. According to Kothari (2006), a questionnaire is the best tool for the researcher who wishes to acquire the original data for describing a population. Questionnaires enabled the researcher to reach a large sample within a short time. According to Bachman (2000),

a questionnaire has the advantage that, it can be used to collect information from large sample and diverse regions. Questionnaires also save time and uphold confidentiality and more so, since they are presented in paper form, there is no opportunity for the interviewer bias.

### **3.6 Data Collection Procedures**

Data was collected primarily using closed-ended questionnaires. The researcher attempted to personally administer the questionnaires to ensure correct information is received from the respondents. For convenience and better analysis, a five point Likert Scale was used for the closed- ended questions. A self-administered questionnaire is constructed based on the above-mentioned instruments. The first section of the questionnaire contains questions relating to employee biographical data, which included the age, gender, and work experience. The second part contained propositions on each of the research objectives based on 5 point Likert scale. The last section, contained propositions on a Likert scale on measurement of credit risk management. The study deliberately targeted managers and finance related employees because they provide core leadership and decision making in finance related matters in the MFIs.

### **3.7 Piloting**

The data collection instruments were pretested in order to ensure their reliability and validity. According to Cooper and Schindler (2003), research instrument should pilot tested to detect weaknesses or errors in the instrument. The pilot test should be conducted with the subjects from the target population and simulate the procedures and protocols that have been designated for data collection. The questionnaire was piloted in Baringo County amongst selected MFIs to evaluate its validity and reliability of the instruments. Piloting will be done on 10 respondents who will not form part of the sample.

#### **3.7.1 Validity of Instruments**

According to De Vos (1998), a valid instrument measures the concept in question accurately. To ensure validity, the researcher will use accurate measuring instruments, standardize data collection procedures by guiding the respondents appropriately and will carry out piloting to determine usefulness of instruments, clarity in terminology, focus of questions, relevance and applicability, time required and methods for

analysis. The findings of the pilot study and the respondents' comments will be used to enhance the quality of the questionnaires so that they adequately address the constructs of the study.

### 3.7.2 Reliability of Instruments

A questionnaire with a high reliability would receive similar answers if it is done again or by other researchers (Bryman and Bell, 2007). Utilizing data from the pilot test, the reliability will be determined through the Cronbach alpha coefficient analysis. The Cronbach alpha reliability recommends a reliability coefficient of  $\alpha = 0.70$  and above. Cronbach alpha provides a good measure of reliability because holding other factors constant the more similar the test content and conditions of administration are, the greater the internal consistency reliability. The reliability results are shown in Table 3.2.

**Table 3.2: Reliability Test Statistics**

| <b>Study Variables</b> | <b>Number of Test</b> | <b>Cronbach Alpha Values</b> |
|------------------------|-----------------------|------------------------------|
| Borrower Capacity      | 6                     | 0.765                        |
| Borrower Capital       | 6                     | 0.84                         |
| Borrower Collateral    | 6                     | 0.783                        |
| Borrower conditions    | 8                     | 0.768                        |
| Borrower Character     | 6                     | 0.812                        |
| Credit Risk Management | 6                     | 0.791                        |

The reliability test shown in Table 3.2 produced Cronbach alpha ( $\alpha$ ) values of greater than 0.70, making the questionnaires largely reliable as recommended by Fraenkel & Wallen (2000).

### 3.8 Data Analysis and Presentation

According to Kathuri and Pals (1993), data processing and analysis as categorizing, manipulating and summarizing data in order to obtain answers to research questions. The data collected from the questionnaires was analyzed descriptively and statistically with Statistical Package for Social Sciences (SPSS) version 21.0. The study used descriptive statistics specifically employing measures of central tendency and dispersion to analyze data and the results will be presented in tables. For the purpose

of analyzing the relationships of each of the independent variable on the dependent variable, the study employed regression analysis to test the hypothesis of the study.

A regression analysis was carried out to assess the effect, significance and direction of each of the component on credit risk management using the following regression function:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \mu$$

Where:  $Y$  is Credit Risk Management

$\beta_5$  are the regression coefficients

$X_1$  is Information on Borrower's Capacity

$X_2$  is Information on Borrower's Capital

$X_3$  is Information on Borrower's Collateral or Guarantees

$X_4$  is Information on Borrower's Conditions

$X_5$  is Information on Borrower's Character

$\mu$  is the error term (disturbance term)

## **CHAPTER FOUR**

### **RESULTS AND DISCUSSIONS**

#### **4.1 Introduction**

The chapter provides an analysis of the collected data, interpretation and discussion of the findings. Following the processing and analyzing of the collected data, the findings are presented and discussed in this chapter and are in line with the objectives of the study. The responses on all the variables are on a 5-point scale while the statements in the view of the same are on a Likert scale. In the 5-point scale 1, 2, 3, 4 and 5 represent strongly disagree, disagree, neutral, agree, and strongly agree respectively. The chapter also provides the regression analysis carried out. Finally, the chapter provides a model summary and inferences drawn from the model.

#### **4.2 Response Rate**

The researcher issued 67 questionnaires to the respondents across all the targeted microfinance institutions in Nakuru Town, Kenya. In each MFI, the researcher sought and worked with contact persons to enable easier issuance and clarification on the issues that were unclear. Out of 67 questionnaires that were issued to the sampled respondents, 59 of them were filled and returned. Of the returned questionnaires, 3 were incorrectly filled and thus were not used in the final analysis. Therefore, 56 questionnaires were correctly filled and hence were used for analysis representing a response rate of 83.58%. According to Curtin (2000), getting a high response rate (>80%) from a small, random sample is considered preferable to a low response rate from a large sample. They noted that getting a higher response rate is preferable because the missing data is not random and thus is an important element in proving the statistical significance of the responses.

#### **4.3 Respondents' Profile**

The profile of respondents identifies the main information about the employees who participated in the research process depending on the relevance of the information sought.

The researcher sought to find out the distribution of the respondents according to their gender, age bracket, education level and working experience. The aim was to deduce any trend from the respondent's profile that was directly linked to the variables of the study.



### 4.3.1 Gender Distribution of the Respondents

The study sought to establish the gender of the respondents with an aim of establishing whether there was a link between gender and the variables under study. Table 4.1 shows the distribution of the respondents according to their gender.

**Table 4.1: Distribution of Respondents by Gender**

|              | Frequency | Percent      |
|--------------|-----------|--------------|
| Male         | 33        | 58.9         |
| Female       | 23        | 41.1         |
| <b>Total</b> | <b>56</b> | <b>100.0</b> |

According to the findings in Table 4.1, majority of employees are male (58.9%) while female were 41.1%. The researcher attributed trend to the existing gender gap in employment in most sectors in Kenya today.

### 4.3.2 Distribution of Respondents by Age Group

The study further wanted to establish the distribution of ages of the employees since previous studies have linked age to various performance measures. Table 4.2 shows the distribution of the respondents according to their ages.

**Table 4.2: Distribution of Respondents by Age**

|              | Frequency | Percentage   |
|--------------|-----------|--------------|
| 21-25yrs     | 5         | 8.9          |
| 26-30yrs     | 20        | 35.7         |
| 31-35yrs     | 16        | 28.6         |
| 36-40yrs     | 8         | 14.3         |
| 41-45yrs     | 7         | 12.5         |
| <b>Total</b> | <b>56</b> | <b>100.0</b> |

The findings in Table 4.2 indicate that a majority of employees in MFIs in Nakuru Town were of the age group 26 – 30 years (35.7%) while the least age group is below 21- 25 years (8.9%). The researcher attributed this trend to intense competition and increased use of technology, which would require the employment of a younger

generation who are easily adaptable to the fast changing business environment. Further, the study attributed this trend to the nature of the current generation of employees who tend to move rapidly between various competing job opportunities.

#### **4.3.3 Distribution of Respondents by Attained Educational Level**

The study further sought to establish the educational levels of the respondents in order to ascertain if it influenced the variables under study. Table 4.3 shows the distribution of the respondents according to their attained educational levels.

**Table 4.3: Distribution of Respondents by Educational Level**

| <b>Educational Level</b> | <b>Frequency</b> | <b>Percent</b> |
|--------------------------|------------------|----------------|
| High school              | 4                | 7.1            |
| Certificate              | 12               | 21.4           |
| Diploma                  | 20               | 35.7           |
| Degree                   | 17               | 30.4           |
| Masters                  | 3                | 5.4            |
| <b>Total</b>             | <b>56</b>        | <b>100.0</b>   |

From Table 4.3, the study established that most of the respondents (35.7%) had a diploma level qualification while the least (5.4%) had a master level qualification. However, over 71% of the respondents had at least a diploma level qualification and above implying there is a fairly higher entry qualification levels in the microfinance sector in Kenya. Further, the study attributed the presence of lower levels of qualifications in the MFI sector to the fact that MFIs in Kenya often transition from small lending institution, which have minimum supervision on qualification levels and then seek MFI registration from relevant authorities.

#### **4.3.4 Working Experience of the Respondents**

The researcher further wanted to establish the working experience of the respondents. This was important since previous studies indicated positive relationship between experience of employees and employee performance, which in turn would often enhance credit risk management of the targeted MFIs. The findings of their working experience are illustrated in Table 4.4.

**Table 4. 4: Distribution of Respondents According to Working Experience**

|                  | <b>Frequency</b> | <b>Percent</b> |
|------------------|------------------|----------------|
| Less than 1 Year | 6                | 10.7           |
| 1-3 Years        | 13               | 23.2           |
| 3-5 Years        | 22               | 39.3           |
| 5 Years or more  | 15               | 26.8           |
| <b>Total</b>     | <b>56</b>        | <b>100.0</b>   |

According to the findings, majority of the respondents (39.3%) had worked for between 3- 5 years in their respective MFIs. Cumulatively, more than 66% had more than 3 years of experience while only 10.7% had less than 1 year of working experience. This trend was attributed to the fact that there has been intense competition in the microfinance sector, which has led to increased employment of the younger generation of employees. Further, the longer experience implied that most employees clearly know the workings of their MFIs and thus their responses would be representative, valid and important in understanding the effect of borrower information on credit risk management.

#### **4.4 Findings of the Study Variables**

The researcher analyzed the effect of five variables on credit risk management of MFIs in Nakuru Town, Kenya. The selected factors were borrower's capacity information, borrower's capital information, borrower's collateral, or guarantees information, borrower's conditions information and borrower's character information. The dependent variable for the study was credit risk management.

##### **4.4.1 Descriptive Statistical Results on Borrower's Capacity Information**

Several statements were used to determine the effect of borrower's capacity information, on credit risk management in MFIs in Nakuru Town, Kenya. The scale for analysis was 1 = strongly disagree and 5 = strongly agree. Means were computed, and the results are presented in Table 4.5.

**Table 4. 5: Effect of Borrower’s Capacity Information on Credit Risk Management**

|   | <b>N</b> | <b>Min</b> | <b>Max</b> | <b>Mean</b> | <b>Std. Dev.</b> |
|---|----------|------------|------------|-------------|------------------|
| Payment history on existing credit relationships is a pointer to credit risk - past performance         | 56       | 2          | 5          | 3.66        | .837             |
| Use of loan for personal has a higher loan repayment risk than commercial use                           | 56       | 1          | 5          | 3.75        | .899             |
| Sources of repayment are indicative of how risky it is to loan a given borrower                         | 56       | 1          | 5          | 3.21        | 1.074            |
| Younger (youthful) borrowers have a higher capacity of repaying their loans compared to older borrowers | 56       | 1          | 5          | 3.14        | 1.052            |
| Borrowers with a higher management experience have a lesser credit risk                                 | 56       | 1          | 5          | 3.50        | .991             |
| Valid N (listwise)  | 56       |            |            |             |                  |

The mean scores for the statements were as follows. The statement asserting that payment history on existing credit relationships was a pointer to credit risk - past performance, recorded a mean score of 3.66. The value was higher than the neutral score of 3.0. This shows that most respondents believed that payment history on existing credit relationships was important borrower’s information required in assessing credit risk.

The statement implying that use of loan for personal had a higher loan repayment risk than commercial use recorded a mean score of 3.7. The value was higher than the neutral score of 3.0, thus implying that most of the respondents believed that information on how a borrower used loans was necessary, as it was a pointer to credit risk.

The findings show that the statement implying that sources of repayment were indicative of how risky it is to loan a given borrower recorded a mean score of 3.21. The value was higher than the neutral score of 3.0. This mean score shows that most respondents believed that information in respect to the borrower's sources of repayment was critical in assessing the borrowers' capacity and the element of credit risk.

Tale 4.5 shows that the statement asserting that younger (youthful) borrowers have a higher capacity of repaying their loans compared to older borrowers recorded a mean score of 3.14. This mean score was slightly above the neutral mean score of 3.0. This implied that most of the felt that information on the borrowers' age was important in assessing the borrowers' capacity to repay the loan.

The statement implying that borrowers with a higher management experience had a lesser credit risk recorded a mean score of 3.50. This mean score was slightly above the neutral mean score of 3.0. This implied that most of the respondents were convinced that higher management experience had a lesser credit risk, thus such borrower's information was useful.

#### **4.4.2 Descriptive Statistical Results on Borrower's Capital Information**

Several statements were used to determine the effect of borrower's capital information, on credit risk management in MFIs in Nakuru Town, Kenya. The scale for analysis was 1 = strongly disagree and 5 = strongly agree. Means were computed, and the results are presented in Table 4.6.

**Table 4. 6: Descriptive Statistical Results on Borrower’s Capital Information**

|  | <b>N</b> | <b>Min</b> | <b>Max</b> | <b>Mean</b> | <b>Std. Dev.</b> |
|--|----------|------------|------------|-------------|------------------|
| The capital the borrower puts toward a potential investment is a guarantee of less risk            | 56       | 1          | 5          | 3.38        | 1.121            |
| Down payments in investments indicate the borrower's level of seriousness makes loaning less risky | 56       | 1          | 5          | 3.46        | 1.008            |
| Cash flow statements and reasonable projections for the future                                     | 56       | 2          | 5          | 3.93        | .684             |
| Loan approval depend to a large extent on the borrower’s financial ratio analysis                  | 56       | 2          | 5          | 3.91        | .640             |
| Tangible net worth of the borrower’s business is a guarantee that the loan will be repaid.         | 56       | 2          | 5          | 3.95        | .699             |
| Lending money after appraising the applicant’s capital enhances recoverability of loans            | 56       | 2          | 5          | 3.95        | .699             |
| Valid N (listwise)   | 56       |            |            |             |                  |

The statements in Table 4.6 recorded the following mean scores. The statement implying that the capital the borrower puts toward a potential investment is a guarantee of less risk recorded a mean score of 3.38. This mean score was slightly above the neutral mean score of 3.0. This implied that most of the employees believed that the capital the borrower puts toward a potential investment, is a guarantee of less risk. That is to say less capital put towards a potential investment meant higher credit risk.

The statement implying that down payments in investments indicated the borrower's level of seriousness and made loaning less risky recorded a mean score of 3.46. This mean score was slightly above the neutral mean score of 3.0. This implied that down payments in investments lessened credit risk. The findings show that the statement implying that cash flow statements and reasonable projections for the future recorded a mean score of 3.93. This mean score was above the neutral mean score of 3.0. This implied that borrower's information on cash flow statements and reasonable projections for the future lessened credit risk.

It was established that the statement asserting that loan approval depend to a large extent on the borrower's financial ratio analysis recorded a mean score of 3.91. This mean score was above the neutral mean score of 3.0. This implied that MFI considered borrower's information on financial ratios to be useful in the management of credit risk.

The findings show that the statement implying that tangible net worth of the borrower's business is a guarantee that the loan will be repaid recorded a mean score of 3.95. This mean score was above the neutral mean score of 3.0. The implication is that most staff considered tangible net worth of the borrower's business to be an important aspect in determining a borrower's credit worthiness.

Table 4.6 shows that the statement indicating that lending money after appraising the applicant's capital enhances recoverability of loans, recorded a mean score of 3.95. This mean score was higher than the neutral mean score of 3.0. This implied that most staff were of the view that appraising the applicant's capital before lending minimized credit risk, and thus this was an important of borrower's capital information.

#### **4.4.3 Descriptive Statistical Results on Borrower's Collateral**

Several statements were used to determine the effect of borrower's collateral, or guarantees information on credit risk management in MFIs in Nakuru Town, Kenya. The scale for analysis was 1 = strongly disagree and 5 = strongly agree. Means were computed, and the results are presented in Table 4.7.

**Table 4. 7: Descriptive Statistical Results on Borrower’s Collateral**

|   | <b>N</b> | <b>Min</b> | <b>Max</b> | <b>Mean</b> | <b>Std. Dev.</b> |
|---|----------|------------|------------|-------------|------------------|
| The higher the collateral value the lesser the credit risk  | 56       | 2          | 5          | 4.04        | .738             |
| Collateral types owned by applicants determine the level of credit risk                                   | 56       | 2          | 5          | 3.86        | .699             |
| The strength provided by any guarantors is associated with credit risk                                    | 56       | 2          | 5          | 3.91        | .668             |
| The quality of the applicant’s collateral determines the level of credit risk                             | 56       | 2          | 5          | 3.68        | .956             |
| Quality of collaterals results into unprofitable lending and inaccurate risk identification and reporting | 56       | 2          | 5          | 3.87        | .740             |
| Failure to verify collateral control is inaccurate risk identification                                    | 56       | 2          | 5          | 3.80        | .883             |
| Valid N (listwise)  | 56       |            |            |             |                  |

The findings in Table 4.7 show that the statement indicating the higher the collateral value, the lesser the credit risk, recorded a mean score of 4.04. This mean score was higher than the neutral mean score of 3.0. This implied that most MFI staff were convinced that information on borrower’s collateral value minimized credit risk.

The findings in show that the statement implying that, collateral types owned by applicants determine the level of credit risk recorded a mean score of 3.86. This mean score was higher than the neutral mean score of 3.0. This implied that most MFIs staff believed that information on borrower’s collateral types minimized credit risk. This was because some collateral types are not easily convertible to cash, while others quickly become obsolete.

It was established that the statement asserting that the strength provided by any guarantors is associated with credit risk recorded a mean sore of 3.91. This mean score was higher than the neutral mean score of 3.0. This implied that most of the



MFIs staff felt that information on borrower's guarantors was important in assessing the borrower's credit worthiness.

The findings in show that the statement implying that, the quality of the applicant's collateral determines the level of credit risk recorded a mean score of 3.68. This mean score was higher than the neutral mean score of 3.0. This implied that information on the quality of the borrower's collateral was considered critical in assessing the level of credit risk.

Table 4.7 shows that the statement implying that, the quality of collaterals results into unprofitable lending and inaccurate risk identification and reporting recorded a mean score of 3.87. This implied that most of the MFIs staff believed that lack of information on the quality of collaterals resulted into unprofitable lending and inaccurate risk identification and reporting. This means that this information formed a critical aspect of credit risk assessment.

It was established that the statement denoting that failure to verify collateral control is inaccurate risk identification recorded a mean score of 3.80. This implied that information collateral control by the borrower was considered important in ascertain whether lending to the borrower was risky or not.

#### **4.4.4 Descriptive Statistical Results on Borrower's Conditions Information**

Several statements were used to determine the effect of borrower's conditions information on credit risk management in MFIs in Nakuru Town, Kenya. The scale for analysis was 1 = strongly disagree and 5 = strongly agree. Means were computed, and the results are presented in Table 4.8.

**Table 4. 8: Descriptive Statistical Results on Borrower’s Conditions Information**

|   | <b>N</b> | <b>Min</b> | <b>Max</b> | <b>Mean</b> | <b>Std.<br/>Dev.</b> |
|---|----------|------------|------------|-------------|----------------------|
| We always verify whether distribution systems are efficient   | 56       | 2          | 5          | 3.93        | .657                 |
| We conduct regular assessment of borrowers operating conditions   | 56       | 2          | 5          | 3.89        | .731                 |
| Our firm checks the applicant’s growth in retail sales values   | 56       | 2          | 5          | 3.89        | .824                 |
| We are always keen to find out if the applicant has relevant business inputs such as raw materials                    | 56       | 1          | 5          | 3.75        | .995                 |
| Our firm appraises the applicant’s investment intentions prior to loan approval                                       | 56       | 2          | 5          | 3.77        | .853                 |
| Applicants’ employment intentions are priority areas during loan appraisal  | 56       | 1          | 5          | 3.59        | 1.075                |
| We are always up to date with information on the applicants’ Political and environmental factors                      | 56       | 1          | 5          | 3.68        | 1.011                |
| We are always equipped with information on borrowers’ financial conditions e.g bank statements, outstanding loans are | 56       | 1          | 5          | 3.68        | .993                 |
| Valid N (listwise)  | 56       |            |            |             |                      |

The findings in Table 4.8 show that the statements recorded the following mean scores. The statement implying that the MFIs employees always verify whether distribution systems are efficient recorded a mean score of 3.93. This mean score was higher than the neutral mean score at 3.0. This implied that assessment of the borrower’s business distribution systems was taken seriously by the MFI staff. This is because they believed that this was useful in assessing the borrower’s credit worthiness.

The findings show that the statement denoting that MFIs employees conduct regular assessment of borrowers' business operating conditions recorded a mean score of 3.89. This mean score was above the neutral mean score at 3.0. The interpretation here is that information on borrowers' business operating conditions was considered critical in the assessment of the lending risk associated with the borrower. The findings show that the statement denoting that MFIs checks the applicant's growth in retail sales values recorded a mean score of 3.89. This mean score was above the neutral mean score at 3.0. This implied that information on the applicant's business growth was considered to lessen credit risk, in that those with low or no business growth prospects were treated with caution.

It was also established that the statement implying that MFIs employees are always keen to find out if the applicant has relevant business inputs such as raw materials recorded a mean score of 3.75. This mean score was above the neutral mean score at 3.0. This implied that information on whether the applicant has relevant business inputs was considered useful in determining whether or not the applicant was able to repay the loan or not. The findings show that the statement denoting that firm appraises the applicant's investment intentions prior to loan approval recorded a mean score of 3.77. This mean score was above the neutral mean score at 3.0. This implied that most MFIs appraise applicant's investment intentions prior to loan approval. This is because information on the applicant's business intentions was considered necessary in assessing the applicant's credit worthiness.

The statement asserting that the applicants' employment intentions are priority areas during loan appraisal recorded a mean score of 3.59. This mean score was above the neutral mean score at 3.0. This implied that to most of the MFIs' applicants' employment intentions are priority areas during loan appraisal. This is because such information enabled the firm to determine how risky it was to approve a given loan. The findings show that the statement implying that the firm is always up to date with information on the applicants' political and environmental factors recorded a mean score of 3.68. This mean score was above the neutral mean score at 3.0. This implied that information on these factors was considered by most of the MFIs as being critical in appraising loan applicants. The finding show that the statement asserting that MFIs are always equipped with information on borrowers' financial conditions such as bank statements, outstanding loans are, recorded a mean score of 3.68. This mean score

was above the neutral mean score at 3.0. This implied that information on borrowers' financial conditions was considered important in the assessment of the applicant's credit worthiness.

#### 4.4.5 Descriptive Statistical Results on Borrower's Character Information

Several statements were used to determine the effect of borrower's character information on credit risk management. The scale for analysis was 1 = strongly disagree and 5 = strongly agree. Means were computed, and the results are presented in Table 4.9.

**Table 4.9: Descriptive Statistical Results on Borrower's Character Information**

|   | N  | Min | Max | Mean | Std. Dev. |
|---|----|-----|-----|------|-----------|
| Information on borrowers' loan history – loan default history   | 56 | 1   | 5   | 3.61 | .928      |
| Confirm that the borrower has used past loans for intended purpose                                    | 56 | 1   | 5   | 3.55 | .971      |
| Information on borrower's lifestyle   | 56 | 1   | 5   | 3.70 | .952      |
| Information on social relations such as membership groups, consumption and entertainment              | 56 | 1   | 5   | 3.64 | .999      |
| Information on borrower's personality and self-concept  | 56 | 1   | 5   | 3.68 | .993      |
| Information on borrower's spending behavior e.g. drunkenness, wasteful spending, irresponsibility etc | 56 | 1   | 5   | 3.75 | .995      |
| Valid N (listwise)  | 56 |     |     |      |           |

The findings in Table 4.9 show that the statements recorded the following mean scores. Information on borrowers' loan history – loan default history recorded a mean score of 3.93. This mean score was higher than the neutral mean score at 3.0. This implied that most MFIs took treated this information seriously. The understanding

was that where loan default was habitual, and thus repeat behavior was likely to happen therefore, such credit risk could be avoided.

The findings show that the assertion that firms confirms that the borrower has used past loans for intended purpose recorded a mean score of 3.55. This mean score was higher than the neutral mean score at 3.0. This implied that information on how the applicant had used past loans was considered necessary in the process of assessing the applicant's credit worthiness in the minimization of credit risk. It is shown in Table 4.9 that information on borrower's lifestyle recorded a mean score of 3.70, a value higher than the neutral mean score of 3.0. The implication is that most MFIs considered information on applicants' lifestyle to be useful information in assessing the applicant's credit worthiness. The findings also show that information on social relations such as membership groups, consumption and entertainment recorded a mean score of 3.64. This mean score was higher than the neutral mean score at 3.0. This implied that most of the employees regarded applicants' information on social relations as useful in the assessing an applicant's credit worthiness, a precursor to effective credit risk management.

It was established that information on borrower's personality and self-concept recorded a mean score of 3.68. The values much higher than the neutral mean score at 3.0, thus implying that most employees considered information on borrower's personality and self-concept as necessary in the management of credit risk. The findings in Table 4.9 show that information on borrower's spending behavior such as drunkenness, wasteful spending and irresponsibility recorded a mean score of 3.75. The value was greater than the the neutral mean score at 3.0. This implied that most of the MFI employees agreed that information on borrower's spending behavior such as drunkenness, wasteful spending and irresponsibility. This is because such behaviours made it difficult for the applicant to honor his loan obligations.

#### **4.4.6 Descriptive Statistical Results for Credit Risk Management**

Several statements were used to determine the effect of borrower's character information on credit risk management in MFIs in Nakuru Town, Kenya. The scale for analysis was 1 = strongly disagree and 5 = strongly agree. Means were computed, and the results are presented in Table 4.10

**Table 4.10: Descriptive Statistical Results for Credit Risk Management**

|   | <b>N</b> | <b>Min</b> | <b>Max</b> | <b>Mean</b> | <b>Std. Dev.</b> |
|---|----------|------------|------------|-------------|------------------|
| Asymmetry information usually hinders proper credit repayment by our clients                        | 56       | 1          | 5          | 3.54        | 1.078            |
| Adverse shocks affecting the borrower are usually a major cause of poor credit repayment            | 56       | 1          | 5          | 3.63        | 1.001            |
| Through banking relationships, we have always been able to attain high effort and timely repayments | 56       | 1          | 5          | 3.77        | .972             |
| We rated highly as a result of low portfolio at risk  | 56       | 1          | 5          | 3.77        | 1.044            |
| Portfolio at risk is usually used to determine subjective provisioning                              | 56       | 1          | 5          | 3.61        | .846             |
| Provision of bad loan debtors has been increasing by 5% over the last three years                   | 56       | 1          | 5          | 3.80        | .840             |
| Valid N (listwise)  | 56       |            |            |             |                  |

The results for the means computed were as follows. The statement implying that asymmetry information usually hinders proper credit repayment by our clients, recorded a mean score 3.54. The value was greater than the neutral mean score at 3.0. This shows that most MFI employees agreed that information failure in respect to the loan applicant affected credit risk management. The findings reveal that the statement asserting that adverse shocks affecting the borrower are usually a major cause of poor credit repayment, recorded a mean score of 3.63. The value was greater than the neutral mean score at 3.0. This implied that most of the respondents / employees agreed that there was a relationship between adverse shocks and poor credit repayment. Therefore obtaining borrowers' information in this regard was useful in credit risk management.

The findings show that the assertion that through banking relationships, MFIs have always been able to attain high effort and timely repayments, recorded a mean score of 3.77. This implied that most MFIs operating in Nakuru had been able to attain high effort and timely repayments, owing to their banking relationships. This was useful in credit risk management.

It was shown in Table 4.10 that most MFIs rated highly as a result of low portfolio at risk; this was shown through a mean score of 3.77, which was higher than the neutral mean score of 3.0. This was an indicator of effectiveness in credit risk management, which from the findings can be attributed to borrowers' information.

The findings show that the statement implying that portfolio at risk is usually used to determine subjective provisioning recorded a mean score of 3.61. The value was greater than the neutral mean score at 3.0. This implied that most of the MFI staff agreed that portfolio at risk is usually used to determine subjective provisioning. It was thus important that the MFIs obtain as much information as possible from the borrowers, before advancing them with loans.

The findings show that the assertion that provision of bad loan debtors has been increasing by 5% over the last three years, recorded a mean score of 3.80. The value was greater than the neutral mean score at 3.0. This implied that according to most of the MFI staff provision of bad loan debtors has been increasing by 5% over the last three years. This was indicative of the presence credit management issues.

#### **4.5 Correlation Analysis**

This section shows how the researcher came up with relevant inferences in line with the study objectives. The section presents and discusses findings resulting from correlation analysis involving the independent variables and their influence on credit risk management in microfinance institutions.

##### **4.5.1 Correlations between Borrower's Capacity Information and Credit Risk Management**

The results for Pearson correlation between borrower's capacity information and credit risk management was as provided in Table 4.11.

**Table 4.11: Correlations between Borrower’s Capacity Information and Credit Risk Management**

|   |                        | <b>Information on<br/>Borrower's<br/>Capacity</b> | <b>Credit Risk<br/>Management</b> |
|---|------------------------|---|-----------------------------------|
| <b>Information on<br/>Borrower's<br/>Capacity</b> | Pearson<br>Correlation | 1   | .108                              |
|   | Sig. (2-tailed)        |   | .427                              |
|   | N                      | 56  | 56                                |
| <b>Credit Risk<br/>Management</b>                 | Pearson<br>Correlation | .108  | 1                                 |
|   | Sig. (2-tailed)        | .427  |                                   |
|   | N                      | 56  | 56                                |

\*. Correlation is significant at the 0.05 level (2-tailed).

The findings in Table 4.11 show that there was a positive Pearson correlation between borrower’s capacity information and credit risk management ( $r = 0.108$ ,  $p = 0.427$ ). The results show that there was a positive association between borrower’s capacity information and credit risk management. SPSS indicates it is significant at the 0.05 level for a two-tailed prediction. The actual p value is shown to be 0.427-So, are the results statistically significant or not? Has the null hypothesis been rejected or it hasn’t been rejected? Address this mode on this and entire document. These results indicate that as borrower’s capacity information utilization increases, credit risk management increases, thus a positive correlation. However, the p value was greater than the 0.05 test significant level, thus implying that this relationship is statistically insignificant. It therefore emerges that even though the two variables are positively correlated, borrower’s capacity information was not statistically significant as a predictor of credit risk management.

#### **4.5.2 Correlations between Borrower’s Capital Information and Credit Risk Management**

The results for Pearson correlation between borrower’s capital information and credit risk management was as provided in Table 4.12.



**Table 4.12: Correlations between Borrower’s Capital Information and Credit Risk Management**

|  |                        | <b>Information on<br/>Borrower's Capital</b> | <b>Credit Risk<br/>Management</b> |
|--|------------------------|--|-----------------------------------|
| <b>Information on<br/>Borrower's Capital</b> | Pearson<br>Correlation | 1  | .279*                             |
|  | Sig. (2-tailed)        |  | .037                              |
|  | N                      | 56   | 56                                |
| <b>Credit Risk<br/>Management</b>            | Pearson<br>Correlation | .279*  | 1                                 |
|  | Sig. (2-tailed)        | .037   |                                   |
|  | N                      | 56   | 56                                |

\*. Correlation is significant at the 0.05 level (2-tailed).

The findings in Table 4.12 show that there was a positive Pearson correlation between borrower’s capacity information and credit risk management ( $r = 0.279$ ,  $p = 0.037$ ). The results show that there was a positive association between borrower’s capacity information and credit risk management. SPSS indicates it is significant at the 0.05 level for a two-tailed prediction. The actual p value is shown to be 0.037. These results indicate that as borrower’s capital information utilization increases, credit risk management increases, thus a positive correlation. The p value was less than the 0.05 test significant level, thus implying that this relationship is statistically significant. Therefore, borrower’s capital information was significant as a predictor of credit risk management.

#### **4.5.3 Correlations between Borrowers’ Collateral or Guarantees Information and Credit Risk Management**

The results for Pearson correlation between borrowers’ collateral, or guarantors Information and credit risk management was as provided in Table 4.13.

**Table 4.13: Correlations between Collateral or Guarantors Information and Credit Risk Management**

|   |  | <b>Information on<br/>Borrower's<br/>Collateral or<br/>Guarantors</b> | <b>Credit Risk<br/>Management</b> |
|---|--|---|-----------------------------------|
| <b>Information on<br/>Borrower's<br/>Collateral or<br/>Guarantors</b> | Pearson<br>Correlation<br>Sig. (2-tailed)<br>N | 1<br><br>56   | .287*<br><br>56                   |
| <b>Credit Risk<br/>Management</b>                                     | Pearson<br>Correlation<br>Sig. (2-tailed)<br>N | .287*<br><br>.032<br>56   | 1<br><br>56                       |

\*. Correlation is significant at the 0.05 level (2-tailed).

The findings in Table 4.13 show that there was a positive Pearson correlation between borrower's collateral, or guarantors' information and credit risk management ( $r = 0.287$ ,  $p = 0.032$ ). The results show that there was a positive association between borrower's collateral, or guarantors' information and credit risk management. SPSS indicates it is significant at the 0.05 level for a two-tailed prediction. The actual p value is shown to be 0.032 ( $p < 0.05$ ). These results indicate that as borrower's collateral, or guarantors' information utilization increases, credit risk management increases, thus a positive correlation. The p value was less than the 0.05 test significant level, thus implying that this relationship is statistically significant. Therefore, borrower's collateral, or guarantors information was significant as a predictor of credit risk management.

#### **4.5.4 Correlations between Borrower's conditions and Credit Risk Management**

The results for Pearson correlation between borrowers' conditions information and credit risk management was as provided in Table 4.14.

**Table 4.14: Correlations between Borrower’s conditions and Credit Risk Management**

|   |   | <b>Information on<br/>Borrower's<br/>Conditions</b> | <b>Credit Risk<br/>Management</b> |
|---|---|---|-----------------------------------|
| <b>Information on<br/>Borrower's<br/>Conditions</b> | Pearson<br>Correlation<br>Sig. (2-<br>tailed) | 1   | .298*                             |
|   | N   | 56  | 56                                |
| <b>Credit Risk<br/>Management</b>                   | Pearson<br>Correlation<br>Sig. (2-<br>tailed) | .298*   | 1                                 |
|   | N   | 56  | 56                                |

\*. Correlation is significant at the 0.05 level (2-tailed).

The findings in Table 4.14 show that there was a positive Pearson correlation between borrower’s conditions information and credit risk management ( $r = 0.298$ ,  $p = 0.025$ ). The results show that there was a positive association between information on borrower’s conditions and credit risk management. SPSS indicates that it is significant at the 0.05 level for a two-tailed prediction. The actual p value is shown to be 0.025 ( $p < 0.05$ ). These results indicate that as information on borrower’s conditions utilization increases, credit risk management increases, thus a positive correlation. The p value was less than the 0.05 test significant level, thus implying that this relationship is statistically significant. Therefore, information on borrower’s conditions was significant as a predictor of credit risk management.

#### **4.5.5 Correlations between Borrower’s Character and Credit Risk Management**

The results for Pearson correlation between information on borrowers’ character and credit risk management was as provided in Table 4.15.

**Table 4.15: Correlations between Borrower’s Character and Credit Risk Management**

|  |  | <b>Information on<br/>Borrower's<br/>Character</b> | <b>Credit Risk<br/>Management</b> |
|--|--|--|-----------------------------------|
| <b>Information on<br/>Borrower's<br/>Character</b> | Pearson<br>Correlation<br>Sig. (2-tailed)<br>N | 1<br><br>56  | .330*<br><br>.013<br>56           |
| <b>Credit Risk<br/>Management</b>                  | Pearson<br>Correlation<br>Sig. (2-tailed)<br>N | .330*<br><br>.013<br>56                            | 1<br><br>1<br>56                  |

\*. Correlation is significant at the 0.05 level (2-tailed).

The findings in Table 4.15 show that there was a positive Pearson correlation between borrower’s character information and credit risk management ( $r = 0.330$ ,  $p = 0.013$ ). The results show that there was a positive association between information on borrower’s character and credit risk management. SPSS indicates that it is significant at the 0.05 level for a two-tailed prediction. The actual p value is shown to be 0.013 ( $p < 0.05$ ). These results indicate that as borrower’s character information utilization increases, credit risk management increases, thus a positive correlation. The p value was less than the 0.05 test significant level, thus implying that this relationship is statistically significant. Therefore, information on borrower’s character was significant as a predictor of credit risk management.

#### **4.6 Hypothesis Testing**

This section shows how the researcher carried out hypothesis testing in line with the study objectives. The section presents and discusses findings resulting from One-Way ANOVA analysis of the study variables. In each variable, the study presents the model summary, the regression coefficients and ANOVA findings. Summaries on hypothesis are drawn from both the p-values and the F-test results.

#### 4.6.1 Effect of Borrower’s Capacity Information on Credit Risk Management

To test the study hypothesis  $H_{01}$  which, stated that Borrower’s capacity Information does not significantly affect credit risk management in MFIs in Nakuru Town, linear regression was computed, and the findings were as presented in this subsection. The section includes ANOVA and resultant coefficients.

**Table 4.16: Table Model Summary**

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1     | .108 <sup>a</sup> | .012     | -.007             | .85481                     |

- a. Predictors: (Constant), Information on Borrower's Capacity
- b. an error rate of 85.5%? I need to see your raw SPSS output

The R Square value in the Model Summary table shows the amount of variance in the dependent variable that can be explained by the independent variable. In this case, the independent variable of information on borrower's capacity accounts for 12 per cent of the variability in credit risk management. The R value (0.108) indicates that as utilization of information on borrower's capacity increases positively affects the management of credit risk.

#### Analysis of Variances (ANOVA)

The findings in respect to the analysis of variances are as provided in Table 4.17.

**Table 4. 16: Analysis of Variances (ANOVA)**

| Model |            | Sum of Squares | df | Mean Square | F    | Sig.              |
|-------|------------|----------------|----|-------------|------|-------------------|
| 1     | Regression | .469           | 1  | .469        | .641 | .427 <sup>b</sup> |
|       | Residual   | 39.458         | 54 | .731        |      |                   |
|       | Total      | 39.927         | 55 |             |      |                   |

- a. Dependent Variable: Credit Risk Management
- b. Predictors: (Constant), Information on Borrower's Capacity

The predictor is significant when Sig. (p value)  $p < 0.05$ . The findings in Table 4.17 show that Sig. (p value) = 0.427. As  $p > 0.05$  our predictor is significantly better than would be expected by chance. The regression line predicted by information on borrower's capacity, explains significant amount of the variance in credit risk management. This is reported as:  $F(1, 54) = 0.641$ ;  $p > 0.05$ , and therefore can conclude that the regression is statistically insignificant.

**Table 4.18: Coefficients**

| Model |                                    | Unstandardized |            | Standardized | t     | Sig. |
|-------|------------------------------------|----------------|------------|--------------|-------|------|
|       |                                    | Coefficients   |            | Coefficients |       |      |
|       |                                    | B              | Std. Error | Beta         |       |      |
| 1     | (Constant)                         | 3.180          | .640       |              | 4.965 | .000 |
|       | Information on Borrower's Capacity | .148           | .185       | .108         | .801  | .427 |

a. Dependent Variable: Credit Risk Management

When  $p < 0.05$  = you reject the null hypothesis and when  $p > 0.05$  = you retain the null hypothesis

The findings presented in Table 4.18 show that the regression equation was: Credit Risk Management = 3.180 + 0.148 Information on borrower's capacity. The influence of information on borrower's capacity was reported at beta or  $r = 0.108$ . The  $p$  /sig value of 0.427 was higher than the test significance value,  $p > 0.05$ , therefore statistically insignificant. The Unstandardized Coefficients B column, gives us the coefficients of the independent variables in the regression equation including all the predictor variables. We therefore accept the null hypothesis  $H_{01}$  that implied that borrower's capacity information does not significantly affect credit risk management in MFIs in Nakuru Town. This study is not in agreement with a study by Moti, Masinde, Mugenda and Sindani (2012), capacity of the client to repay has a great influence on the loan performance. It appears that even though this information on borrowers' capacity was important, obtaining this information was tricky in this case. An argument governing this is that it was not obvious that capacity to pay translated into repayment of loan borrowed.

#### **4.6.2 Effect of Borrower's Capital Information on Credit Risk Management in Microfinance Institutions in Nakuru**

To test the study hypothesis  $H_{02}$  which, stated that "Borrower's capital information does not significantly affect credit risk management in MFIs in Nakuru Town, linear regression was computed, and the findings were as presented in this subsection. The section includes ANOVA and resultant coefficients.

**Table 4.19: Model Summary**

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1     | .279 <sup>a</sup> | .078     | .061              | .82572                     |

a. Predictors: (Constant), Information on Borrower's Capital

The R Square value in the Model Summary table shows the amount of variance in the dependent variable that can be explained by the independent variable. In this case, the independent variable of information on borrower's capacity accounts for 7.8 per cent of the variability in credit risk management. The R value (0.279) indicates that as utilization of information on borrower's capacity increases positively affects the management of credit risk.

#### **Analysis of Variances (ANOVA)**

The findings in respect to the analysis of variances are as provided in Table 4.20.

**Table 4. 17: Analysis of Variances (ANOVA)**

| Model |            | Sum of Squares | df | Mean Square | F     | Sig.              |
|-------|------------|----------------|----|-------------|-------|-------------------|
| 1     | Regression | 3.109          | 1  | 3.109       | 4.560 | .037 <sup>b</sup> |
|       | Residual   | 36.818         | 54 | .682        |       |                   |
|       | Total      | 39.927         | 55 |             |       |                   |

a. Dependent Variable: Credit Risk Management

b. Predictors: (Constant), Information on Borrower's Capital

The predictor is significant when Sig. (p value)  $p < 0.05$ . The findings in Table 4.20 show that Sig. (p value) = 0.037. As  $p < 0.05$  our predictor is significantly better than would be expected by chance. The regression line predicted by information on borrower's capital, explains significant amount of the variance in credit risk management. This is reported as:  $F(1, 54) = 4.560$ ;  $p < 0.05$ , and therefore can conclude that the regression is statistically significant.

**Table 4. 18: Coefficients for Information on Borrower’s Capital**

| Model |                                   | Unstandardized |            | Standardized | t     | Sig. |
|-------|-----------------------------------|----------------|------------|--------------|-------|------|
|       |                                   | Coefficients   |            | Coefficients |       |      |
|       |                                   | B              | Std. Error | Beta         |       |      |
| 1     | (Constant)                        | 2.560          | .538       |              | 4.757 | .000 |
|       | Information on Borrower's Capital | .312           | .146       | .279         | 2.135 | .037 |

a. Dependent Variable: Credit Risk Management

When  $p < 0.05$  = you reject the null hypothesis

When  $p > 0.05$  = you retain the null hypothesis

The findings presented in Table 4.21 show that the regression equation was: Credit Risk Management = 2.560 + 0.312 Information on borrower's capital. The influence of information on borrower's capital was reported at beta or  $r = 0.279$ . The  $p$  /sig value of 0.037 was lower than the test significance value,  $p > 0.05$ , therefore statistically significant. The Unstandardized Coefficients B column, gives us the coefficients of the independent variables in the regression equation including all the predictor variables. We therefore reject the null hypothesis  $H_{02}$  that implied that borrower’s capital information significantly affects credit risk management in MFIs in Nakuru Town. This implied that borrower’s capital information affected credit risk management significantly. The finding is in agreement with a study by Kiplimo and Kalio (2012) who observed that in order to determine if the borrower has the ability to repay the debt; microfinance institutions consider the cash flow from the business, the timing of the repayment, and the successful repayment of the loan.

#### **4.6.3 Effect of Borrower’s Collateral, or Guarantees Information on Credit Risk Management**

To test the study hypothesis  $H_{03}$  which stated that “Borrower’s collateral or guarantees information, does not significantly affect credit risk management in MFIs in Nakuru Town”, linear regression was computed, and the findings were as presented in this subsection. The section includes ANOVA and resultant coefficients.



**Table 4.22: Model Summary**

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1     | .287 <sup>a</sup> | .082     | .065              | .82375                     |

a. Predictors: (Constant), Information on Borrower's Collateral or Guarantors

The R Square value in the Model Summary table shows the amount of variance in the dependent variable that can be explained by the independent variable. In this case, the independent variable of information on borrower's collateral or guarantors accounts for 8.2 per cent of the variability in credit risk management. The R value (0.287) indicates that as utilization of information on borrower's collateral or guarantors increases positively affects the management of credit risk.

#### **Analysis of Variances (ANOVA)**

The findings in respect to the analysis of variances are as provided in Table 4.23.

**Table 4. 19: Analysis of Variances (ANOVA)**

| Model |            | Sum of Squares | df | Mean Square | F     | Sig.              |
|-------|------------|----------------|----|-------------|-------|-------------------|
| 1     | Regression | 3.284          | 1  | 3.284       | 4.840 | .032 <sup>b</sup> |
|       | Residual   | 36.642         | 54 | .679        |       |                   |
|       | Total      | 39.927         | 55 |             |       |                   |

a. Dependent Variable: Credit Risk Management

b. Predictors: (Constant), Information on Borrower's Collateral or Guarantors

The predictor is significant when Sig. (p value)  $p < 0.05$ . The findings in Table 4.23 show that Sig. (p value) = 0.032. As  $p < 0.05$  our predictor is significantly better than would be expected by chance. The regression line predicted by information on collateral or guarantors, explains significant amount of the variance in credit risk management. This is reported as:  $F(1, 54) = 4.840$ ;  $p < 0.05$ , and therefore can conclude that the regression is statistically significant.

**Table 4. 20: Coefficients for Information on Borrower’s Collateral or Guarantors**

| Model |  | Unstandardized |            | Standardized | t     | Sig. |
|-------|--|----------------|------------|--------------|-------|------|
|       |  | Coefficients   |            | Coefficients |       |      |
|       |  | B              | Std. Error | Beta         |       |      |
| 1     | (Constant)   | 2.451          | .571       |              | 4.292 | .000 |
|       | Information on Borrower's Collateral or Guarantors | .329           | .150       | .287         | 2.200 | .032 |

a. Dependent Variable: Credit Risk Management

When  $p < 0.05$  = you reject the null hypothesis

When  $p > 0.05$  = you retain the null hypothesis

The findings presented in Table 4.24 show that the regression equation was: Credit Risk Management = 2.451 + .329 Information on borrower's collateral or guarantors. The influence of information on borrower's collateral or guarantors was reported at beta or  $r = 0.032$ . The  $p$  /sig value was lower than the test significance value,  $p < 0.05$ , therefore statistically significant. The Unstandardized Coefficients B column, gives us the coefficients of the independent variables in the regression equation including all the predictor variables. We therefore reject the null hypothesis  $H_{03}$  that implied that information on borrower’s collateral or guarantors does not significantly affect credit risk management in MFIs in Nakuru Town. This implied that borrower’s collateral or guarantors information affected credit risk management significantly. The finding are agreement with a study by Inkumbi (2009) who noted that capital and collateral are the major obstacles for entrepreneurs trying to access capital. Similarly, Abedi (2009) in a research paper titled “Highway to Success” found that microfinance institutions could use the borrower’s Collateral, or Guarantees to evaluate a customer as a potential borrower in order to increase as loan performance.

#### **4.6.4 Effect of Borrower’s conditions on Credit Risk Management**

To test the study hypothesis  $H_{04}$  which stated that “Borrower’s conditions information, does not significantly affect credit risk management in MFIs in Nakuru

Town”, linear regression was computed, and the findings were as presented in this subsection. The section includes ANOVA and resultant coefficients.

**Table 4.25: Model Summary**

| Model | R     | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------|----------|-------------------|----------------------------|
| 1     | .298a | .089     | .072              | .82069                     |

a. Predictors: (Constant), Information on Borrower's Conditions

The R Square value shows the amount of variance in the dependent variable that can be explained by the independent variable. In this case, information on borrower's conditions accounts for 8.9 per cent of the variability in profitability. The R value (0.298) indicates that as utilization of information on borrower's conditions information increases positively affects the management of credit risk.

#### **Analysis of Variances (ANOVA)**

The findings in respect to the analysis of variances are as provided in Table 4.26.

**Table 4. 21: Analysis of Variances (ANOVA)**

| Model |            | Sum of Squares | df | Mean Square | F     | Sig.              |
|-------|------------|----------------|----|-------------|-------|-------------------|
| 1     | Regression | 3.555          | 1  | 3.555       | 5.279 | .025 <sup>b</sup> |
|       | Residual   | 36.371         | 54 | .674        |       |                   |
|       | Total      | 39.927         | 55 |             |       |                   |

a. Dependent Variable: Credit Risk Management

b. Predictors: (Constant), Information on Borrower's Conditions

The predictor is significant when Sig. (p value)  $p < 0.05$ . The findings in Table 4.26 show that Sig. (p value) = 0.025. As  $p < 0.05$  our predictor is significantly better than would be expected by chance. The regression line predicted by information on conditions, explains significant amount of the variance in credit risk management. This is reported as:  $F(1, 54) = 5.279$ ;  $p < 0.05$ , and therefore can conclude that the regression is statistically significant.

**Table 4. 22: Coefficients for Information on Borrower’s Conditions**

| Model |                                      | Unstandardized |            | Standardized | t     | Sig. |
|-------|--------------------------------------|----------------|------------|--------------|-------|------|
|       |                                      | Coefficients   |            | Coefficients |       |      |
|       |                                      | B              | Std. Error | Beta         |       |      |
| 1     | (Constant)                           | 2.563          | .501       |              | 5.120 | .000 |
|       | Information on Borrower's Conditions | .305           | .133       | .298         | 2.298 | .025 |

a. Dependent Variable: Credit Risk Management

When  $p < 0.05$  = you reject the null hypothesis

When  $p > 0.05$  = you retain the null hypothesis

The findings presented in Table 4.27 show that the regression equation was: Credit Risk Management = 2.563 + 0.305 Information on borrower's conditions. The influence of information on borrower's conditions was reported at beta or  $r = 0.025$ . The  $p$  /sig value was lower than the test significance value,  $p < 0.05$ , therefore statistically significant. The Unstandardized Coefficients B column, gives us the coefficients of the independent variables in the regression equation including all the predictor variables. We therefore reject the null hypothesis  $H_{04}$  that implied that information on borrower’s conditions does not significantly affect credit risk management in MFIs in Nakuru Town. This implied that borrower’s conditions information affected credit risk management significantly. This finding is in line with Pandey (2008) who noted information on borrowers’ conditions was Important in credit risk management. The researcher noted that as economic conditions change, the credit policy of the firm may also change. Therefore, MFIs must develop a credit policy to govern their credit management operations. The findings are in agreement with a study by Kiplimo and Kalio (2012) found that borrowers’ character was key in credit risk management. Their study revealed that personal factors include age, life cycle stage, occupation, income or economic situation, personality and self-concept.

#### 4.6.5 Effect of Borrower’s Character on Credit Risk Management

To test the study hypothesis H<sub>04</sub> which stated that “Borrower’s character information, does not significantly affect credit risk management in MFIs in Nakuru Town”, linear regression was computed, and the findings were as presented in this subsection. The section includes ANOVA and resultant coefficients.

**Table 4.28: Model Summary**

| Model | R     | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------|----------|-------------------|----------------------------|
| 1     | .330a | .109     | .092              | .81180                     |

a. Predictors: (Constant), Information on Borrower's Character

The R Square value in the Model Summary table shows the amount of variance in the dependent variable that can be explained by the independent variable. In this case, the independent variable of information on borrower's character accounts for 10.9 per cent of the variability in credit risk management. The R value (0.317) indicates that as utilization of information on borrower's character information increases positively affects the management of credit risk.

#### Analysis of Variances (ANOVA)

The findings in respect to the analysis of variances are as provided in Table 4.29.

**Table 4. 23: Analysis of Variances (ANOVA)**

| Model |            | Sum of Squares | df | Mean Square | F     | Sig.  |
|-------|------------|----------------|----|-------------|-------|-------|
| 1     | Regression | 4.340          | 1  | 4.340       | 6.585 | .013b |
|       | Residual   | 35.587         | 54 | .659        |       |       |
|       | Total      | 39.927         | 55 |             |       |       |

a. Dependent Variable: Credit Risk Management

b. Predictors: (Constant), Information on Borrower's Character

The predictor is significant when Sig. (p value)  $p < 0.05$ . The findings in Table 4.29 show that Sig. (p value) = 0.013. As  $p < 0.05$  our predictor is significantly better than would be expected by chance. The regression line predicted by information on character, explains significant amount of the variance in credit risk management. This

is reported as:  $F(1, 54) = 6.585$ ;  $p < 0.05$ , and therefore can conclude that the regression is statistically significant.

The findings presented in Table 4.30 show that the regression equation was: Credit Risk Management = 2.533 + 0.317 Information on borrower's character. The influence of information on borrower's character was reported at beta or  $r = 0.013$ . The  $p$  /sig value was lower than the test significance value,  $p < 0.05$ , therefore statistically significant. The Unstandardized Coefficients B column, gives us the coefficients of the independent variables in the regression equation including all the predictor variables.

**Table 4.24: Coefficients for Information on Borrower's Character**

| Model |                                     | Unstandardized Coefficients |            | Standardized Coefficients | t     | Sig. |
|-------|-------------------------------------|-----------------------------|------------|---------------------------|-------|------|
|       |                                     | B                           | Std. Error | Beta                      |       |      |
| 1     | (Constant)                          | 2.533                       | .462       |                           | 5.489 | .000 |
|       | Information on Borrower's Character | .317                        | .123       | .330                      | 2.566 | .013 |

a. dependent variable: credit risk management

When  $p < 0.05$  = you reject the null hypothesis

When  $p > 0.05$  = you retain the null hypothesis

We therefore reject the null hypothesis  $H_{04}$  that implied that information on borrower's character does not significantly affect credit risk management in MFIs in Nakuru Town. This implied that borrower's character information affected credit risk management significantly.

#### 4.7 Multiple Regression

To establish the effect of independent variables on credit risk management, the study carried out regression analysis and the findings as shown in Table 4.31.

**Table 4.31: Model Summary**

| Model | R     | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------|----------|-------------------|----------------------------|
| 1     | .433a | .188     | .107              | .80537                     |

a. Predictors: (Constant), Information on Borrower's Character, Information on Borrower's Capacity, Information on Borrower's Capital, Information on Borrower's Collateral or Guarantors, Information on Borrower's Conditions

The R Square value in the Model Summary table shows the amount of variance in the dependent variable that can be explained by the independent variable. In this case the independent variables of information on borrower's character, information on borrower's capacity, information on borrower's capital, information on borrower's collateral or guarantors, and information on borrower's conditions accounted for 43.3 per cent of the variability in profitability. The R value (0.188) indicates that as the utilization of the five variables increases credit risk management efficacy.

#### **Analysis of Variances (ANOVA)**

The findings in respect to the analysis of variances were as provided in Table 4.32.

**Table 4.325: Analysis of Variances (ANOVA)**

| Model |            | Sum of Squares | df | Mean Square | F     | Sig.  |
|-------|------------|----------------|----|-------------|-------|-------|
| 1     | Regression | 7.496          | 5  | 1.499       | 2.311 | .058b |
|       | Residual   | 32.431         | 50 | .649        |       |       |
|       | Total      | 39.927         | 55 |             |       |       |

a. Dependent Variable: Credit Risk Management

b. Predictors: (Constant), Information on Borrower's Character, Information on Borrower's Capacity, Information on Borrower's Capital, Information on Borrower's Collateral or Guarantors, Information on Borrower's Conditions

In the study, the predictor is significant when Sig. (p value)  $p < 0.05$ . The findings in Table 4.32 show that that Sig. (p value) = 0.058. As  $p > 0.05$  our predictors combined are significantly not better than would be expected by chance. The regression line predicted by the dimensions of borrower's information explains an insignificant amount of the variance in credit risk management. This is reported as:  $F(5, 50) =$

2.311;  $p > .05$ , and therefore can conclude that the regression is statistically insignificant.

**Table 4.33: Coefficients for Multiple Regressions**

| Model  | Unstandardized |            | Standardized | t     | Sig. |
|--|----------------|------------|--------------|-------|------|
|  | Coefficients   |            | Coefficients |       |      |
|  | B              | Std. Error | Beta         |       |      |
| 1 (Constant)                                       | 1.298          | .844       |              | 1.539 | .130 |
| Information on Borrower's Capacity                 | -.027          | .183       | -.020        | -.149 | .882 |
| Information on Borrower's Capital                  | .211           | .164       | .188         | 1.288 | .204 |
| Information on Borrower's Collateral or Guarantors | .263           | .192       | .230         | 1.371 | .176 |
| Information on Borrower's Conditions               | -.041          | .200       | -.040        | -.206 | .838 |
| Information on Borrower's Character                | .243           | .140       | .253         | 1.743 | .088 |

a. Dependent Variable: Credit Risk Management

The following regression model was used

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \epsilon$$

$$\text{Credit Risk Management} = 1.298 - 0.027 + 0.211 - 0.263 - 0.041 + 0.243 + \epsilon$$

As provided in Table 4.33, the Unstandardized Coefficients B column, gives us the coefficients of the independent variables in the regression equation including all the predictor variables. So the regression equation is: Credit Risk Management = 1.298 - 0.027 Information on Borrower's Capacity + 0.211 Information on Borrower's Capital - 0.263 Information on Borrower's Collateral or Guarantors - 0.041 Information on Borrower's Conditions + 0.243 Information on Borrower's Character +  $\epsilon$ .

From the findings it emerges that the most influential factor affecting Credit Risk Management in order of their beta strength was information on borrower's character (r



= 0.253;  $t = 1.743$ ), followed by Information on borrower's collateral or guarantors ( $r = .230$ ;  $t = 1.371$ ). The other two factors had a negative beta value as follows. Information on Borrower's Capacity ( $r = -0.020$ ); and Information on Borrower's Conditions ( $r = -0.040$ ). The finding thus, shows that information on borrower's character and information on borrower's collateral or guarantors had the highest beta values, thus, most important factors. This is contrary to a study by Brown and Moles (2014) who found that capacity to repay was the most critical of the five factors; it is the primary source of repayment - cash.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents the summary, conclusions and recommendations of the study. The main objective of the study was to establish the effect of borrowers' information on credit risk management in microfinance institutions in Nakuru Town. The chapter contains a summary of the study findings, the conclusion, recommendations and suggestions for further studies.

#### **5.2 Summary of the Findings**

This section provides a summary of the findings in line with the study objectives.

##### **5.2.1 Effect of Borrower's Capacity Information on Credit Risk Management**

The study sought to determine the effect of borrower's capacity information on credit risk management in microfinance institutions in Nakuru Town. The findings showed that Borrower's Capacity Information had an insignificant effect on credit risk management Nakuru Town. Payment history on existing credit relationships was important borrower's information required in assessing credit risk. Information on how a borrower used loans was necessary, as it was a pointer to credit risk. The study also established that information in respect to the borrower's sources of repayment was critical in assessing the borrowers' capacity and the element of credit risk. The study also established that information on the borrowers' age was important in assessing the borrowers' capacity to repay the loan. Most of the MFI employees were convinced that higher management experience had a lesser credit risk, thus such borrower's information was useful. There was a positive Pearson correlation between borrower's capacity information and credit risk management ( $r = 0.108$ ,  $p = 0.427$ ). The study also established that the independent variable of borrower's capacity information accounts for 12 per cent of the variability in credit risk management.

##### **5.2.2 Effect of Borrower's Capital Information on Credit Risk Management**

The second objective sought to find out the effect of borrower's capital information on credit risk management in microfinance institutions in Nakuru Town. The study established that borrower's capital information has a significant influence on credit risk management in microfinance institutions in Nakuru Town. Borrower's capital

information was considered very important to the MFI staff, and therefore efforts were made to ensure that this information was collected prior to advancing loans to borrowers. The study established that most of the employees believed that the capital the borrower puts toward a potential investment is a guarantee of less risk. Down payments in investments lessened credit risk. Borrower's information on cash flow statements and reasonable projections for the future lessened credit risk. It was found that borrower's information on financial ratios were useful in the management of credit risk. Most staff considered tangible net worth of the borrower's business to be an important aspect in determining a borrower's credit worthiness. The study also found that most staff were of the view that appraising the applicant's capital before lending minimized credit risk, and thus this was an important of borrower's capital information. There was a positive Pearson correlation between borrower's capacity information and credit risk management ( $r = 0.279$ ,  $p = 0.037$ ). The independent variable of information on borrower's capacity accounts for 7.8 per cent of the variability in credit risk management.

### **5.2.3 Effect of Borrower's Collateral on Credit Risk Management**

The third objective sought to establish the effect of borrower's collateral, or guarantees information on credit risk management in microfinance institutions in Nakuru Town. The study established that Information on borrower's collateral, or guarantees has a significant effect of borrower's collateral, or guarantees information on credit risk management in microfinance institutions in Nakuru Town. The following facts also emerge from the study; collateral types owned by applicants determine the level of credit risk. The higher the collateral value, the lesser the credit risk, the strength provided by any guarantors is associated with credit risk, and that the quality of the applicant's collateral determines the level of credit risk. The study also revealed that most respondents believed that the quality of collaterals results into unprofitable lending and inaccurate risk identification and reporting; and that failure to verify collateral control is inaccurate risk identification. There was a positive Pearson correlation between borrower's collateral, or guarantors' information and credit risk management ( $r = 0.287$ ,  $p = 0.032$ ). The regression analysis show that information on borrower's collateral or guarantors accounts for 8.2 per cent of the variability in credit risk management.

#### **5.2.4 Effect of Borrower's Conditions Information on Credit Risk Management**

The fourth objective was to establish the effect of borrower's conditions information on credit risk management in microfinance institutions in Nakuru Town. The study established that borrower's conditions information has a significant effect on credit risk management in microfinance institutions in Nakuru Town. The study further revealed that assessment of the borrower's business distribution systems was taken seriously by the MFI staff. Information on borrowers' business operating conditions was considered critical in the assessment of the lending risk associated with the borrower in most MFIs. The findings also show that most employees indicated that information on the applicant's business growth was considered to lessen credit risk; and that information on whether the applicant has relevant business inputs was considered useful in determining whether or not the applicant was able to repay the loan or not.

Information on the applicant's business intentions was considered essential in assessing the applicant's credit worthiness. In addition, most of the MFIs' applicants' employment intentions are priority areas during loan appraisal. While we also note that the firm was always up to date with information on the applicants' political and environmental factors. The study also revealed that MFIs are always equipped with information on borrowers' financial conditions such as bank statements, outstanding loans are. The study found that portfolio at risk is usually used to determine subjective provisioning; and that provision of bad loan debtors has been increasing by 5% over the last three years. There was a positive Pearson correlation between borrower's character information and credit risk management ( $r = 0.330$ ,  $p = 0.013$ ). Regression analysis revealed that borrower's character accounts for 10.9 per cent of the variability in credit risk management.

#### **5.2.5 Effect of Borrower's Character Information on Credit Risk Management**

The fifth objective was to determine the effect of borrower's character information on credit risk management in MFIs in Nakuru Town. The findings show that borrower's character information had a significant influence on credit risk management in microfinance institutions in Nakuru Town. This was because most of the MFIs took seriously information on borrowers' loan history loan default history, confirmed that the borrower has used past loans for intended purpose, Information on borrower's lifestyle, information on social relations such as membership groups, consumption

and entertainment, information on borrower's personality and self-concept, and information on borrower's spending behavior such as drunkenness, wasteful spending, and irresponsibility. There was a positive Pearson correlation between borrower's character information and credit risk management ( $r = 0.330$ ,  $p = 0.013$ ). Information on borrower's character accounts for 10.9 per cent of the variability in credit risk management.

### **5.3 Conclusion**

The study concludes that borrower's capacity information had an effect on credit risk management in microfinance institutions in Nakuru Town. However, the effect was not statistically significant as demonstrated in the study. This shows that even though there was general understanding that information on the borrower's capacity was necessary. However, it can be concluded that there was little effort in obtaining this information by most Microfinance Institutions.

The study concludes that borrower's capital information had a significant influence on credit risk management in microfinance institutions in Nakuru Town. In other words an increase in the utilization borrower's capital information resulted into reduction credit risk significantly. However, much effort needs to enhance the effectiveness of borrower's capital information in credit risk management in microfinance institutions.

The study concludes that borrower's collateral, or guarantees information had a significant influence on credit risk management in microfinance institutions in Nakuru Town. The value, type and quality of collaterals had an effect on credit risk management in microfinance institutions. However, these aspects were not treated seriously in some MFIs and this was affecting the process and outcome of credit risk management.

Borrower's conditions information has a significant effect on credit risk management in in microfinance institutions in Nakuru Town. This is so because, most MFIs were keen on informational aspects such as borrower's business distribution systems, borrowers' business operating conditions, applicant's business growth, applicant's business intentions, applicants' employment intentions, and information on the applicants' political and environmental factors. However this information was taken seriously in all MFIs.

Borrower's character information had a significant influence on credit risk management in microfinance institutions in Nakuru Town. To most of the MFIs, this type of information was part and parcel of the applicant's appraisal in the management of credit risk. This was made possible, given that most MFIs took seriously aspects such as borrowers' loan history, borrower's lifestyle, social relations such as membership groups, consumption and entertainment, personality and self-concept, and borrower's spending behavior.

#### **5.4 Recommendations of the Study**

The management of MFIs should consider setting up clear guidelines on the type of information aspects to be collected in respect to borrower's capital. This should be accompanied with a detailed and meticulous analysis of indicators of capacity such as payment history. The MFIs can also utilize existing information at the credit reference bureau (CRB) to ascertain how much debt an applicant can handle.

The management of MFIs should consider engaging more professionals and / or offering update training to loan officers on how to effectively analyze and interpret financial reports in the quest of obtaining loan applicant's capital as well information in respect to the 5Cs. This is information on capital has been found to be critical in this study.

The management of MFIs should consider conducting regular research to help in the development of practical strategies for enhancing the effectiveness of the 5Cs (capital, capacity, conditions, collateral and character) in credit risk management.

#### **5.5 Suggestions for Further Research**

The study focused on the effect of borrowers' information in MFIs in Nakuru town, and thus, it is not clear whether or not similar findings can be obtained for MFIs in the whole Nakuru County. In relation to this, further comparison of small and medium retail supermarkets should also be undertaken.

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## APPENDICES

### Appendix I: Research Questionnaire

The questionnaire is intended to collect information related to the effect of borrower information on credit risk management in microfinance institutions in Nakuru County, Kenya. Please be assured the information you provide will be solely for academic purposes and will be treated in confidence.

#### Section A: Bio Data

Kindly fill the blank with a tick where appropriate.

1. What is your gender?  
Male [    ]  
Female [    ]
2. What is your age bracket?  
21-30 years [    ]  
31-40 years [    ]  
41-50 years [    ]  
51 years and above [    ]
3. What is your education Level?  
High School [    ]  
Certificate [    ]  
Diploma [    ]  
Degree [    ]  
Masters [    ]
4. How long have you worked for your current employer?  
Less than 1 year [    ]  
1-3 years [    ]  
3-5 years [    ]  
5 years or more [    ]

#### Section B: Borrower's Capacity and Credit Risk Management of Microfinance Institutions in Kenya. Using the scale below, please indicate your level of agreement to the following propositions.

The following statements relate to the effect of borrowers' capacity information on credit risk management. Please indicate whether or not you agree using the scale provided.

5 – Strongly Agree; 4 - Agree; 3 - Neutral; 2 – Disagree; 1 – Strongly Disagree

|            |   | <b>5</b> | <b>4</b> | <b>3</b> | <b>2</b> | <b>1</b> |
|------------|---|----------|----------|----------|----------|----------|
| <b>5.</b>  | Payment history on existing credit relationships is a pointer to credit risk - past performance         |          |          |          |          |          |
| <b>6.</b>  | Use of loan for personal has a higher loan repayment risk than commercial use                           |          |          |          |          |          |
| <b>7.</b>  | Sources of repayment are indicative of how risky it is to loan a given borrower                         |          |          |          |          |          |
| <b>8.</b>  | Younger (youthful) borrowers have a higher capacity of repaying their loans compared to older borrowers |          |          |          |          |          |
| <b>9.</b>  | Borrowers with a higher management experience have a lesser credit risk                                 |          |          |          |          |          |
| <b>10.</b> | Smaller businesses have a lower capacity of repaying the loans, thus pose a higher credit risk.         |          |          |          |          |          |

**SECTION C: Borrower’s Capital and Credit Risk Management of Microfinance Institutions in Kenya. Using the scale below, please indicate your level of agreement to the following propositions.**

The following statements relate to the effect of borrowers’ capital information on credit risk management. Please indicate whether or not you agree using the scale provided.

5 – Strongly Agree; 4 - Agree; 3 - Neutral; 2 – Disagree; 1 – Strongly Disagree

|            |  | <b>5</b> | <b>4</b> | <b>3</b> | <b>2</b> | <b>1</b> |
|------------|--|----------|----------|----------|----------|----------|
| <b>11.</b> | The capital the borrower puts toward a potential investment is a guarantee of less risk            |          |          |          |          |          |
| <b>12.</b> | Down payments in investments indicate the borrower's level of seriousness makes loaning less risky |          |          |          |          |          |
| <b>13.</b> | Cash flow statements and reasonable projections for the future                                     |          |          |          |          |          |
| <b>14.</b> | Loan approval depend to a large extent on the borrower’s financial ratio analysis                  |          |          |          |          |          |
| <b>15.</b> | Tangible net worth of the borrower’s business is a guarantee that the loan will be repaid.         |          |          |          |          |          |
| <b>16.</b> | Lending money after appraising the applicant’s capital enhances recoverability of loans            |          |          |          |          |          |

**SECTION D: Information on Borrower’s Collateral, or Guarantees and Credit Risk Management of Microfinance Institutions.**

The following statements relate to borrowers’ collateral, or guarantees information in credit risk management. Please indicate whether or not you agree using the scale provided.

5 – Strongly Agree; 4 - Agree; 3 - Neutral; 2 – Disagree; 1 – Strongly Disagree

|     |   | 5 | 4 | 3 | 2 | 1 |
|-----|---|---|---|---|---|---|
| 17. | The higher the collateral value the lesser the credit risk  |   |   |   |   |   |
| 18. | Collateral types owned by applicants determine the level of credit risk                                   |   |   |   |   |   |
| 19. | The strength provided by any guarantors is associated with credit risk                                    |   |   |   |   |   |
| 20. | The quality of the applicant’s collateral determines the level of credit risk                             |   |   |   |   |   |
| 21. | Quality of collaterals results into unprofitable lending and inaccurate risk identification and reporting |   |   |   |   |   |
| 22. | Failure to verify collateral control is inaccurate risk identification                                    |   |   |   |   |   |



**SECTION D: Borrowers Conditions and Credit Risk Management of Microfinance Institution. Using the scale below, please indicate your level of agreement to the following propositions.**

The following statements relate to borrowers' conditions information in credit risk management. Please indicate whether you agree using the scale provided.

5 – Strongly Agree; 4 - Agree; 3 - Neutral; 2 – Disagree; 1 – Strongly Disagree

|     |   | 5 | 4 | 3 | 2 | 1 |
|-----|---|---|---|---|---|---|
| 23. | We always verify whether distribution systems are efficient   |   |   |   |   |   |
| 24. | We conduct regular assessment of borrowers operating conditions   |   |   |   |   |   |
| 25. | Our firm checks the applicant's growth in retail sales values   |   |   |   |   |   |
| 26. | We are always keen to find out if the applicant has relevant business inputs such as raw materials                    |   |   |   |   |   |
| 27. | Our firm appraises the applicant's investment intentions prior to loan approval                                       |   |   |   |   |   |
| 28. | Applicants' employment intentions are priority areas during loan appraisal  |   |   |   |   |   |
| 29. | We are always up to date with information on the applicants' Political and environmental factors                      |   |   |   |   |   |
| 30. | We are always equipped with information on borrowers' financial conditions e.g bank statements, outstanding loans are |   |   |   |   |   |

**SECTION E: Borrower’s Character and Credit Risk Management of Microfinance Institution. Using the scale below, please indicate your level of agreement to the following propositions.**

The following statements relate to information on borrowers’ character in the management of credit risk. Please indicate whether you agree using the scale provided. Our firm collects the following information from all the borrowers before giving them loans.

5 – Strongly Agree; 4 - Agree; 3 - Neutral; 2 – Disagree; 1 – Strongly Disagree

|     |   | 5 | 4 | 3 | 2 | 1 |
|-----|---|---|---|---|---|---|
| 31. | Information on borrowers’ loan history – loan default history                                       |   |   |   |   |   |
| 32. | Confirm that the borrower has used past loans for intended purpose                                  |   |   |   |   |   |
| 33. | Information on borrower’s lifestyle   |   |   |   |   |   |
| 34. | Information on social relations such as membership groups, consumption and entertainment            |   |   |   |   |   |
| 35. | Information on borrower’s personality and self-concept  |   |   |   |   |   |
| 36. | Information on borrower’s spending behavior eg drunkenness, wasteful spending, irresponsibility etc |   |   |   |   |   |

**SECTION F: Credit Risk Management of microfinance institutions. Using the scale below, please indicate your level of agreement to the following propositions.**

5 – Strongly Agree; 4 - Agree; 3 - Neutral; 2 – Disagree; 1 – Strongly Disagree

|            |   | <b>5</b> | <b>4</b> | <b>3</b> | <b>2</b> | <b>1</b> |
|------------|---|----------|----------|----------|----------|----------|
| <b>37.</b> | Information asymmetry usually hinders proper credit repayment by our clients                        |          |          |          |          |          |
| <b>38.</b> | Adverse shocks affecting the borrower are usually a major cause of poor credit repayment            |          |          |          |          |          |
| <b>39.</b> | Through banking relationships, we have always been able to attain high effort and timely repayments |          |          |          |          |          |
| <b>40.</b> | We rated highly as a result of low portfolio at risk  |          |          |          |          |          |
| <b>41.</b> | Portfolio at risk is usually used to determine subjective provisioning                              |          |          |          |          |          |
| <b>42.</b> | Provision of bad loan debtors has been increasing by 5% over the last three years                   |          |          |          |          |          |

**Thank You and God Bless You**

## **Appendix II: List of Microfinance Institutions**

1. Premier credit limited
2. Ngao Microfinance
3. Select Microfinance
4. MicroAfrica
5. Hand in hand
6. Kukopesha
7. Argos
8. GetBucks
9. KWFT
10. SMEP
11. Faulu
12. Real People
13. Platinum Credit
14. Umoja Entrepreneur Credit
15. Rafiki DTM
16. Capep Kenya
17. Jitegemee
18. Musomi Microfinance