THE EFFECT OF CREDIT REFERENCING ON NON PERFORMING LOANS AMONG THE MICROFINANCE INSTITUTIONS IN KENYA

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DECLARATION

This research project is my original work and has not been submitted for any award in any other university.

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ACKNOWLEDGEMENT

DEDICATION

I dedicate this project to my siblings and my parents William Maroria and Monicah Kemunto who truly appreciate the impact education can bring to ones' life.

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LIST ABBREVIATIONS

AMFI - Association of Micro Financial Institution

AMFIK - Association of Micro Financial Institution of Kenya

ANOVA- Analysis of Variance

CIS - Credit Information Sharing

CRB- Credit Reference Bureau

CBAR- Central Bank Annual Report

DTM- Deposit Taking Microfinance

MFI- Micro Financial Institution

NGO- Nongovernmental Organization

NPL- Non-Performing Loans

SACCO- Saving and Credit Cooperative

USAID- United States Aid

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ABSTRACT

The primary function of financial institution is mobilizing deposits from surplus units to deficit units in the form of loan and advances to various sectors such as agricultural, industry, personal and governments. Thus, they are considered as an intermediary between the depositors and borrowers. However, in recent times, there have been an increased number of significant lender problems both at matured and emerging economies. Non-Performing loans have caused significant losses to the lenders. Credit Information Sharing mechanism was launched in Kenya to avert rising numbers in non- performing loans by sharing credit information that would reduce risks related to information asymmetry. This study was informed by objective that sought to find out the effect of credit referencing on non-performing loans among MFIs in Kenya. Descriptive research methodology was applied where by secondary data was collected from published financial statements of MFIs in Kenya between years 2006 to 2014 through descriptions and this was useful in identifying variables and hypothetical constructs that were critical in data analysis.

The researcher used t-test and regression analysis to analyse the data and establish the relationship between credit referencing and NPLs. The study found that CRBs had an effect on NPLs; there was an average reduction of 2% on the level of NPLs in the years after the introduction of CRBs i.e. 2011-2014 hence positive significant effect of CRBs on NPLs during the period of study. The more the credit information shared between MFIS and CRBs the fewer the number or and amount of non-performing loans. The research finding informs a policy recommendation to have MFIs management establish an efficient, secure and effective mechanism through which credit information can be shared between MFIs and CRBs. This mechanism must guarantee integrity and credibility of the information shared.

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CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Development and growth of any economy depends largely on a financial sector success. The primary function of financial institution is mobilizing deposits from surplus units to deficit units in the form of loan and advances to various sectors such as agricultural, industry, personal and governments. As noted by Wandera (2013) financial institutions play a vital role to emerging economies where most borrowers have no access to capital markets. Thus, they are considered as an intermediary between the depositors and borrowers. However, in recent times, there have been an increased number of significant bank problems both at matured and emerging economies Tendia et al (2012).

While there are several reasons that can lead to banking sectors performing poorly like inefficient management and low capital adequacy, nonperforming assets remain the single largest cause of irritation of the banking sectors Sontakke and Tiwari (2013). Deterioration in asset quality is much more serious problem of bank unless the mechanism exists to ensure the timely recognition of the problem. It is a common cause of bank failure. Poor asset quality leads to nonperforming loan that can seriously damage a banks' financial position having an adverse effect on banks operation Lafuente (2012). Some banking institutions like microfinances have become very cautious in extending loans due to non-performing assets Sontakke and Tiwari (2013).

Microfinance institutions generate their revenue from credit extended to low income individuals in the form of interest charged on the funds granted (Central Bank Annual Report, 2010). In many case the loan repayments may be uncertain since many of the loans extended end up being bad loans. The success of lending out credit depends on

the methodology and information applied to evaluate and to award the credit Ditcher (2003). To overcome the challenge of NPLs, Microfinance is required to monitor the behaviour of borrowers and get as much information as possible about borrowers' financial habits and credit worthiness before making any decision to advance credit Schreiner (2001). The idea of establishing credit referencing mechanism was conceived in order to enable lenders to monitor the behaviour of borrowers and determine credit worthiness and therefore reduce the loan default risk or bad loans Sullivan and Sheffrin (2003).

1.1.1 Credit Referencing

According to Experian (2012) a credit reference is information, the name of an individual, or the name of an organization that can provide details about an individual's past track record with credit. Credit rating agencies provide credit references for companies while credit bureaus provide credit references for individuals. In this respect Credit referencing assists in; sharing information on default among banks, eliminating corrupt borrowers – those with the aim of borrowing from different financial institutions with the aim of defaulting, provide commercial professional credit reference to prospective foreign investors and also to identify honest/credible borrowers based on known history and character.

Credit information sharing undoubtedly plays a pivotal role in reducing the information asymmetry that exists between lender and borrowers. While the lender get credit information on prospective borrower by credit referencing, a good credit record acts as an incentive for competitive pricing of loan facilities. Credit information sharing therefore rewards and promotes good credit track record. Further, credit sharing facilitates reduction in the cost of credit and appropriately analysing and

pricing risks. Lack of credit information has in the past led to lenders factoring a risk premium in the pricing of credit (CBK 2010).

Sullivan and Sheffrin (2003) define Credit Reference Bureau (CRB) as a company that collects information from various sources and provides consumer credit information on individual consumers for a variety of uses. Precisely CRB is an organization providing detailed information on a person's credit history, including information on their identity, credit accounts and loans, bankruptcies and late payments and recent inquiries. Other information shared include: proven frauds and forgeries; cheque kiting; false declarations and statements; receiverships, bankruptcies and liquidations; credit default and late payments; use of false securities; and misapplication of borrowed funds. The borrower could be individuals, businesses, companies, sole proprietors and Government entities. This helps lenders assess credit worthiness, the ability to pay back a loan, and can affect the interest rate and other terms of a loan. Prospective lenders access the information only when they have permissible reason as defined in law, to determine the borrower's creditworthiness. The individual information collected by CRBs is made available on request to customers of the credit bureau for the purposes of credit risk assessment, credit scoring for other purposes such as employment consideration or leasing an apartment.

Sullivan and Sheffrin (2003) argues that credit referencing plays three roles: first, enable lenders to lend to more and better risk clients (avoiding dead beats) and to determine better (and lower) the bad loan spread that they need to cover expected losses of credit to good payers. Second, credit referencing reduces the borrowing cost by forcing creditors to be more competitive for good borrowers. Those lower costs for good credit risks motivate those borrowers to be more careful with repayment. Third,

credit referencing reduce moral hazard by developing a credit culture awareness among the borrowers that if credit market becomes aware of their credit history it will rewards or punishes them accordingly. According to Millon and Thakor (1985) the logic underlying the existence of credit referencing is to solve the problem of the informative asymmetry between lenders and borrowers regarding the creditworthiness of the latter. Issuers with lower credit ratings pay higher interest rates embodying larger risk premiums than higher rated issuers or don't access credit at all.

1.1.2 Non-Preforming Loans

Legally, a credit facility is defined to mean a contractual promise between two parties where one party, the creditor agrees to provide a sum of money to a debtor, who in turn promises to return the said amount to the creditor either in one lump or in instalments over a specified period of time. The agreement may entail payments that are in the form of interest charges, processing fees, commissions, monitoring fees, among others are usually paid in addition to the principal sum lent which constitute the interest income to the lender/creditor Fofack (2005).

A loan /credit facility may be considered as performing if payments of both the principal and interest charges are up to date as agreed between the lender and the borrower. It can therefore be deduced that loans that are up to date in terms of principal and interest payment are described as performing loans and they constitute the healthy asset portfolio Fofack (2005). The term Non-Performing Loans is used interchangeably with Bad loans and impaired loans. These loans can as well be described as "problem loans/bad loans" Berger and De young (1997). In broad context, loans that are outstanding in both interest and principal for a period of time

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contrary to terms and conditions spelt out in the loan agreement are considered as non-performing loans.

Bloem and Gorter (2001) observes that whilst certain countries use quantitative criteria, e.g. the number of days the credit facility is overdue, others rely on qualitative criteria such as information about the customer's financial status and management judgement about future payments. Alton and Hazen (2001) described non-performing loans as loans that are ninety days or more past due or no longer accruing interest.

Quality credit risk assessment and risk management and creation of adequate provisions for bad and doubtful debts can reduce the banks credit risk. When the level of nonperforming assets is high, the assets provisions made are not adequate protection against default risk. A major threat to banking business is nonperforming assets. NPA represent bad loans, the borrowers of which failed to satisfy their repayment obligations. Michael et al (2006) emphasized that NPA in loan portfolio affect operational efficiency which in turn affects the profits of the bank, liquidity position and solvency position of banks. Batra (2003) noted that NPA also affect the psychology of bankers in respect of their disposition of funds towards credit delivery and credit allocation.

Eferakeya (2014) argues that a number of reasons have been identified as contributing to the spate of banking distress with one notable cause being the issue of bad loans. NDIC (1994) observed that one single, biggest contributor to the bad loans of many of the failed banks in Nigeria was insider trading and information asymmetry. This problem has spread to microfinance banks as well and is one of the contributing factors for closure of many microfinance Banks by regulatory authorities. It is undisputable fact that these institutions are generally subject to wide array of risks in

the course of their operations due to the nature of their businesses and clients' profile. These risks have increased, especially in recent times as most Microfinance Banks diversify their assets in the changing markets.

The high level of non-performing loans in the banking industry in Kenya has been a hindrance to economic stability. According to CBK bank supervision annual report (April 2012), the stock of NPLs expanded by 9.8% to Ksh 109.9 billion by March 31st, 2011 from Ksh 98.3 billion in 2010. In the year 2009, the NPLS were Kshs. 89.4 billion from Kshs. 78.6 billion in 2008. Bank Supervision Annual Report (2006) In 2003 and 2004, the average nonperforming loan to total loans for the industry was 25% and 24% respectively (Market Intelligence 2004). NPLs in Kenya stood at Kshs. 107.4 billion at the end of 2001. This represented 38% of total loan of Kshs. 281.7 billion in the banking sector. Oloo (2003).

When loans become non-performing, banks liquidity and its earnings are adversely affected. This can be compared with levels of NPLs in other countries. According to bank supervision report CBK (2001), comparing the ratio of nonperforming loans in Kenya of 33% to similar African economies as at the end of 2000, the ratio is much lower in these countries. For example in Zimbabwe it was (24%), Nigeria it was (11%) and South Africa it was (3%) which was the lowest among these African economies. According to Kalani and Waweru (2009), Kenya has experienced banking problems since 1986 culminating in major bank failures (37 failed banks as at 1998) following the crises of; 1986 - 1989, 1993/1994 and 1998, the crises were mainly attributed to NPLs. According to Mullei (2003), Daima bank was placed under statutory management for failing to meet the minimum core capitalization threshold as well as poor management of loan portfolios.

1.1.3 Effect of Credit Referencing on Non-Performing Loans

By exchanging information through credit reference bureaus about their customers, banks can improve their knowledge of applicants' characteristics and past behaviour. In principle, this reduction of informational asymmetries can reduce adverse selection problems in lending, as well as change borrowers' incentives to repay, both directly and by changing the competitiveness of the credit market. According to Prof. Ndung'u, governor Central Bank of Kenya during annual address in year 2008, noted that the realization of credit information sharing in the banking sector will not only bring good news to the banks and the banking sector but also to the borrowers and the economy as a whole in the sense that lenders will be in a position to access comprehensive credit data and will be able to price risk accordingly for both good and bad borrowers hence reducing their bad debt portfolios.

Cumulatively, a total of 2.3 million and 28,733 credit reports had been requested by banks and customers respectively from the two licensed CRBs as at 31st December 2012. The credit reports requested by banks stabilised during the year ended 31st December 2012 at 1,015,327 in comparison to 1,021,717 reports in the year ended 31st December 2011. On the other hand, credit report requests by customers increased by 305% from 5,607 in the year 2011 to 22,692 in the year 2012. The increased utilization of credit reports by banks are expected to reduce information search costs and subsequently offer competitive terms of borrowing to customers with a good credit track record and ultimately reduce the level of NPLs .(Bank Supervision Annual Report, 2012)

Paydaycash (2010) in their study on CRB information and credit score, argues that the need for establishment of CRB services in any financial system arises because of

information asymmetry between lenders and borrowers When financial institutions compete with each other for customers, multiple borrowing and over-indebtedness increases loan default unless the financial institutions have access to databases that capture relevant aspects of clients' borrowing behaviour. The CRB contributes significantly to reduction in the costs of screening loan applications by enabling the lender to sort out prospective borrowers who have defaulted with other lenders.

Research by Armstrong (2008) on tax and credit based on information from several countries across the globe show that the existence of credit registries is associated with increased lending volume, growth of consumer lending, improved access to financing and a more stable banking sector. Further, Hansen et al (2004), highlighted that many borrowers make a lot of effort to repay their loans, but do not get rewarded for it because this good repayment history is not available to the bank that they approach for new loans. Whenever borrowers fail to repay their loans, banks are forced to pass on the cost of defaults to other customers through increased interest rates and other fees. Put simply - good borrowers are paying for bad. Credit reporting allows banks to better distinguish between good and bad borrowers.

Angulin and Scapens (2000) in their study on transparency and accountability in resource allocation/funds among universities in UK indicated that it is difficult to have accurate information on the financial ability of prospective borrowers and even more difficult to have accurate information on their credit history. This makes it extremely difficult for the lenders to assess the credit worthiness of potential borrowers and their ability to pay the loans. Repository of borrower credit and financial habits can serve as an important source of credit information that can help predict borrower future

behaviour in meeting credit obligations. These can therefore help in reducing potential non-performing loans.

Djankov et al. (2005) studied the role of credit referencing as an input to credit scoring in private credit in 129 Countries. The result of their study indicates that credit bureaus enable lenders to lend to more and better risk clients (avoiding dead beats) and to determine better (and lower) the bad loan spread that they need to cover I expected losses of credit to good payers. Those lower costs for good credit risks motivate those borrowers to be more careful with repayment.

1.1.4 MFIs in Kenya

Kenya's financial sector, like in many developing countries especially in Africa, is dualistic, consisting of the formal and informal financial sectors coexisting side by side. Whereas the formal sector is growing, e.g., from 18.9% in 2006 to 32% in 2013, the informal still remains large with majority of the adult population accessing financial services from it. This dualistic financial structure does not serve the entire population in terms of the financial services required. Nearly one third remains without access to financial services formal or informal (Fin-Access 2009 Report). While another one third access their financial services through mobile banking, Sacco's, micro-finance and small round robin groups.

Lafourcade et al. (2005) defines Microfinance institution (MFI) as an organization, private, public or both, that supplies financial services to low-income clients, including consumers and self-employed, who traditionally lack access to traditional banking and related services. The MFI can be any of the following: NGOs, credit unions, cooperatives, private commercial banks, non-bank financial institutions and parts of state-owned banks. Lafourcade et al. (2005) put it that Microfinance is "the supply of

loans, savings, money transfers, insurance, and other financial services to low-income people". Munene and Guyo (2013) from Kenyan perspective define, Microfinance as the way of supplying loans and small credits to finance small projects to help the poor have an income through forming their own small scale business to earn their daily bread and better their living.

In 1999, the Association of Microfinance Institutions (AMFI) was registered under the Societies Act as an umbrella organization to represent the microfinance institutions operating in Kenya. The AMFI's activities are aimed at supporting the growth and development of MFIs, by promoting sustainable, efficient, and effective delivery of microfinance services. AMFI was instrumental in drafting and preparing the Microfinance Bill, which was passed and enacted into law in 2006 (USAID/Kenya, 2003).While Kenya has more than 250 organizations that practice some form of microfinance business, only 20- practice pure microfinance, of which 3 are deposit-taking and 17 are credit only. The remaining 230 MFIs combine microfinance with social welfare activities. According to the Microfinance Act, MFIs in Kenya are classified into three different tiers, with the first tier being deposit-taking institutions such as Microfinance Institutions, the second tier being credit only facilities, and the third tier being informal organizations supervised by an external agency other than the government (Association of Microfinance Institutions of Kenya, 2007)

In the past decades, Kenya financial sector has been saddled with huge non-performing loan port-folio especially in late 80s and 90s. Part of the burden was occasioned by "serial defaulters" and inadequate incentives to have a good credit history. This problem precipitated the licencing of credit references bureaus to help

avert this risk of information asymmetry and therefore inform lenders on the credit related decisions.

There are three credit reference bureaus licenced by the Central Bank of Kenya. These are; Credit info Credit Reference Bureau Limited, Credit Reference Bureau Africa Limited and Metropol Credit Reference Bureau Limited. July 2010 saw the launch of the Credit Information Sharing (CIS) mechanism (Central Bank of Kenya 2013). Since then, and as of 31st December 2013, a total of 3.5 million and 55,094 credit reports had been requested from the licensed Credit Reference Bureaus (CRBs). The credit reports requested by banks increased by 25.6 percent from 2012 to 2013. In 2013 there was a revision of the Credit Reference Bureau Regulations to incorporate amendments to the Banking Act 39 and the Microfinance Act, which allowed Commercial Banks and Microfinance Banks to share both positive and negative (full file) credit information and enhance the robustness of the existing CIS framework. The full file information sharing requirement took effect in 2014 (Central Bank of Kenya 2013,). It was believed by the Central Bank that "This will go a long way in providing a holistic assessment of an individual's or entity's credit history and credit worthiness which will in turn enable providers of credit to make accurate and credible decisions when determining credit applications" (Central Bank of Kenya 2013).

According to Ndungu (2009) Credit information sharing offers an opportunity to promote access to affordable credit to more Kenyans because information lowers the risk premium and search costs. In launching the CRB regulation charter, the governor of Central Bank of Kenya argued that credit information sharing would help facilitate the development of information capital hence the risk premium associated with information asymmetry and search costs would decline. Secondly, information capital

would change the current collateral technology while enabling borrowers build a track record that would be used in accessing credit. The third benefit he argued was to enhance information symmetry and support financial development. Further, he intimated that; the existing state of information asymmetry between borrowers and banks is a constraint to innovation leading to moral hazard problems from the borrowers and adverse selection from the banks. These two problems could punish the economy with low provision of credit. Fourth, in a segmented market, some segments remain untapped because banks do not have adequate information to price suitable products. In part this has also contributed to the high cost of credit. Borrowers have had to bear a "risk premium" because of this lack of information.

1.2 Research Problem

Nonperforming loans due to loan defaulters is one of the major causes of financial losses experienced by financial institutions. According to Basel 11 recommendations, (Bank Committee of Banking Supervision, 2005), financial institutions world over need to employ the best credit risk management practices in order to deal with non-performing loans which affect their financial performance. These non-performing loans are caused by bad borrowers who are not credit-worthy. Such a challenge make lending a challenging proposition in any setting particularly in an environment where legal/judicial enforcement is weak, where information about the ability and willingness to repay of applicants is not readily available and where many of the prospective lenders are from a poor household/ firms; many of whom have never before borrowed and cannot pledge collateral to guarantee repayment Conning and Udry (2007). Financial institutions therefore must find mechanisms that can collect

and store information concerning borrowers who are not only credit-worthy but also who have good credit histories.

Lending in Kenya is a direct juxtapose of the prevailing factors in developing countries enumerated above. Kenyans particularly those in the informal, small and medium enterprises who access financial services through microfinance have faced challenges in obtaining credit over the years. This has in part been attributed to the lack of physical collateral that banks have requested for to guarantee loans. Moreover getting accessing critical borrower information that lenders can use to rate the repayment ability of potential borrower has been a big challenge.

Despite recent growth in the Microfinance sector in Kenya, the sector is faced with challenges of loan repayment defaults by clients. The issuance of credit reference bureau licences by the Central Bank of Kenya to Credit-Info Credit Reference Bureau Limited, Credit Reference Bureau Africa Limited and Metropol Credit Reference Bureau Limited has been viewed as progress in the right direction especially in aiding borrower assessment. There has been a heightened general interest in the credit rating industry in the country. Many have begun asking who the industry's firms are; what they do; how they do it; and what the consequences of their actions would have on the players and consumers within the financial industry in Kenya.

Many research have been carried out on credit management and referencing. Kagio (2010) carried out a study on the Relationship between Loan Portfolio and the level of NPLs of Commercial Banks in Kenya. He found out that four main sectors were statistically significant in relation to the level of NPLs stocks with agriculture contributing most followed by transport, manufacturing and then individuals. Mucheke (2001) in his study of the determinants of Non-Performing Loans among Commercial

Banks concluded that the key causes of non-performing loans in the banking industry are three- pronged. These are factors specific to internal organization, factors relating to the macro- economic policies, which ultimately determine how the economy works, and finally those factors relating to the actual management of business.

Gerald (2011) studied the relationship between Credit Risk Assessment and the level of non-performing loans and found out that in reviewing the credit risk, credit analysts look at the ability of the applicant to take on more additional borrowing and the character which is assessed by the past record of the applicant in meeting their financial obligations. This information is obtained from Credit Reference Bureaus. In the study of the relationship between credit evaluation and non-performing loans, Kamau (2011) found out that: the client ability to repay the loan, market conditions and character of the applicant are the most critical aspects of credit evaluation. In his research to establish the effect of CRB on financial Industry in Ghana, Dankwah (2012) concludes that CRB have a positive effect on financial performance. Wandera and Kipyego (2013) did a research on effect of CRB on commercial banks performance and found out a positive relationship between asset performance and credit referencing.

Credit referencing since its inception in 2008 in Kenya has been used to aid the larger banks in making informed credit decisions. However, there is no evidence on any study to show the effects that credit referencing has on loan defaults among MFIs in Kenya. What are the effects of credit referencing on non-performing loans among microfinance institutions in Kenya?

1.3 Research Objective

To establish the effect of credit referencing on non-performing loans among microfinance institutions in Kenya.

1.4 Value of the Study

This study aims at identifying the role and contribution made by CRB and its effect on non-performing loans. Specifically, it sought to establish whether CRB has helped in reducing non-performing loans, effectively reducing risk identification/monitoring, reduced loan delinquency and enhanced microcredit extension in Kenya.

The findings of this study would be useful to the MFIs as it will help in formulating effective policies related to credit access in Kenya especially among the poor. The study would also be useful to the microcredit institutions as it would be insightful on how microfinance institutions can increase and control credit distribution to their clients.

The study contributes to literature and form part of empirical review and may inspire prospective researchers to explore more dimensions in the effect of credit referencing bureaus on credit access and would therefore form the basis for future research.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter brings together diverse streams of literature in finance that touches on credit management and specifically loan performance both locally and internationally. It will also take into account the Credit risk referencing practices as adopted by financial Banks. Theories that are applicable to decision making and financial management are discussed, moreover Credit referencing as it is applied in organizations locally and internationally, showing its goals, application and its effects on loan performance is reviewed.

2.2 Theoretical Review

To create an experiment that uncovers the effect of a given action, it is necessary to first construct an appropriate theoretical framework to place it in. The following theories are appropriate in setting literal framework for this research.

2.2.1 Information Asymmetry Theory

According to Jensen and Meckling (1976) Information asymmetry occurs when one group of participants has better or timely information than other groups. Typically, the source of the information asymmetry is the superior knowledge that one party have about some prospects or decision, while the other party may comprise the uninformed group. This may lead to uninformed group end up making uniformed decisions.

Information asymmetry under credit management happens when one party, borrower or lender has superior information. In case of potential loan default, the borrower has information on their ability to repay the loan amount, while the lender may be

disadvantaged. Credit referencing help bridge the gap created by information asymmetry by enabling lenders to access and assess the character of the borrower and there make informed lending decisions. Jensen and Meckling (1976).

2.2.2 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 properly, maybe because of lack of information or inability to do a proper assessment of the same, 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 and Goller (2001)

2.2.2 Decision Theory

Decision theory is the part of probability theory that is concerned with calculating the consequences of uncertain decisions. This can be applied to state the objectivity of a choice and to optimise decisions. Several aspects of decision theory exists, these may include the following under the lending decision: risk appetite, risk attitude, expected value, expected utility, loss aversion and information availability Kahneman and Tversky (1979).

The definition of risk appetite is the amount of risk, on a broad level; an entity is willing to accept in pursuit of value (COSO, 2004). Utility is used as a measurement of satisfaction. This can also be used in decision theory, as a means of expressing the

satisfaction of a particular choice. When indifference is reached, the satisfaction that the options carry is the same. People in general would rather take a decent sized certain gain than gamble for a potential large gain and in contrast are willing to take a gamble to avoid a certain loss Kahneman and Tversky (1979).

2.2.3 The Credit Theory

States that, "a sale and purchase is the exchange of a commodity for a credit". From this main theory springs the sub-theory that the value of credit or money does not depend on the value of any metal or metals, but on the right which the creditor acquires to 'payment,' that is to say, to satisfaction for the credit, and on the obligation of the debtor to 'pay' his debt, and conversely on the right of the debtor to release himself from his debt by the tender of an equivalent debt owed by the creditor, and the obligation of the creditor to accept this tender in satisfaction of his credit." Mitchell (1914).

In this sense Mitchell (1914) argued that it is a credit that redeems a debt. He further argues that payment is, in the end, the promise to "cancel our debt by an equivalent credit expressed in terms of our abstract, intangible standard."

2.2.4 Adverse Selection Theory

Stiglitz and Weiss (1981) originate the paper of adverse selection theory of credit markets. The theory rests on two main assumptions: that lenders cannot distinguish between borrowers of different degrees of risk, and that loan contacts are subjects to limits (i.e. if project returns are less than debt obligations, the borrower bears no responsibility to pay out of pocket). This analysis is restricted to involuntary default, i.e., it assumes that borrowers repay loans when they have the mean to do so. In a

world with simple debt contacts between risk-neutral borrowers and lenders, the presence of limited liability of borrowers imparts a preference for risk among borrowers, and a corresponding aversion to risk among lenders. This is because limited liability of borrowers implies that lenders bear all the downside risk. On the other hand, all returns above the loan repayment obligation accrue to borrowers. Raising interest rates then affects the profitability of low risk borrowers disproportionately, causing them to drop out of the application pool. This leads to an adverse compositional effect higher interest rates increase-the riskiness the average riskiness of the applicant pool at a very high Interest rates, the only applicant are borrowers who could potentially generate very high return (but presumably with small probability). Since lenders' preference over project risk run counter to those of borrowers, they may hold interest rates at levels below market-clearing and ration borrowers in order to achieve a better composition and lower risk in their portfolio. Excess demand in the credit market may persist even in the face of competition and flexible interest rates.

In the adverse selection theory, the interest rate may not raise enough to guarantee that all loan applicants secure credit, in times when loanable funds are limited. In general, the volume of credit and level of effort is less than the first-best. Borrowers who have greater wealth to put as collateral obtain cheaper credit, have incentives to work harder, and earn more income as a result. Existing asset inequalities within the borrowing class are projected and possibly magnified into the future by operation of the credit market, a phenomenon that may cause the persistence of poverty. By exchange information about their customers banks can improve their knowledge of applicants' characteristics and behaviour. In Principles, this reduction of informational asymmetries can reduce adverse selection problems in the lending, as well as change

borrowers' incentives to repay, both directly and by changing the competitiveness of the credit market. Information asymmetries are the main obstacle for MFIs to provide loans to clients Nawai (2010).

According to Silwal (2003) to minimize these problems financial institutions usually requires business proposal, borrower past credit information and collateral before approving the loan. MFIs also offer credit through group-based lending method to mitigate adverse selection and to replace the collateral requirement. Pagano and Jappelli (1993) show that information sharing reduces adverse selection by in improving MFI's information on credit applicants. In their model, each bank has private information about local credit applicants, but has no information about non-local applicants. If MFIs exchange information about their client's credit worthiness, they can assess also the quality of non-local credit seekers, and lend to them as safely as they do with clients. Information sharing can also create incentives for borrowers to perform in line with MFIs' interest. Klein (1982) shows that information sharing can motivate borrowers to repay loans, when the legal environment makes it difficult for banks to enforce credit contacts. In his model borrowers repay their loans because they know that defaulters will be blacklisted, reducing external finance in future

2.3 Determinants of Non –Performing Loans

Various research findings have highlighted the causes of non-performing loans. This research breaks them down into three parts: lender characteristics which entail internal credit management problems that can results to non-performing loans. Borrower characteristics i.e. borrower attributes, behaviour, credit cultures etc. environmental characteristics which entail, economic climate, financial markets etc.

2.3.1 Lender Characteristics

Berger and De Young (1997) indicate in their research on credit management that poor credit management is main causes of non-performing loans. They argue that managers in most banks or MFIs with the problem of nonperforming loans do not practice adequate loan underwriting, monitoring and control. Bindra (1998) argues that the true underlying cause of non-performing Loans is entirely of lenders' own making: poor risk mismanagement. This entails poor appraisal of loan requests, limited continuous monitoring of customer conditions and lack of proper follow up on how the loan has been utilized as there is a possibility that the loan may not be utilized for the intended purpose leading to project failures.

Rouse (1989) indicated in his work that problem loan can emanate from overdrawn account where there is no overdraft limit or overdraft taken on account which has not been actively 4 perated for some time and overdraft taken in excess of the reasonable operational limit. He also identified lack of good skills and judgment on the part of lenders as a possible cause of NPLs.

2.3.2 Borrower Characteristics

Sharma and Zeller (1997) undertook studies on Bangladesh and Madagascar microfinance borrowers, respectively, examining the impact of group characteristics, lender characteristics and community characteristics on loan default rates. They concluded from their research that borrower's characteristics (age and gender), business characteristics (business type) and loan characteristics (repayment period, repayment mode, and repayment amount) were among the factors that influenced loan default. The repayment behaviour among borrowers in the group-lending model was also investigated by Wydick (1999). The author investigated the impact of social ties,

group sanctions and peer monitoring on loan repayment behaviour among Guatemalan microfinance borrowers.

Loan default is closely related to corporate bankruptcy Lízal (2002). The causes of bankruptcy are problems in the fields of indebtedness, profitability, liquidity and solvency Altman (1968). Firms are more likely to default if they are highly indebted, less profitable, less liquid, and if the legal system does not create efficient incentives to repay the loans. Selected financial ratios related to these factors are commonly used to predict the probability of corporate bankruptcy in developed financial markets Altman (1968)

The use of owner's personal assets as collateral to secure a business enhances the creditor's claims of new assets Berger and Udell (1998). Owners using personal assets to secure the loans or lines are less likely to pursue unnecessary risky projects as there is more at stake; therefore, small businesses using owner collateral are less likely to default. Credit culture is another factor which has been identified as a cause of NPLs. Sometimes borrowers decide to apply for loan without thinking enough about the future and what else they need to buy with their income. When this occurs, a credit culture can develop where borrowers take out large loans not because it is financially wise to do so but because they see others do it. This can result in defaulted loans.

2.3.3 Environmental Characteristics

A World Bank policy research working paper on NPLs in Sub-Saharan Africa revealed that NPLs are caused by adverse economic shocks coupled with high cost of capital and low interest margins Fofack (2005). Goldstein and Turner (1996) stated " the accumulation of NPLs is generally attributable to a number of factors, including economic downturn, macroeconomic volatility, terms of trade deterioration, high

interest rate, excessive reliance on overly high-priced inter-bank borrowings, insider borrowing and moral hazard. Another factor that account for NPLs is sudden market changes as yet another factor which account for NPLs. Any sudden market change can change the loan market by affecting how much money people can take as loans and make payments. If the market suddenly changes and prices of items increase due to shortage or increased demand, borrowers will have less money to pay off their loans which can lead to loan default.

Bloem and Gorter (2001) asserted that NPLs may be caused by less predictable incidents such as the cost of petroleum products, prices of key exports, foreign exchange rates, or interest rate change abruptly. They also indicated that poor management, poor supervision, overoptimistic assessments of creditworthiness during economic booms and moral hazards resulting from generous government guarantees could also lead to loan default.

The capability of borrowers to repay their microcredit loans is an important aspect that requires proper analysis. Borrowers can either repay their loan or choose to default. Borrower defaults may be voluntary or involuntary. Involuntary defaults on loans could be caused by unexpected circumstances occurring in the borrower's business that affect their ability to repay the loan. Unexpected circumstances include lower business revenue generated, natural disasters and borrowers' illness. In contrast, voluntary default is related to morally hazardous behaviour by the borrower. In this category, the borrower has the ability to repay the loan but refuses to because of the low level of enforcement mechanisms used by the institution Brehanu and Fufa (2008).

Mucheke (2001) discuss the various factors responsible for non-performing loans in the financial industry. These are; factors specific to internal organization, factors relating to the macroeconomic policies, and finally those factors relating to the actual management of business.

2.4 Empirical Review

This section discusses the empirical evidence available both locally and internationally on non-performing loans and credit referencing.

2.4.1 International Evidence

In the adverse selection model developed by Pagano and Jappelli (1993) information sharing improves the pool of borrowers, reduces defaults and decreases interest rates. It can also lead to growth of lending. When banks are local monopolists, however, in some cases lending reduces, because the exchange of credit information increases the banks' possibility of price discrimination between safe and risky borrowers and the increase in lending to safe borrowers does not fully compensate for the reduction in that too risky types. When credit markets are competitive, lending activity is more likely to increase: competition limits the banks' ability to charge more interest from their customers and information sharing increases banking competition.

Angulin and Scapens (2000) in their study on information management and sharing indicated that it is difficult to have accurate information on the financial ability of prospective borrowers and even more difficult to have information on their credit history. This makes it extremely difficult for the lenders to assess the credit worthiness of potential borrowers and their ability to pay the loans.

An empirical study made by Ajayi (2002) on factors which influence default in mortgage finance institution with particular reference to the Federal Mortgage Bank of Nigeria using correlation and multiple regression analysis based on 128 samples (62.7% of the population) showed that default has largely been positively influenced by cost of construction, monthly repayment, loan to value ratio, market value of property, age of borrower and the annual income of borrower. The expected rental income from property, however, had a negative influence on default.

Vigano (2003) in employing a credit scoring model for development banks based on 118 sample borrowers, taking the case of Development Bank of Burkina Faso, found out that customer's characteristics, enterprise characteristics and customer's activity, profitability and revenue stability, asset value and composition, financial situation, loan use, bank-customer relationship, contractual conditions and credit risk control, quality of information and the customer's banking behaviour are identified to influence the bank's credit risk. The study revealed that being women, married, aged, proximity to the bank, use of better technology and being flexible to adjust to market changes, proper use of the loan, project diversification, frequency of loan maturity, collateral, personal guarantee and being a pre-existing depositor are negatively related to loan default risk. Loans in kind, long waiting period from application to disbursement and being younger firm, past default, existence of other loan are those positively related to loan default rate.

Hansen (2004) in their study on transparency and resource allocation in universities in UK highlighted that many borrowers make a lot of effort to repay their loans, but do not get rewarded for it because this good repayment history is not available to the bank that they approach for new loans. Whenever borrowers fail to repay their loans, banks

are forced to pass on the cost of defaults to other customers through increased interest rates and other fees. Put simply good borrowers are paying for bad loans. Credit reporting allows banks to better distinguish between good and bad borrowers.

Gestel and Baesens (2009) risk management is primarily concerned with reducing earnings volatility and avoiding large losses. In a proper risk management process, one needs to identify the risk, measure and quantify the risk and develop strategies to manage the risk. The highest concern in risk management is the most risky products. The prior concern for the risk management is those products that can cause the highest losses: high exposures with high default risk.

Oguntoyinbo (2011) in his study on Credit risk assessment of the microfinance Industry in Nigeria argues that a pragmatic microfinance approach to dealing with loan default involves engaging in group lending where loan is advanced to a group and the members are expected to act as enforcers of the repayments of the loans by the individual members, by means of group sanction if a member defaults in making repayments. Character referencing is where information of credibility of borrower is sought before lending decision is made. Another approach is continuous building up of customer's relationship where Loan officers could visit their clients regularly, not only to collect instalments, but also to relate closely to them in order to understand the challenges of their businesses and to assist them with their most pressing concerns. Credit history is part of character referencing and total borrower verification in order to establish realistic and workable loan arrangements.

Korieet et al. (2012) carried out a study on determinants of loan repayment of Microfinance Institutions in Southeast States of Nigeria The objective of the study was to analyse the loan repayment performance, institutional factors, and factors affecting

repayment rate of microfinance institutions (MFIs) in the South-east states of Nigeria. It was carried out in three states namely; Eboni, Enugu and Imo, out of the five southeast states. Using a cross-sectional data a multi-stage sampling technique was employed in selecting a total of 36 MFIs from the three states, that is, 12 MFIs per state. The three states were purposively selected based on the performance index of United Nations Development Programme in the selection of Micro start Projects, which made the final list in the Southeast states of Nigeria. For the sample size, four MFIs were chosen each from formal (commercial and development banks), semi-formal 24 NGO-MFIs and community banks. Results from the study, affirmed that the formal segment was more organized, better equipped with higher quality and well-motivated staff than the semi-formal and informal segments. The informal sector presented the best repayment picture of the three segments, followed by the semi-formal institutions. Outstanding among the determinants of loan repayment of microfinance institutions were outreach, shocks, training duration, loan size and credit officer's experience.

2.4.2 Local Evidence

For many years, Kenyan banks have had to contend with having incomplete information about borrowers that in turn translated to higher risk premiums on interest rates. Bank industry players also say lack of credit reference information leads to a risk of overpricing low risk borrowers and under-pricing high risk borrowers. The Central Bank of Kenya (CBK) issued licences for new credit reference bureaus to step up sharing of borrowers' information among banks. Perennial defaulters have been the cause of high lending rates Rukwaro (2001). Banks and other credit providers use credit reports obtained from credit bureaus as part of the lending decision process.

Credit bureaus enable lenders to lend to more and better risk clients and to determine better the bad loan spread that they need to cover expected losses of credit to good payers. Those lower costs for good credit risks motivate those borrowers to be more careful with repayment Ndungu (2009).

Ndwiga (2011) investigated the relationship between credit risk management practices and financial performance of microfinance situations in Kenya. The objective of the study was to examine the effects of credit risk management practices on financial performance of Microfinance Institutions in Kenya. Exploratory research design was chosen because it enabled the researcher to generalise the findings to a larger population. The population of this study comprised of all licensed Microfinance institutions in Kenya. The population of this study comprised all the 43 licensed Microfinance institutions in Kenya. Inferential statistic was be sued to establish the relationship between credit risk management practices and the financial performance of MFIs, performance of MFIs will be measured by their profitability . From the findings the study concludes that microfinance institutions in Kenya have adopted various the credit risk management practices which are credit risk management, risk monitoring, risk identification and Risk Analysis and Assessment. The study concluded that there is positive relationship between credit risk management practices and financial performance of Microfinance Institutions in Kenya.

 Warue (2012) investigated empirical analysis of external factors affecting loan delinquency Performance in MFIs in Kenya. The study used primary data. The study target population comprised 49 MFIs registered by Association of Microfinance Institutions of Kenya (AMFIK). A survey research design was used and a census of the 49 MFIs was taken. The data was collected through a self-developed structured

questionnaire and administered to MFIs loan officers for response. Multiple regression analysis was used to establish relationship between loan delinquency and microfinance institutions, self-help groups and external factors in MFIs in Kenya. The estimated regression coefficients and t-values were interpreted. The study found evidence on external factor was found positive and significantly ($\beta= 2.549$, t-value 2.069) related to loan delinquency performance in microfinance institutions in Kenya.

Sindani (2012) carried out a study on effectiveness of credit management system on Loan Performance, Empirical evidence from Micro Finance Sector in Meru, Kenya. The overall objective of the study was to assess the effectiveness of credit management systems on loan performance in microfinance institutions. The study adopted a descriptive survey design. This design investigates the current status and nature of the phenomena. Surveys of 70 credit officers in 14 microfinance institutions in Meru town were conducted. Specifically the study sought to establish the effect of credit terms, client appraisal, credit risk control measures and credit collection policies on loan performance. The respondents were the credit officers of the MFIs in Meru town. Collection policy was found to have a higher effect on loan repayment.

A study by Gitahi (2013) on the effect of credit reference bureau on the level of nonperforming loans in the commercial banks in Kenya done by analysing data from financial statements from these banks for a period of six years (2007 – 2012), by adopting an event study research design and use of regression analysis method. The target population consisted of all commercial banks in Kenya. The research found that credit reference bureaus have an effect on non-performing loans in that there was an average reduction of 4% on the level of non-performing loans, in the years after introduction of credit reference bureaus, that is, 2010-2012. The study also concluded

that there is an inverse relationship between the number of credit checks done by the credit reference bureaus and the level of non-performing loans.

2.5 Summary of the Literature Review

Credit referencing from the studies reviewed remains an important tool to reduce risk of defaults for banking institutions and it has been highlighted clearly that it is a good tool for managing credit risk in financial organizations. From the study, credit referencing leads to better credit market, lower default and interest rates, improved profitability, general financial performance and increased competitiveness within the industry. Credit reference bureaus have an effect on non-performing loans in that there was a noticeable reduction on the level of non-performing loans, in the years after introduction of credit reference bureaus. The studies reveal that many of the borrowers do not want to be listed by credit reference bureaus and could try as much as possible to service their credit facilities so as to protect their reputation.

Pagano and Jappelli (1993) show that information sharing reduces adverse selection by in improving MFI's information on credit applicants. In their model, each bank has private information about local credit applicants, but has no information about non-local applicants. If MFIs exchange information about their client's credit worthiness, they can assess also the quality of non-local credit seekers, and lend to them as safely as they do with clients. Information sharing can also create incentives for borrowers to perform in line with MFIs' interest. Klein (1982) shows that information sharing can motivate borrowers to repay loans, when the legal environment makes it difficult for banks to enforce credit contacts. In his model borrowers repay their loans because they know that defaulters will be blacklisted, reducing external finance in future

A number of studies discussed under empirical review above have centred on non-performing assets among main stream banking organizations in Kenya. None of these researches addresses the effects of credit information sharing on nonperforming loans among micro financial Institution in Kenya. This study therefore seeks to confront the effect of credit information sharing on nonperforming loans among MFIs. This paper attempts to fill this gap and foster research in this important area for credit information sharing.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter involves an outline for the collection, measurement and analysis of data. It identifies the research design, the target population, procedures and techniques that will be used in the collection, processing and analysis of data. It includes the following subsections; target population, sampling design, project research design, data collection procedures, data collection instruments and finally data analysis

3.2 Research design

According to McMillan and Schumaker (2001) a research design is a plan for selecting subjects, research sites and data collection procedures to answer the research questions. It is the conceptual framework within which research is conducted and constitutes the blueprint for the collection of data and the analysis thereof of the collected data.

This research followed a descriptive study. Primarily a descriptive study is concerned with determining the frequency with which something occurs or the relationship between variables. According to Cooper (2003), a descriptive study finds out, who, what, where, and how of a phenomenon. The aim in this research was to get detailed information regarding the effects of credit information sharing on nonperforming loans among MFIs in Kenya. This approach was appropriate for this study since the researcher intended to collect detailed information through descriptions and this was useful for identifying variables and hypothetical constructs.

3.2 Research Population

A research population is an aggregate or an entire group of people, events, or things under study Kothari (2004).

The population of interest in this study was the 47 MFI's (APPENDIX 1) that are members of the Association of Micro-finance Institutions of Kenya (AMFIK), as per the 2014 membership list (Appendix III). The target population was chosen because they have micro-finance as their core business. Feedback and usage of credit information was sort from the 3 registered credit reference bureaus in Kenya.

According to Cooper & Schindler (2007), a census is feasible when the population is small and necessary when the elements are quite different from each other. When the population is small and variable, any sample we draw may not be representatives of the population from which it is drawn.

The researcher had it appropriate to choose census method since the population was small.

3.3 Data Collection

Secondary data was used to analyse the level of non-performing loans. Data required for this research include; Number of credit references/checks done by an MFI, total amount loans advanced to customers, amount of non-performing loans, interest rates on loans and provision amount for bad loans by an MFI. The data on amount of loans advanced and non-performing loans amount in microfinance institutions was obtained from the annual financial statements for the six years from 2009 to 2014, as these financial statements are audited, they are considered to have an acceptable level of

reliability Neuman (1997). Data on interest rates applied during this period was obtained from internal reports and official documents like company brochure and relevant publications. These data was also obtained from the microfinance offices.

Other relevant data was obtained from various internal reports, other official documents and relevant publications such as the bank supervisions report. The credit referencing and checks data was collected from the three Credit Reference Bureaus registered with the central bank of Kenya i.e. Credit info Credit Reference Bureau Limited, Credit Reference Bureau Africa Limited and Metropol Credit Reference Bureau Limited.

3.4 Data Analysis

To meet the objective of the study, secondary data was collected from the financial statements from year 2009-2014. These statements available on each of the micro finance banks office or website provided the gross NPLs, the net loans and advances and the provisions for the loans and advances. This information can was also accessed from CBK supervision reports of the period under study.

To arrive at the gross loans and advances, the provisions was added back to the net loans and advances. The number of credit checks requested by the micro finance banks was collected from Credit Reference Bureau Africa Limited. Credit analysis team of the companies provided the information. The data was then analysed using regression analysis and t-tests. Microsoft excel spreadsheet was used to perform the calculation.

The result for the two tests was then presented in tables and graphs and interpreted in order to draw conclusions and recommendations. Further analysis of quantitative data

was done by narrative analysis. This was tabulated by taking an average level of non-performing loans for of each sample micro finance bank for the year 2009-2014

NPL data relating to the period 2012-2014 (after introduction of CRBs) was collected and analysed against the normal return to give the change in level of NPLs.

3.5.1 Analytical Model

Analysis to show the relationship between the variables;

$$Y = \alpha + \beta_1 x_1 + \beta_2 x_2 + \varepsilon$$

Where:

Y-Level of Non-Performing Loans as measured by the NPL ratio (amount of NPL to gross loan advanced)

x_1- Credit reference records as measured by ratio of number of reports exchanged by MFIs and CRBs to number of loans advanced from advanced by MFIs

x_2- Interest rate measured by the interest rate charged on the loan advanced to consumers

α- Constant Term: The average non-performing loans holding all other dependent variables constant

β_i= Beta coefficients measures the changes in dependent variable attributed to the changes in independent variables x_i

ε- Error term explain the variability of factors under study.

3.5.2 Test of Significance

Analysis of Variance (ANOVA) was used to test the significance of the model, the constant and coefficient of the model.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents analysis and findings of the study as set out in the research methodology of the effect of Credit Referencing on the non-performing loans among the micro financial institutions in Kenya based on the following research question: what is effect of credit referencing on non- performing loans among micro financial institutions in Kenya? This chapter analyses the variables involved in the study and estimates of the model presented in the previous chapter.

4.2 Data Presentation

Data was collected from the published financial statements and supervisory report of 11 MFIs accredited by Central Bank of Kenya to carry out deposit taking and credit advancing. This was out of an initial target of 47 MFIs registered with AMFI. 36 MFIs left out are not accredited by CBK and therefore it was not possible to validate their data. Secondly these MFIs have not been requesting nor depositing customer's credit data with the three registered credit reference bureau. Data for this study was quantitative and statistical techniques were used to analyse the data.

The data was processed in Excel and then presented in tables, graphs with explanation given in prose. The findings are presented and interpreted according to the following study objective: to establish the effect of credit reference bureaus on non- performing loans among micro financial institutions in Kenya

4.3 Descriptive Statistics

Analysis of the ratio of net non-performing loans to the total loans and advances was done between the years 2006-2014. The average levels of NPLs between the years 2006-2010 was taken to illustrate the normal level of NPls before introduction of credit referencing among MFIs. The average ratio of NPLs in 2011-2014 was taken to give the change in the NPL levels after introduction of CRB in MFIs. The graph below depicts the trend in loan and advances between the year 2006 and 2014:

Figure 4.2: Trend net loans and advances
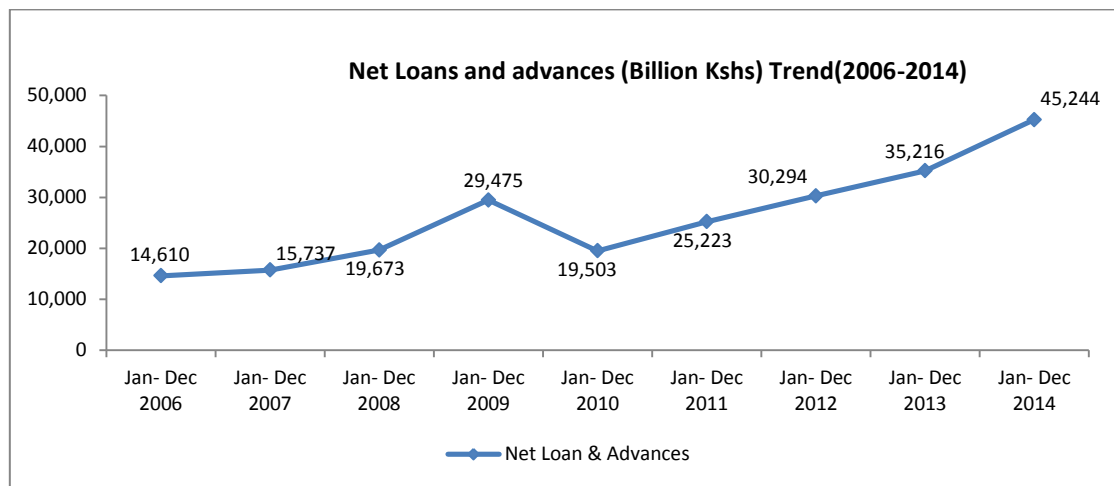
Source: Research findings

The level of loan and advances to customers by MFIs increased steadily between the years 2006 to 2009. Amount of loans advanced dropped significantly in the year 2010 to 2012 . This was attributed to inflation and high interest rates. Loan advances have grown exponentially from the year 2011 to 2014 as shown on figure 1 above.

Figure 4.2: Trend in Non-performing loans
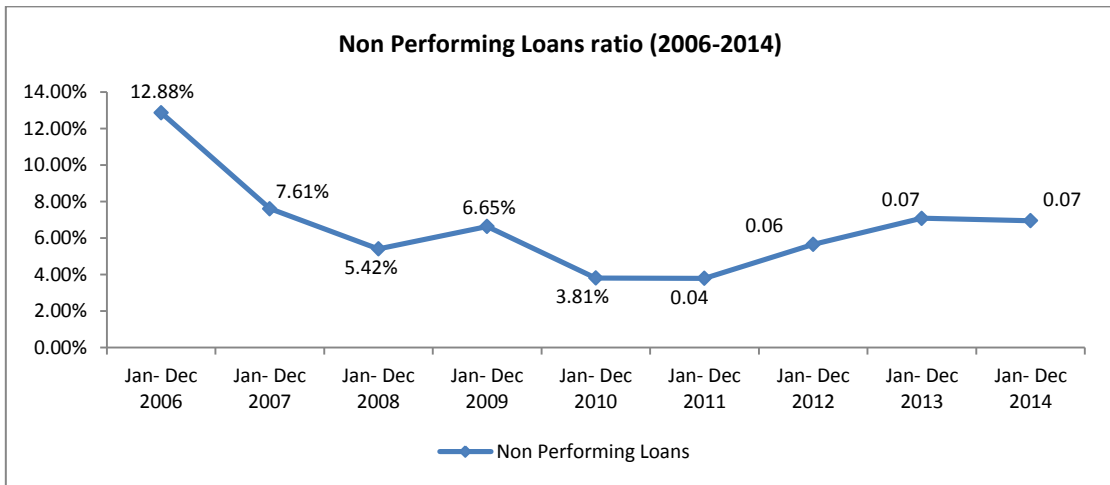
Source: Research findings

From the chart figure 2 and 3 the ratio of non-performing loans to net loan advances is highest in the year 2006 and 2007 at 12% and 13% respectively. In 2008 Banks and micro financial institutions were advised to improve their credit management mechanism, so as to manage better the high number of non-performing loans. This helped improve the ratio to an average of 5.8% between the years 2008 and 2010. Between 2011 and 2014 the average ratio of non-performing loans to net loan and advances further improved to 3%. This can be attributed to introduction of credit referencing among micro financial institutions whereby MFIs would request for potential borrower credit history and share the same with Credit Reference Bureaus CRBs.

Figure 4.3: Ratio of non-performing loans to total loans
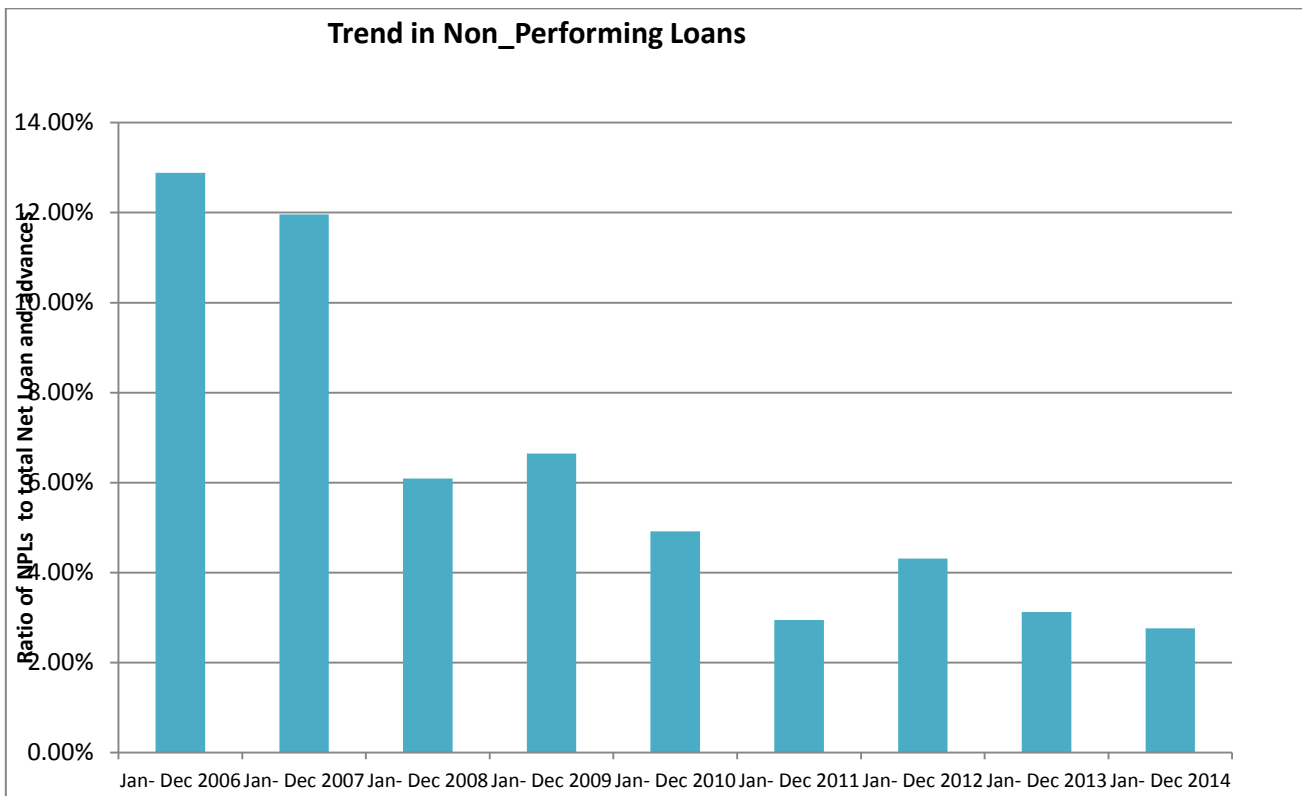
Source: Research findings

From figure 4 below, the number of credit reports requested has increased by over 500% between the year 2010 and 2011. The number remained relatively constant between 2011 and 2012. This is explained by high interest rates during this period that discouraged potential borrowers.

Figure 4.4: Number of credit reports shared since inception
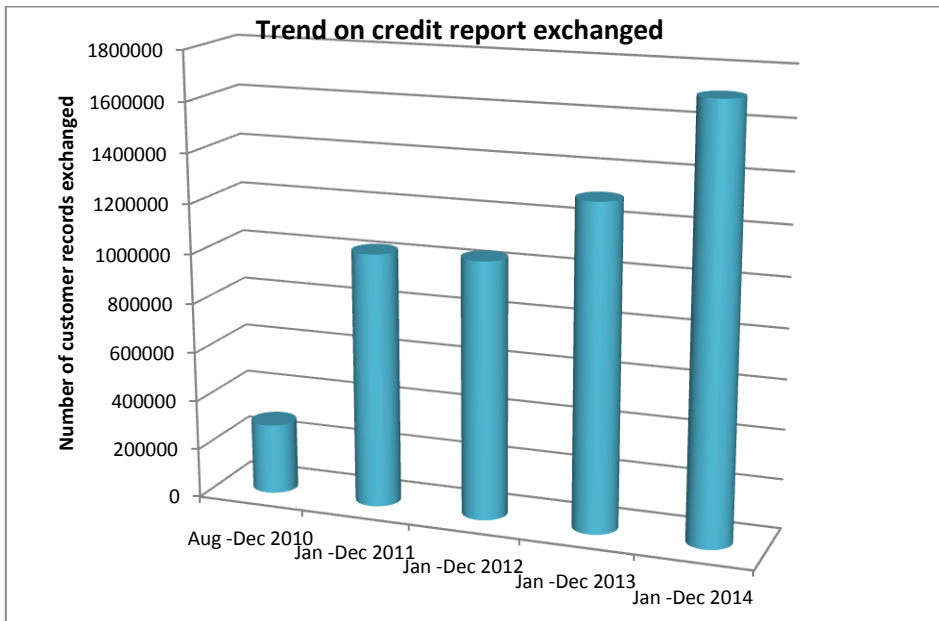
Source: Research findings

4.4 Inferential Statistics

Inferential statistical analysis infers properties about a population: this includes testing hypotheses and deriving estimates. The population is assumed to be larger than the observed data set; in other words, the observed data is assumed to be sampled from a larger population.

4.4.1 Analysis of Variance

Table 4.1 –Anova Table interest rates

	df	SS	MS	F	Significance F
Regression	1	0.000218101	0.000218101	4.642741	0.100173958
Residual	3	0.000140931	4.69769E-05		
Total	4	0.000359032			

Source of data: Research findings.

From the ANOVA table significance F and P values are over 0.05 and 0.01 respectively implying that the model is not statistically significant in predicting how interest rates affects non-performing Loans among MFIs.

Regression analysis on credit referencing can be interpreted at two levels. First, from the ANOVA table where the significance value is 0.053 i.e. relatively about 0.05 thus the model is statistically significant in predicting how credit referencing affects non-performing Loans among MFIs.

Table 4.2 –Anova Table (credit referencing)

ANOVA					
	SS	*MS*	*F*	*Significance F*	
Regression	0.00130374	0.001304	14.3680787	0.05298784	
Residual	9.0739E-06	9.074E-06			
Total	0.000131282				

Source of data: Research findings.

There are two parts to interpret the regression output:

To determine whether or not the overall regression model is significant, we consider the ANOVA table. Since the Sig F or P value is a small number i.e. ".001" which is actually lower than level of Significance of 0.053.The linear model significantly fits the data.

Table 4.3 –Coefficient Table (credit referencing)

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.4390163	0.00992653	4.422654	0.0143920	0.3128878	0.565145	0.312888	0.5651449
0.1833	-0.0659163	0.00549913	11.98669	0.0529878	-0.0135789	0.0039567	0.135789	0.0039566

Source of data: Research findings.

The second part of the regression output to be interpreted is the Coefficients table "Sig.". Here two values are given. One is the significance of the Constant (intercept) in

the regression equation. It merely tells us that this value is (0.439) significantly different to zero. If some micro-finance were to score zero on the credit Checks we would predict an average score of 0.439 for the Non-Performing loans.

The second "Sig." value gives us the significance of the predictor of the dependent variable (Non-Performing Loans). Because the overall model is significant, the "Sig." value is at 0.053 level of significance. We therefore conclude that credit checks are significant in predicting the Non-performing loans among MFIs.

4.4.2 Regression Analysis

Regression analysis was performed to determine the relationship between credit referencing and non-performing loans among micro financial institutions in Kenya.

Table 4.4 –Regression Statistics

Regression Statistics	
Multiple R	0.94833
R Square	0.89920
Adjusted R Square	0.87038
Standard Error	0.00156
Observations	4

Source: Research findings

The adjusted R square also known as Coefficient of determination. It measures the proportion of change in the dependent variable; in this case Non- performing Loan, can be explained by the independent variable, the credit referencing. The adjusted R square is at 87% implying that 87% of the non-performing loans among MFIs can be attributed to the credit referencing. Therefore, further research should be conducted to investigate the other factors (13%) that affect non-performing loans of microfinance institutions in Kenya.

Applying regression statics on interest rates and its effects on NPLs, we have the table below.

Table 4.5 –Regression Statistics interest rates

Regression Statistics	
Multiple R	0.579404039
R Square	0.33570904
Adjusted R Square	0.276627541
Standard Error	0.004853968
Observations	5

Source of data: Research findings.

From the table the adjusted R square is 27% meaning only 27% of NPLs can be attributed to the level of interest rates charged.

To analyse the effect of credit referencing on NPLs we apply the regression equation as below:

$Y = \beta 0 + \beta 1 x 1 + \beta 2 x 2 + \varepsilon$

$Y = 0.43901636 - 0.065916385 x 1 - 0.0281815 x 2 + \varepsilon$

NPL levels= 0.4390-6.5*10-3 Number of checks

$\beta 0 = 0.4390$

$\beta 1 = -6.5*10-3$

$\beta 2 = 0.158405$

4.5 Interpretation of Findings

The regression model shows that without the presence of credit referencing and interest rates the effect from other factors affecting the level of NPLs can be measured by ($\beta 0$) which in this case is given by 0.4390. The model also indicates to lesser extent that interest rates also affect NPL levels. Otherwise the effect of the credit referencing on NPLs in micro financial institutions in Kenya can be measured by ($\beta 1$) which in this case is 6.5*10-3. This implies that the presence of credit referencing has a substantial effect on the level of NPLs in micro-financial institutions in Kenya. The model indicates that there exists an inverse relationship between credit referencing and level of NPLs among MFIs. These results are consistent with previous research done to establish the effect of credit referencing on the non-performing loans

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

Summary of findings, and conclusions drawn from the research findings are presented in this chapter. Research project recommendations, recommendations for further studies and research project limitations are also highlighted in this chapter.

5.2 Summary

The research project objective was to establish the effect of credit reference bureaus on the nonperforming loans among micro financial institutions in Kenya. From the research data analysis, CRB have a notable effect on the levels of NPLs among MFIs. The study showed that with introduction of CRB for credit referencing among MFI in 2010 helped slow down the levels of NPLs. Availability of information about the borrowers by the banks does surely reduce the level of NPLs. This is also evidenced by the findings of Paydaycash (2010) that the information exchange from multiple sources improves the precision of the signal about the quality of the credit seeker and as a result, the default rate reduces.

In 2012 however the study showed that the level of NPLs was not affected by the CRBs, reason being there was a rise in inflation and the level of interest rates in the first half in 2012 led to an increase in the level of NPLs. The finding also confirms the believe as explained by CBK governor while launching the CRB that credit referencing would go a long way in providing a holistic assessment of an individual's or entity's credit history and credit worthiness which will in turn enable providers of credit to make accurate and credible decisions when determining credit applications" (Central Bank of Kenya 2013, p. 37) this eventually will enhance earlier discovery of

dead loans. According to previous studies by Barron and Staten (2008) good borrowers with low risk would be given more attractive prices, stimulating credit demand but this did not happen in Kenyan commercial banks and the interest rates affected both the good and bad borrowers leading to an increase in the level of NPLs

5.3 Conclusion

The study concluded that indeed credit referencing have an effect on the nonperforming loans among micro financial institutions in Kenya. The main objective of passing of the Banking Act passed in 2006 that made it mandatory for the Deposit Protection Fund and institutions licensed under the Banking Act to share information on nonperforming loans through credit reference bureaus licensed by the Central Bank of Kenya and the establishment of a Credit Referencing Bureaus in Kenya in 2008 represents a significant undertaking and from the study carried out, this has added value to the lending institutions including micro financial institutions.

In addition, the study also concludes that lenders must base their lending decisions on relevant information about their borrowers from CRB reports on information sharing systems which is key in credit risk management due to information asymmetry. This will result in better risk management for lenders, reduced NPLs and improved profitability.

The study also concludes that Credit information sharing undoubtedly plays a pivotal role in reducing the information asymmetry that exists between lender and borrowers. While the lender get credit information on prospective borrower by credit referencing, a good credit record acts as an incentive for competitive pricing of loan facilities. Credit information sharing therefore rewards and promotes good credit track record. Further, credit sharing facilitates reduction in the cost of credit and appropriately

analysing and pricing risks. Lack of credit information has in the past led to lenders factoring a risk premium in the pricing of credit

The study further concludes that, other factors lead to bad loans among micro-financial institutions i.e. high interest rates that make it hard for some to pay and diversion of funds by borrowers. These causes make many borrowers not to honour their obligations hence leading to many nonperforming loans.

5.4 Limitations of the Study

All lending institutions require an information sharing mechanisms to avert information asymmetry related lending risk. Not all MFIs engage in information sharing with CRBs. This therefore limited the scope of the study to the few that share and request for information.

Only secondary data collected from annual reports and statements was used in the analysis. Getting any data that was not available online was and available on other economic reports at CBK was a big challenge. The fact that the study only used secondary data limited the scope of the study. Primary data may have been collected by way of questionnaires to determine factors like the loan underwriting processes, target market/ industrial where loans are advanced effect on NPLs. It would have been important as well to establish institution opinion and view on relevance of credit information.

 The time period for collection of data was limited and this posed a challenge. Data for this study was collected within a period of one month and given the depth of the study, one month was not adequate. Due to the limited time period, secondary data from the financial statements for the period before the introduction of CRBs was collected for only three years, 2007 and 2010. This limited the scope of the study.

5.5 Policy Recommendation

The research finding informs that MFIs management establish a mechanism of credit sharing whereby there is an efficient flow of credit information on any customer between an MFI and CRB. This would help facility credit management and avert dangers of information asymmetry.

The researcher would also recommend that the other sectors in the industry who advance credit, may make use of credit information sharing by asking their customers, employees and suppliers for their credit reports which are readily available from the CRBs before transacting, employing or doing business with them as this will go a long way in enhancing a culture of credit worthiness.

There is need to educate and create awareness on the part of the public on the importance of CRBs. This will also enhance a culture of honest and responsibility. This will also help eliminate the negative notion that CRBs are there to dent credibility by black listing customers. The public should be aware of the fact that a good credit record can attract attractive interest rates.

Proper Regulatory framework should be in place that emphasis on confidentiality and integrity of information handled by CRBs and also places stringent restrictions on the use and application of such information. Banks and CRBs should not share information with unauthorized third parties. The regulations need to provide for stringent penalties for such breaches by CRBs

5.5 Suggestions for Further Research

Further studies can be done on other factors that affect NPLs levels among MFIs in Kenya other than credit referencing and interest rates.

Studies can also be done to establish level of usage of credit referencing among non-registered MFIs, SACCO and its impact on profitability.

Does credit referencing affect return on assets and share prices among MFIs? Further studies can confirm this.

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APPENDICES

Appendix I: List of Microfinance Institutions in Kenya as at 31st Dec 2014

1	AAR Credit Services	29	Micro Africa Limited
2	ADOK TIMO	30	Microensure Advisory Services
3	Agakhan First Microfinance Agency	31	Molyn Credit Limited
4	Assistance limited	32	Muramati SACCO Society Ltd
5	Biashara Factors Limited 31 MESPT	33	Musoni Micro- Finance
6	BIMAS	34	One Africa Capital Limited
7	Blue Limited	35	Opportunity International
8	Canyon Rural Credit Limited	36	Programme (PAWDEP)
9	Chartis Insurance sacco	37	Rafiki Deposit Taking Microfinance Ltd
10	CIC Insurance 36 Oikocredit	38	Remu DTM Limited
11	ECLOF Kenya	39	Rupia Limited
12	Elite Microfinance	40	Select Management Services Limited
13	Faulu Kenya DTM Limited	41	SISDO
14	Fusion Capital Ltd	42	SMEP DTM Limited
15	Greenland Fedha Limited	43	Swiss Contact
16	Jamii Bora Bank	44	Taifa Option Microfinance
17	Jitegemea Credit Scheme	45	U & I Microfinance Limited
18	Jitegemee Trust Limited	46	Yehu Microfinance Trust
19	Juhudi Kilimo Company Limited	47	Youth Initiatives - Kenya (YIK)
20	KADET 50 Uwezo DTM Limited		
21	Kenya Entrepreneur Empowerment Foundation		
22	Kenya Post Office Savings Bank		
23	Kenya Women Finance Trust		
24	Kenya Women Holding		
25	Kilimo Faida		
26	K-Rep Development Agency		
27	K-Rep Bank Ltd		
28	Mega Microfinance Limited		

Sourced from the Association of Micro financial Institutions of Kenya (AMFIK) website

Appendix II: Number of Credit reports requested since August 2010

PERIOD	BANKS AND MFBS		CUSTOMERS	
	No of Credit Report Requests	Annual % Change	Number of Request	Annual % Change
August -December	284722		434	
January -December 2011	1021717	259%	5607	1192%
January -December 2012	1015327	-1%	22692	305%
January -December 2013	1275522	26%	26361	16%
January -December 2014	1674707	31%	33442	27%
Total	**5271995**		**88536**	

Source: Research findings

Appendix III: Trends in total loans advanced and Non-performing Loans

Year	Net Loan and Advances (Kshs M)	% Change	Total Non-Performing loans (Kshs M)	% Non-performing loans to total net loan.
Jan- Dec 2006	14,610		1882	12.88%
Jan- Dec 2007	15,737	7.16%	1882	11.96%
Jan- Dec 2008	19,673	20.01%	1198	6.09%
Jan- Dec 2009	29,475	33.26%	1959	6.65%
Jan- Dec 2010	19,503	-51.13%	959	4.92%
Jan- Dec 2011	25,223	22.68%	744	2.95%
Jan- Dec 2012	30,294	16.74%	1306	4.31%
Jan- Dec 2013	35,216	13.98%	1101	3.13%
Jan- Dec 2014	39,184	10.13%	1082	2.76%

Source: Research findings

Appendix IV: t-Test: Paired Two Sample for Means

t-Test: Paired Two Sample for Means		
	NPLs 2007-2010	NPLs 2011-2014
Mean	0.074030361	0.032871311
Variance	0.000974492	4.88214E-05
Observations	4	4
Pearson Correlation	-0.222151128	
Hypothesized Mean Difference	0	
df	3	
t Stat	2.459476887	
P(T<=t) one-tail	0.045454898	
t Critical one-tail	2.353363435	
P(T<=t) two-tail	0.090909796	
t Critical two-tail	3.182446305	

Source: Research findings