DETERMINANTS OF MICRO CREDIT PERFORMANCE IN MICROFINANCES IN KENYA

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DECLARATION

This Research Project is my Original Work and has not been submitted for a Degree in any other University or Institution.

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ACKNOWLEDGEMENT

DEDICATION

This work is dedicated to my children Collins and Aaron, my beloved wife, Maryanne, my niece, Ruth Mbithe and to my beloved late Parents.

ABSTRACT

Efficient debt management determines the cash flow and the success of the day-to-day operations of the business. Poor credit management leads to late payment to creditors and other stakeholders in the supply chain. This study focused on the determinants of micro credit performane in kenya. The objective of this study was to establish factors that determine micro credit performance in Kenya.The researcher surveyed loan accounts of a micro finace institution. The researcher took micro loan accounts at Small and Micro Enterprises programme- Deposit Taking Microfinance (SMEP- DTM) at Machakos branch in Machakos County. This study focused on all types of loans by the micro finance for the period running from 1ST July 2009 to 30 June 2012. During this period the microfinance advanced a total of 7000 loans. The researcher used stratified sampling to get a sample size of 180 borrowers. The data was gathered using questionnaires and analyzed using Logit model in the Statistical Package for Social Sciences (SPSS). Determinants of micro credit performance include the age of the borrower, whether the client had been a customer or not , whether is a man or woman, the level of education and others. Earlier studies indicate women borrowers were better repayers than men. The level of education improves repayment rate for which the reaseacher does not expect it to change for micro credit perfomance in Kenya. The study found the default rate to be 46.36 per cent. This percentage confirms findings of the public development finance institutions which recorded similar trends. The NEF Mbewu Fund, which is aimed at developing small businesses, found that 67 per cent of loan repayments were not paid back on time during the 2009 financial year. Timm (2011) noted the default rate as a "sickness" affecting South African SMEs and the findings of this research validate Tinam's concerns about small business's poor payment rate.

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OPERATIONAL DEFINITION OF TERMS

Microcredit: Is the extension of very small loans(microloans) to impoverished borrowers who typically lack collateral, steady employment and a verifiable credit history.

Microfinance: A type of banking service that is provided to unemployed or low-income individuals or groups who would otherwise have no other means of gaining financial services.

Linear Probability Models : Are econometric models in which the dependent variable is a probability between zero and one.

Premium interest

The premium attached to the interest rate that is above the rate on the loan that poses the smallest risk.

ABBREVIATIONS AND ACRONYMNS

CBK: Central Bank of Kenya.

GDP: Gross Domestic Product.

GoK: The Government of Kenya.

KUSCCO: Kenya Union of Savings and Credit Cooperatives

KWFT: Kenya Women Finance Trust.

MFAs :   Micro Finance Agencies.

MFIs: Micro finance Institutions.

NGOs: Non-Governmental Organizations.

NPLs: Non-Performance of Loans.

PD: Probability of default.

PLs: Performance of loans.

PROBDEF2: Probability of Default 2

R.O.A: Return on Assets

SACCOS: Savings and Credit Co-operative Societies.

SHGs: Self Help Groups.

SMEP- DTM: Small and Micro Enterprises Programme- Deposit Taking
                      Microfinance.

SPSS: Statistical Package for Social Sciences.

UN: United Nations Organization.

INTRODUCTION

1.1 Background of the study

''Micro credit, or micro finance banking bringing credit, savings and other essential financial services within the reach of millions of people who are too poor to be served by regular banks, in most cases because they are unable to offer sufficient collateral. In general, banks are for people with money, not for people without.'' (Gert van Maanen, 2004). ''Microcredit fits best to those with entrepreneurial capability and possibility. This translates to those poor who work in growing economies, and who can undertake activities that generate weekly stable incomes. For those who do not qualify because they are extremely poor like destitute and homeless, almost every micro-credit institution have special safety programs that offer basic subsistence and, later endeavors to graduate this members in their microfinance program making ordinary micro-credits available. Unleashing of energy and creativity in each human being is the answer to poverty.'' (Muhammad Yunus, 2003)

1.1.1 Role of micro credit to the economy

Microfinance has been used by NGOs, the UN and other agencies intensively in the development debate the last few decades. It builds on that financial services are needed to make investments in physical and human capital, to smooth consumption and to overcome unexpected shocks. ''Microfinance can be seen as a solution to include on a large-scale previously excluded poorer groups without access to capital into the financial system so that they may "rise out of poverty" by themselves'' (BancoSol, 2006). Developing countries seem to be characterized by a dual financial system with an informal and a formal financial sector where the lower-income clientele

tends to be left out of the latter. 'The lack of access to the formal financial sector is a result of lack of the collateral required due to risks involved in lending but also due to high costs involved in small-scale financial services and weak legal enforcement'(Ray, 1998). This clientele is instead served by informal financial intermediaries that have an informational advantage over formal financial intermediaries on these clients. However, the informal financial intermediaries have inadequate savings facilities and limited funds. Also, they seem to attach a much higher cost of lending for the client than the formal financial sector. Microfinance uses the informational advantage of the informal financial sector to increase the availability and to improve financial services for the lower-income level.

Previous economic growth literature shows that there is a link between the financial sector and economic growth. Disagreement still seems to remain on the directionality. That is, whether financial markets develop as a consequence of economic growth or whether finance leads growth. However studies show that it is fair to assume that the two are interlinked. ''At the macro level, the financial system may exhibit differing effects due to policies and different institutional build-up. Furthermore, financial markets seem to be imperfect. Poverty (development) gaps are found where both economic growth and financial markets may remain at an undesirable equilibrium'' (Berthemeley and Varoudakis, 1996, Bencivenga and Smith, 1998). In poor countries, with negative or stagnated economic growth, financial markets may not develop and due to the under-developed or inexistent financial markets, growth is further deteriorated

With this inter-linkage of financial development and economic growth in mind, studies have concluded that micro-finance or micro credit as a way of dealing with the micro-level imperfections in financial markets, imperfections that hold back investment opportunities at

lower levels of income, and how/or if micro-finance could contribute to large-scale income-generation and financial sector development.

"Global" donors, policymakers, development consultants, non-government organizations, business associations and academics, Recent studies by: Jespersen (2005) and Gates and Leuschner (2007) Cook (2001), Liedholm (2001), emphasized the importance of this sector to the growth of the economy globally. ''Whether in developed or developing countries, small- and medium-scale firms play an important role in the process of industrialization and economic growth. Apart from increasing per capita income and output, they create employment opportunities, enhance regional economic balance through industrial dispersal and generally promote effective resource utilization considered critical to the engineering of economic development and growth'' (ibid).

1.1.2 Importance of Micro credit

''The advocates of microcredit argue that microcredit can help to substantially reduce poverty'' (Littlefield et al 2003; Dunford 2006). Access to credit can contribute to a long-lasting increase in income by means of a rise in investments in income generating activities and to a possible diversification of sources of income; it can contribute to an accumulation of assets; it can reduce the vulnerability due to illness, drought and crop failures, and it can contribute to a better education, health and housing of the borrower. In addition, microcredit can contribute to an improvement of the social and economic situation of women. Finally, microfinance may have positive spillover effects such that its impact surpasses the economic and social improvement of the borrower.

1.1.3 Factors that hinder the performance of micro credit

There are various factors affecting loan performance. The financial management skills of loanees

have a direct impact on performance of Loans (PLs). ''The loanees existing financial management skills, level of education and nature of business is likely to influence the performance of loans. The loanees who fail to use the borrowed funds strictly for the intended purpose are likely to become loan defaulters. An injection of loans into wrong investment projects from the intended ones especially by semi-literate loanees leads to depletion of the funds. At the same time failure of the borrowers to put into consideration the advice given by the lenders or mutual firms leads to mismanagement of funds and thus resulting in eventual defaulting of the loans repayment'' (Jimenez & Saurina, 2003).

Equally, initial loan appraisals would determine the level of performance of loans. This involves the use of false information or means to acquire loans from lending institutions. These might also include giving or accepting collaterals whose values have been overstated and impaired. ''Some borrowers who might falsify their business past performance records in order to acquire loans would not be able to repay comfortably later. The initial loan appraisal therefore, included the core five ingredients of loan appraisal. This comprises of tests on accuracy, honesty, collaterals, capacity and cash flow to determine loanee's credit worthiness and there likelihood chances of loans default'' (Saurina et al, 2000).

Variables such as prices of farm produce, government policies and infrastructure influence the performance of loans indirectly. The internal management practice of the firm does not have direct intervention strategies of these variables because they are external to the firm. ''Increase in prices occasioned especially by rising inflation lead to high costs of production in agriculture rendering loans repayment an uphill task. At the same time government legislation for example increasing taxation on farm inputs and exports had the final consequence of reduced profitability of ventures that may lead to non-performance of loans. The lack of a reliable and sustainable

physical infrastructures in addition to unpredictable weather patterns normally create an imbalance in the way of doing business especially in loans repayment planning by loanees'' (Taschereau,1997)**.**

1.1.4Status of micro credit in Kenya

As an industry, micro finance is a relatively new phenomenon in Kenya, with a few agencies starting about 20 or so years ago but the sector gaining the status of an industry only in the last 10 years. The Government of Kenya (GoK) has indirectly provided a boost to the micro- finance sector. During 1992-1994, the GoK has been implementing a Structural Adjustment Program which has resulted in the liberalization of the economy. To counter the possible initial negative social impacts of the liberalization process, the Government of Kenya identified areas and project needing external donor support, including small-scale and micro enterprises. Lack of access to credit was considered a major bottleneck for entrepreneurial development.

''The international donor community responded generously. Micro-finance agencies in particular client-based ones became donor darlings. A conservative estimate is that the micro-finance industry has received a total of USD 80 million. Kenya Rural Enterprise Programme (K-REP) can be considered the pioneer of NGO microfinance in Kenya. The experimental and financing activities of K-REP have had far-reaching consequences, influencing the outreach modalities and outreach of quite some other NGO-MFAs including those of SMEP-DTM on micro-finance programmes in Kenya.We currently have over forty MFIs in Kenya with seventeen funders. Kenyan microfinance has shown resiliency despite local droughts and high inflation rates that afflicted the nation in 2008 and 2009. With the Kenyan government and the Central Bank of Kenya emphasizing financial access as a key to modernizing the economy, the sector has been strengthened by progressive policies and innovative approaches to delivering financial services.

A large deposit base, along with the existence of well-developed MFIs, have allowed financial and operational expenses to remain relatively low and have led to some of the highest profitability measures in the Sub-Saharan Africa region. Innovative forms of microfinance and progressive government policies have helped to make Kenya's microfinance sector one of the most developed in Sub-Saharan Africa. Leading contributors to this dynamics are M-Pesa's success in mobile banking, the passing of the Finance Act of 2010 allowing for agent banking, and the development of effective credit bureaus throughout the country. The ability to maintain low financial and operational expense ratios has made Kenyan microfinance fairly profitable with an ROA of over 5% in 2012. High default levels do however raise concerns about the riskiness of the overall portfolio, and whether profitability can be sustained over time''. (Premium Market Intelligence Summary, January 2013)

1.2 Statement of the Problem

Determinants of micro credit performance in microfinances in Kenya had not been studied inspite the increasing growth of this sector. ''Banks had largely termed the poor parties as unbankable as they lacked collateral .Microfinance through self-help groups (SHGs) hadproved this notion wrong and hadshowed that even the poor were bankable. About 80-95 per cent recovery rate had been reported by many investigators from different parts of India, where the (SHG) model was utilized'' (Chauhan and Verma, 2001; Madheswaran and Dharmadhikary, 2001; Puhazhendi and Badatya, 2002). The Kenyan situation was in contrast to India with the Ministry of Finance, reporting recovery rates of only 50%. This may be as a result of individual lending in Micro finance institutions especially those of a deposit taking nature. This seemingly low recovery rate had dampened poverty reduction and financial inclusion efforts, both objectives of the broader micro finance movement.

Many studies had tried to examine loan repayment performance of many socio-economic groups. Empirical work by Arene (1993) revealed income, farm size, age of farmers, farming experience and level of education of farmers contributed positively to the credit worthiness of farmers. Oladeebo and Oladeebo (2008) examined the determinants of loan repayment among smallholder farmers in Ogbomoso Agricultural Zone in Nigeria. Kiraka, Kobia and Katwalo (2013) undertook a study of the performance of the Women Enterprise Fund where their research concern was in regard to growth and innovation. Kanyugi (2011) studied the impact of micro-finance credit on the financial performance of SMEs in Kenya.

As can be seen, though the studies were domiciled within the area of micro finance, their focus was different from the area that the researcher proposes to concentrate on. Arene (1993) and Oladeebo and Oladeebo (2008) studies focused on the agricultural sector, while Kiraka, Kobia and Katwalo (2013) studied a section of the population; women. Kanyugi (2011), studied on the performance of the Small and Medium Enterprises (SMEs). However, despite the importance of repayment rates on the sustainability of financial institutions, and poverty reduction, within the Kenyan context, there is a definite knowledge gap within the area of micro credit performance. Thus this study sought to bridge the knowledge gap that exists as to the determinants of micro credit performance in microfinances in kenya.

1.3 Objectives of the Study

The general objective this study was:

To establish the determinants of micro credit performance in micro finances in Kenya.

The specific objectives of this study were:

i.   To establish whether interest rate and size of the loan determine micro credit

performance at SMEP.

ii. To establish whether loan period determines micro credit performance at SMEP.

iii. To establish whether the age, marital status, gender and family circumstances of the borrower determine micro credit performance at SMEP.

iv. To establish whether location of the borrower determines micro credit performance at SMEP.

v. To establish whether sector of business determines micro credit performance at SMEP.

1.4 Research Questions

The researcher sought to answer the following questions:

i. Does the rate of interest and size of the loan determine micro credit performance?

ii. Does age, marital status, gender and family circumstances of the borrower determine micro credit performance?

iii. Does loan period determine micro credit performance?

Iv Does location of the borrower determine micro credit performance?

v. Does the sector of business determine micro credit performance?

1.5 Significance of the Study

Credit had been cited as one of the major constraints to the operation and growth in the republic of Kenya. It was therefore important that data on factors contributing to micro credit performance in Kenya microfinances was to be generated by this study. Such data was important to policy makers as well as other stakeholders in formal and informal sector development policy framework in the country.

The study was beneficial to the SMEP-DTM in particular in identifying and assessing credit worthy clients hence reduced if not eliminated non-performance of loans and realize its profit

motive. This was because the study was to help in addressing the key drivers contributing to micro credit performance in Kenyan microfinances. It was the process of analyzing the attributes to good fund seekers. The approval of loans must be put under serious scrutiny in order that only deserving and prioritized cases are processed for disbursements. The efficiency with which these cases are handled need to be paramount as time, uncertainty and cost aspects must be taken into account.

The study findings was to be helpful to the prospective loan seekers in making an optimal decision whereby they were able to choose a source of finance with minimum cost and optimum benefits both in the short run and long run period. Thus their choice of either MFI loan or commercial bank loan had been a knowledgeable decision unlike the scenario whereby many people were ignorant about the cost element of loan capital specifically.

The study was also to assist the government in achieving the national millennium goal if the measures recommended by the study were adopted for the sustainability and future survival of institutions such as SMEP-DTM and other MFIs which is crucial for employment creation and poverty alleviation.

The study was to further provide background information to other researchers or scholars who would like to investigate more on factors leading to performance of loans and determine other factors affecting institution loaning systems apart from factors that impact loans performance.

1.6   Limitations of the Study
The study was conducted with the following limitations in mind:-

i.   Some respondents   regarded financial matters as confidential and sensitive and hence their responses were not adequate and accurate.

ii.   The researcher may was not able to acces all the targeted respondents as they were   busy with their clients.

iii.   The areas covered by the Machakos office, Mwala, Kangundo, Tala, Kathiani, Machakos town and Kalama   were mostly rural and could not give a true   picture of the generalisation made.

1.7 The scope of the study

The study focused on the determinants of micro credit performance in Kenyan microfinances evidence from SMEP-DTM in Machakos county. It focused on all types of loans by the micro finance for the period 1ST July 2009 to   30 June 2012

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter deals with the literature review of the study. It gives a general review of the literature review, SME financing, loan performance and Loan default. It also deals with models used in evaluating loan applications, factors affecting loan repayments, research gaps, theoretical and conceptual framework of the study, among others.

2.2 General literature review

Financial service management is characterized by a number of aspects that endorses it as an important facet in any organization. It requires a great attention and monitoring due to the risks attached to services or products offered by various institutions. The variables involved in determining or evaluating those entitled or eligible to finances are basically future estimates. A lot of uncertainty is associated with the future cash flows, tax rates and economic life span of projects, inflation rate and selling price of products. The problem associated with credit appraisal is the difficulty in gauging the true position that future date. Certain variables are hard to determine yet they are those that cannot be measured with reasonable certainty. It is therefore a question of limiting the default rate or maintaining bad debts at levels that will not affect the overall objective of the lending institution. Paul (1980), was once the richest man in the world observed that "If you lend the bank $100 million that is your problem," if you owe it $100 million that turns to be the bank's problem". To be sure, lending to businesses, governments and individuals is one of the most important services banks and financial institutions provide while their closest competitors provide the riskiest.

Over the last few years the literature that examines non-performance of loans has expanded in line with the interest afforded to understanding the factors responsible for financial vulnerability. This situation may be attributed to the fact that impaired assets plays a critical role in financial vulnerability as evidenced by the strong association between non-performance of loans and banking and financial crises in Argentina, East Asia and Sub-Saharan African Countries during the 1990s. In this section we review the existing literature so as to formulate a theoretical framework to investigate the determinants of non-performance micro credit.

The literature also provides evidence of a positive relationship between the inflation rate and non-performance of loans. Fofack (2005), for instance, shows that ''inflationary pressures contribute to the high level of impaired loans in a number of Sub-Saharan African countries with flexible exchange rate regime''. According to this author, inflation is responsible for the rapid erosion of commercial banks' equity and consequently higher credit risk in the banking sectors of these African countries.

Jimenez and Saurina (2005) used logit model for analyzing the determinants of the probability of default (PD) of bank loans in terms of variables such as collateral, type of lender and bank-borrower relationship while controlling for the other explanatory variables such as size of loan, size of borrower, maturity structure of loans and currency composition of loans. Their empirical results suggested that collateralized loans had a higher PD, loans granted by savings banks were riskier and a close bank-borrower relationship had a positive effect on the willingness to take more risk. At the same time, size of bank loan had a negative effect on default while maturity term of loans i.e. short-term loans of less than one year maturity had a significant positive effect on default.

Bloem and Gorter (2001) suggested that a more or less predictable level of non-performing loans though it may vary slightly from year to year is caused by an inevitable number of wrong economic decisions by individuals and plain bad luck (inclement weather, unexpected price changes for certain products, etc.). Under such circumstances, the holders of loans can make an allowance for a normal share of non-performance in the form of bad loan provisions, or they may spread the risk by taking out insurance. Enterprises may well be able to pass a large portion of these costs to customers in the form of higher prices. For instance, the interest margin applied by financial institutions will include a premium for the risk of non-performance on granted loans.

KUSCCO, 2007 Magazine documented that ''an Economic Recovery Strategy of Wealth and Employment creation was developed by the government in 2003 to address the challenges of alleviating poverty which had risen from 38%` in 1990 to 56% of the population in 2001.The MFIs were identified as important vehicles through which these goals could be achieved leading to creation''. According to new Government survey 46% of the population lived below the poverty line in 2006 which means a reduction of 10% in poverty levels, six years ago. The government attached great importance to the MFI sector so that it can play a leading role in the economic recovery of the country by creating a conducive environment for growth of the MFIs.

''Most sectors of the economy have undergone comprehensive policy and legal reforms to revitalize their performance through liberalization and privatization. SMEs are currently undergoing a turbulent period trying to adjust to the liberalization of the economy. The reforms in the financial sector have led to stabilization of interest rates charged by banks and other institutions, hence encouraging more borrowing for developmental purposes. The clients have now gained a lot of confidence in bank loans and thus are lured to their offer of unsecured loans

as the interest rate charged was almost the same as that of SACCOs of 12% p.a.'' (Jeremiah & Joseph, 2007). ''SMEs have been faced with weak marketing structures, poor management and leadership capacity and weak capital base. As a result SMEs financial performance has been declining and a majority of them have not been able to compete effectively'' (National Development Plan 2002-2008 p. 38, Government of Kenya).

2.2.1 SME financing

''Even though the role MFIs is clear in the SME business arena, lending to SME remains a laborious and daunting activity as many factors influence the sustainability of these ventures and their loan repayment behavior. The main challenge is getting information about the business'' (López, 2007:2). Furthermore, owners of SME business may lack accounting skills, leading to improper accounting procedures. ''Small business owners often mix their personal Finances with business finances which complicates the assessment of affordability and is confusing to the assessor'' (Tsaih, Liu, Liu & Lien, 2004).

In the banking industry, information remains a crucial input in the process of lending. Banks are confronted with information asymmetry problems because of borrowers' informational opacity. In agro financing, collateral is a particular challenge in developing countries. According to Coco (2000), ''collateral can limit asymmetries in project evaluations, riskiness of the borrower and the cost associated with continuous monitoring and evaluation of projects''. Moral hazard problems are also reduced if the business owner puts his/her heart into the business in the form of collateral. This necessarily implies a cost to borrowers if they do not make their best effort to make the business a success. The borrower may be willing to divert funds towards private use or extract the whole surplus from the project but when collateral requirements are in place this

perverse incentive is diminished. Barbosa and Moraes (2004:7) argued that, '' firms pledging high collateral tend to attract lower interest rates from lenders, resulting in more advantageous financial leverage''. This suggests that the availability of collateral will impact on access to debt finance for new agro businesses. Collateral pledging and proper management of information asymmetry, adverse selection and moral hazard can play a critical role in reducing probability of default in SMEs.

Formal lending institutions in Kenya require audit reports and annual financial statements and the information obtained from the financial statements acts as an indicator of the borrower's future prospects and ability to service a loan facility. Meanwhile financial statements, plus discussions with prospective borrowers, are the main sources of information for lenders. For this reason banks and other creditors prefer, demand and use this financial information in their credit decision-making process.

2.2.2 Loans Performance

Effective performance of loans is a product of performing loans. A performing loan is loan which is not in default, or is not about to be, with a reasonable expectation that the loan will not enter default even though it has not technically defaulted yet is a performing loan. As a general rule, banks and other financial institutions like to avoid non-performing loans, because there is a risk that they will not be able to recover the principal left on the loan, let alone the interest which has accrued. ''Loan policies define the type of loans offered, loan terms, interest rate policies, loan ceiling and concentration limits. The lending policies provide guidelines for eligibility, information requirements, security and collateral requirements and terms of review'' (Rose, 2002). ''Adhering to credit policies ensure that regulatory standards are met and profitability is promoted in the organization. Therefore it helps the organization to move towards a profitable loan portfolio, controlling its risk exposure and satisfying regulatory requirements'' (Rose,

2002). Any exceptions to the policy should be fully documented and reasons for it listed. ''The borrower's credit worthiness is the ability of a customer to pay out the credit as and when due with a comfortable margin of error. Thus the borrower must not be a minor and supportive document must be provided such as a copy of resolution of borrowing company or pay-slip of an employee'' (Rose, 2002; Garman & Forgue, 1997).

Lenders view credit backed by collateral as more secure. ''If the assets are technologically obsolete, they will have limited value as collateral due to difficulty of finding a buyer in case of loan default'' (Garman & Forgue, 1997). Credit risk management should include strict delinquency monitoring, loan-loss provision and collection procedures. IMF edition, (2000) describes non-performing loan as that ''loan that is in default or close to default. Many loans become non-performing after being in default for three months, but depend on the contract terms. A loan is non-performing when payments of interest are past due by 90 days or more or at least 90 days of interest payments have been refinanced or delayed by agreement or payments are less than 90 days overdue, but there are other good reasons to doubt that payments will not be made in full''.

The management of credit is a primary concern for the policy makers, development finance institutions, banks, non-bank credit providers, managers and owners of those microenterprises because it has a direct impact on the success, creditworthiness and growth of entrepreneurial ventures. Efficient debt management determines the cash flow and the success of the day-to-day operations of the business. Poor credit management leads to late payment to creditors and other stakeholders in the supply chain. The evolution of small businesses which are seen as a tool for economic development has heralded a great interest in their growth.

Many studies have tried to examine loan repayment performance of many socio-economic

groups. Empirical work by Arene (1993) revealed income, farm size, age of farmers, farming experience and level of education of farmers contributed positively to the credit worthiness of farmers. Oladeebo and Oladeebo (2008) examined the determinants of loan repayment among smallholder farmers in Ogbomoso Agricultural Zone in Nigeria.

In that context, the long-term financial sustainability of microcredit operations deserves particular attention. In the more successful schemes, repayment rates are high, but this is not so with many operations that does not have a high profile. In the absence of long-term sustainability, microcredit operations become a welfare or charity operation. While the latter have their own place in development in some circumstances, they should not characterize microcredit institutions.

2.2.3Loan default

Liu and Zhu (2006) argued that credit is granted on faith and defined credit as "the ability of a business or individual to obtain economic value on faith, in return for an expected future payment". Since trust is built on faith to commit and meet agreed financial obligations, trust, faith, respect and sometimes relationships are compromised if those obligations are not met. Not meeting the obligations is considered as default. Prior to 2004, when the Basel II accord was endorsed, financial institutions could adopt their own strategic definitions of default. Client classifications such as good payers, poor payers and bad payers were commonly used and a payment in arrears for more than three months was considered to be a default in the retail context. ''The fact that every organization could use any definition meant different scoring systems, risk measures and risk management practices could be used'' (Gestel & Baesens, 2009:38).

Different authors and researchers have different definitions of default. Moody's, a global rating agency, defined default as, ''any missed or delayed payment of interest and/or principal''. Standard and poor, another global rating agency, defined corporate default as "…a default is recorded upon the first occurrence of a payment default on any financial obligation, rated or unrated". According to Chorafas (2007:149), Basel II defines default as "four different events or a combination of them; ninety days past due, write down, placement on internal non-accrual list and/or outright bankruptcy".

According to the Basel Committee 2006 (Saita, 2007:94), "a default is considered to have occurred with regard to a particular obligor when either or both of the two following events take place:

> ''The bank considers that the obligor is unlikely to pay its credit obligations to the banking group in full, without recourse by the bank to actions such as realizing security (if held).
>
> The obligor is past due more than 90 days on any material obligation to the banking group.''

Simply put, a loan is considered to be in default as soon as payment is missed; a loan default occurs when a borrower fails to meet a principal or interest payment of a loan, unless arrangements are made to pay at a later date than previously agreed upon.

The undesirable trend of increasing rates of default proves costly to all parties concerned in the process of borrowing and lending. Non-payment equally impacts the lender and the borrower

negatively. On the one hand, the lender loses the part of the principal loan disbursed and earnings in the form of interest. On the other hand, the borrower faces a bleak future in obtaining credit due to lower credit rating and an unhealthy lifestyle primarily caused by high financial stress levels.

2.2.4.0 Models used in evaluating loan applications

The primary stages of granting a loan generally take place at the level of branches and may be motivated by their sales personnel; ultimate decision-making is undertaken in regional centers and credit divisions (the latter normally sited at the head offices of the respective banks). Nevertheless, local branches and the sales staff therein effectively complement certain of the centralized functions. In regard to handling loan applications, it is admitted by most banks that their branches serve as more than mere "delivery agents" or channels through which client services are delivered: instead, certain "back office" functions are effectively devolved to branch level. ''Still, such functions such as loan approval, risk analysis, the on-going monitoring of credit exposure, and the process of loan recovery remain centralized'' (Levin, 2005).Banks, MFIs included make use of various models. The following discussion is about models that are mainly used to access loan applications.

2.2.4.1 Credit Scoring Model

The most widely used credit measure to predict future loan performance is credit scoring models. Feldman (1997) explained credit scoring as "the process of assigning a single quantitative measure, or score, to potential borrower representing an estimate of the borrower's future loan performance". The models are statistical in nature such as logistical regression analysis or discriminant analysis and more recently neural networks and Support Vector Machine (SVM).

Credit scoring methods are used to estimate the likelihood of default based on historical data on loan performance and characteristics of the borrower. In the small business environment, if the customer statistics produce a score above the cut-off score, the application is considered for further assessments by specialized small business units and then later progresses to the small business credit department for approval or otherwise. The basic assumption is that there exists a metric which can distinguish between good and bad credits and segregate them into two separate distributions.

Credit scoring has its limitations. Feldman (1997) considered the credit scoring models used in Agro lending to be more intricate than those used in consumer lending and have a propensity of placing substantial weight on factors related to the financial history of the business owner. Some studies (Frame, Srinivasan&Woosley, 2001; Berger & Frame, 2005) have found that credit scoring is associated with an increase in overall lending because of the inclusion of more marginal classes of borrowers.

2.2.4.2 Accounting-based Model

Accounting ratios are also widely used by banks in a bid to limit adverse selection and moral hazard problems in loan advancements. The methodology of the accounting-based approach is based on Multiple Discriminant Analysis (MDA) and logistic models that are the most useful in accounting based variables for classifying company default.

Khorasgani (2009) argued that, ''although there are numerous drawbacks to using accounting ratio based models in predicting defaults, financial ratios derived from balance sheets and profit and- loss accounts are regarded as good predictors of default. In addition, liquidity and activity are the most crucial factors in predicting a microcredit default, as well as the positive effect of age and size variables on an Agro default prediction''.

2.2.4.3 Survival-based Credit Scoring Model

Some banks take the process to another level by making use of the survival analysis method to measure response or time of an occurrence of an event. Luoma and Laitinen (1991) pointed out that the aim of the survival analysis method is to measure the link between illustrative variables and survival. Investigating the timing when customers are likely to go "bad" is important for effective credit management policies. The bank can manage and monitor profitability of clients to the bank over a customer's lifetime. It has been shown previously by Narain (1992:109) and Banasik et al. (1999) that survival analysis can be useful to estimate default and repayment.

2.2.5.0 Factors affecting loan repayments

Various studies have identified numerous factors impacting on the management of credit. Interest in factors affecting loan repayments led some researchers more than three decades ago to develop the theoretical contributions that remain undisputed in this modern era. The stance of Stiglitz and Weiss (1981 cited by Godquin, 2004), reveals ''that problems of adverse selection, information asymmetry and moral hazard impose the greatest limitations on productive credit granting, is still valid''. Numerous factors have been identified in various studies as having an impact on credit management and loan repayment. Several factors such as interest rates, age, marital status, location and numbers of dependants are said to impact on the likelihood of default (Lodha, 2011). Some of these factors are discussed below.

2.2.5.1 Interest rate in credit management

The pioneering work of Stiglitz and Weiss (1981 cited by Godquin, 2004) marked the beginning of attempts at explanations of credit rationing in credit markets. They asserted that "... interest

rates charged by a credit institution are seen as having a dual role of sorting potential borrowers (leading to adverse selection), and affecting the actions of borrowers (leading to the incentive effect)".Weinberg (2006) advocated that interest charged and the amount of debt are the two main factors affecting repayment obligations. Some banks use the interest rates that an individual is willing to pay as a screening device to identify borrowers with a high probability of repayment. This may be dangerous since high risk-takers are the worst rate payers, in the process affecting default by borrowers on loans.

2.2.5.2 Gender in credit management

Studies endorse gender as a variable that could influence credit management practices. Halkias (2008) pointed out that there is still a significant and systematic gap between gender in relation to business ownership and entrepreneurial involvement. Evans and Winston (2008) concurred with Halkias (ibid) that single, college-educated women managed their credit more prudently than both men in general and married women, in a study conducted in Ghana. A number of important gender issues are recognized in terms of investigating successful SME development in Africa.

2.2.5.3 Loan size in credit management

Godquin (2004) reported that, ''both age and size of loans have an inverse relationship to repayment performance''. This concept is related to a study done by Pang (1991 cited by Chong, 2010) who pointed out that the main determinants of repayment obligations are the interest charged and the amount of debt. Furthermore, ''loans that are too big also lead to repayment problems, dissatisfaction and high dropouts'' (Hietalahti& Linden, 2006).

2.2.5.4 Loan period in credit management

The loan period or term of a loan is usually classified as either short-term or long-term. A short-term loan in bank parlance is one that is repayable within a period of one year. A long-term loan on the other hand, is any loan with payment terms extending beyond one year. ''Although the relationship between loan maturity and borrower risk has been addressed in some theoretical models'' (Ortiz-Molina &Penas, 2004), ''there is very little observed research that tests these theoretical models in the context of bank lending to small firms'' (Berger & Frame, 2005). Bragg (2010:597) asserted that "the short time frame reduces the risk of non-repayment to the bank, which can be reasonably certain that the business's fortunes will not decline so far within such a short time period that it cannot repay the loan, while the bank will also be protected from long-term variations in the interest rate".

2.2.5.5 Location in loan repayment

Some studies consider various factors such as location as a determinant of business success and the performance of loan repayment (Kang, Heshmati& Choi, 2005). McPherson (1995 cited by Rogerson, 2000:689) attested to this in a study conducted about key determinants of the survival rate of SMEs. The results indicated that businesses in commercial districts exhibit high success in comparison with the high failure rate experienced by home-based enterprises. In addition, soft information like distance between the borrower and the lender is important. A larger borrower lender distance is associated with higher default risks because distance interferes with information collection.

2.2.5.6 Age and family circumstances of an entrepreneur in credit management

Cromie (1991), in a study of male and female owners of young firms, found that businesses

managed by young people experience general management problems such as lack of people management and accounting skills. Age and the family circumstances of owners can negatively or positively affect the performance of the business. Small business owners with a supportive, experienced family structure tend to be able to cope with the pressure of running the business. Godquin (2004) reported that both age and size of loan have an inverse relationship to repayment performance. Athmer and De Vletter (2006) added that 70 per cent of defaulters in their study samples experienced a family problem such as death or health circumstances.

2.2.5.7 Sector of business in credit management

Mead and Liedholm (1998) pointed out that survival rates of small businesses vary by sector. The study concluded that enterprises in the service sector and manufacturing are less likely to close down than those in the wholesale and retail sector (ibid).

2.3 Empirical Literature

There is significant empirical evidence of a negative relationship between the growth in real GDP and NPLs (Salas and Suarina, 2002; Rajan& Dhal, 2003; Fofack, 2005; and Jimenez and Saurina, 2005). The explanation provided by the literature for this relationship is that strong positive growth in real GDP usually translates into more income which improves the debt servicing capacity of borrower which in turn contributes to lower non-performance of loans (NPLs). Conversely, when there is a slowdown in the economy (low or negative GDP growth), the level of NPLs should increase.

Rose, (2002) argues that credit analysis is important in ensuring that institutions maintain good loaning policy.   The credit department must answer three questions regarding each loan application that is: the borrower credit worthy; can the loan agreement be properly structured and

documented for adequate protection of stakeholders and ensure that customer's probability of loan repayment is high without excessive strain? And can the institution perfect its claim against the assets or earnings of the customer so that, in the event of default the funds can be recovered rapidly at low cost and with low risk?

Mwaura (2003) asserted that there was need to formulate a prudent credit policy for individual manufacturing firms. Therefore formulation of a prudent credit policy for institution of this nature is important to avoid loss of its market to its rivals and improve performance in terms of development. David and Murungi (2004), point out that the types of loan offered by agro-based institutions are both short-term and long-term loans. The short-term loans are those repayable within a year and are usually meant for immediate, short-term or emergency expenses. The amounts are generally small and did not help farmers to increase their overall earning capacity. Long-term loans on the other hand are for larger amounts and had a longer term effects. They helped farmers to increase their earning capacity through success of projects financed by these loans. Repayment period was usually for more than one year. There was evidence that repayment of institutions loans was not being taken seriously by members due to lack of suitable security and poor management systems for loan collection. As a result most of them were caught up in serious cash flow problems.

Also, Kimango (2002) carried out a Study of Banks Credit Policies in Nairobi. This study highlighted the credit policies that are applicable to Nairobi banks without pointing out their significance on the performance of bank loans. On the other hand, a study undertaken by Central Bank of Kenya, (2009) on the Growth in the Banking Industry, identified factors hindering the growth of banks in Kenya. Factors such as mismanagement and diversion of funds for purposes

not intended for, plays a major role in the increased level of impaired loans. Opande (2003) examined how lending organizations predicted loans default rates among its clients .The findings showed that organizations used a "sit back" approach when dealing with the aspect of risk. His focus was on ICDC. Ogola (2002) studied the structure and servicing of Kenya`s public debt. She found out that the Government was not happy with the level of stock of domestic debt and the need to put in place measures to reduce it. As part of the measures of addressing the problem, she recommended that Government should support the private sector to make it more productive and in the process raise Gross domestic product.

2.4 Summary and gaps to be filled by the study

It was evident from the literature review that there were many problems hindering the growth of MFIs. MFIs financing was a multifaceted process that includes many criteria because of the risky nature of SMEs businesses. Different models are used in the assessment of loan applications. The literature review highlighted that those who managed to get loans also faced another dilemma, namely that of not managing or servicing their debt effectively. Many factors affecting loan repayments were discussed in this chapter. Although SME business feels that access to finance was limited, this access was controlled partly by external forces such as legislation over which the MFIs had no control. The issues of liquidity, credit risk and information asymmetry limit a MFIs' involvement in this sector.

From the above discussions, it was evident a research gap exists in the area; the determinants of micro credit performance in Kenya micro finances. Hence, little research had been done in this area of study and thus there was a need to carry out more research in the future in order to address non-performance of micro credit in microfinances. It was also notable that fewer studies

have been done on the microfinances institutions. This research will assist in acknowledging and filling the gap that exists in both financial and non-financial sectors in terms of information sharing and implementation of management policies.

2.5   Conceptual framework

Figure 1, below presents the researcher's conceptual framework.

The researcher conceptualizes that the given independent variables in the figure affect micro credit performance in micro finances.

<u>Figure 1: Conceptual framework</u>
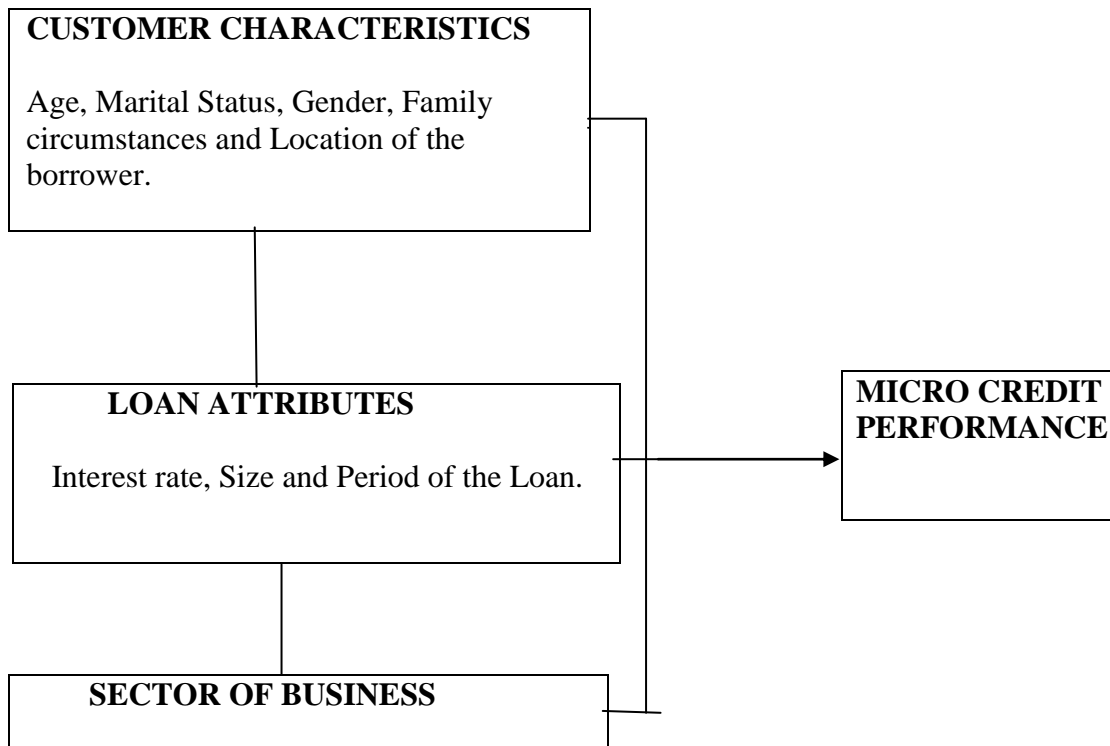
```
┌─────────────────────────────────────┐
│ CUSTOMER CHARACTERISTICS             │
│                                      │
│ Age, Marital Status, Gender, Family  │
│ circumstances and Location of the    │
│ borrower.                            │
└─────────────────────────────────────┘

┌─────────────────────────────────────┐        ┌──────────────────────┐
│        LOAN ATTRIBUTES              │        │ MICRO CREDIT         │
│                                      │───────▶│ PERFORMANCE          │
│  Interest rate, Size and Period of   │        │                      │
│  the Loan.                           │        └──────────────────────┘
└─────────────────────────────────────┘

┌─────────────────────────────────────┐
│      SECTOR OF BUSINESS              │
└─────────────────────────────────────┘
```

Independent Variables   Dependent Variable

Source: Researcher (2013)

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CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter contains details about the study locale, research design, target population, Sample and Sampling Procedure, Data Validity and Reliability, Data Presentation. It also includes the method that was used in collecting data and a model for analyzing the data in order to come up with answers to the research questions.

3.2 Study Locale

The study was carried out in Machakos County at SMEP-DTM. The main office of SMEP was based at Machakos town and controls operations in Machakos town, Mwala, Kathiani, Kangundo, Talaand Kalama. The researcher was prompted to choose this area because the operations of SMEP covers almost all the parts of the County and as such expects a variety of responses. This area was chosen because of the familiarity with these geographical regions as the researcher works in this area and therefore access was expected to be easier.

3.3 Research Design

Research design has been defined as the process of creating an empirical test to support or refute a claim (Borg and Gall, 1989). This research was a survey research of micro credit borrowers at SMEP-DTM Machakos branch.

 Survey research was used: "to answer questions that had been raised, to solve problems that had been posed or observed, to assess needs and set goals, to determine whether or not specific objectives had been met, to establish baselines against which future comparisons can be made, to analyze trends across time, and generally, to describe what exists, in what amount, and in what context." (Isaac & Michael, 1997, p. 136). The researcher was therefore convinced that this was the best design to establish the determinants of micro credit performance in microfinances in

Kenya with evidence from SMEP-DTM. Kraemer (1991) identified that ''survey research uses a selected portion of the population from which the findings can later be generalized back to the population''.

3.4 Target Population

Target population is the larger group to which one hopes to generalize findings (Mugenda and Mugenda 1999). Small and Micro Enterprise Programme (*SMEP*) DTM at Machakos County which was a deposit taking MFI constitutes the unit of interest; hence it was the target population. The unit of study was all micro-credit borrowers in the MFI who had borrowed loans for at least the last three years from the year 2009. This time period was very important because it's just before and after the passing of the micro finance bill of 2010 and the microfinance attained the deposit taking status. Again, in most MFIs loans are repayable in periods between three to four years. During this period the micro finance had advanced loans to 7000 borrowers on average. This was therefore the target population.

3.5 Sample and Sampling Procedure

According to Wiersman(1995), ''a sample is a small proportion of the target population selected using some systematic procedures for study. Sampling is a research procedure that is used for selecting a given number of subjects from a target population as representative of that population''. Wiersman(ibid) pointed out that, ''an ideal sample should be large enough so that , the investigation can be with confidence and certainty similar to a different sample of the same size, if drawn using the same procedure and give approximately similar pilot study''.

Roscoe (1975) proposes that, sample sizes larger than 30 and less than 500 are appropriate for most research. The sample size for this study was 180 borrowers.

Mugenda and Mugenda (1999), and Orodho (2004) observed that stratified random sampling ensures that certain sub-groups in the population was represented in the sample in proportion to their numbers in the population itself to avoid bias in the sample drawn.

Stratified sampling was used to select the sample of borrowers for the study.

Purposive sampling was used to select three areas out of the six covered namely: Machakos town, Mwala and Kangundo.

Therefore , the researcher achieved the desired representation of borrowers from various categories (strata), in this case the different areas covered, using the proportional allocation format advanced by Kothari (2004), which was used to obtain the number of items from each stratum as shown below:

Stratum sample size = Number of borrowers in the stratumX Desired sample size
Total Population of borrowers in the areas

Table 1: Sample size

Stratum	Number of Borrowers	Stratum Sample Size
Machakos Town	1620	84
Mwala	840	44
Kangundo	1050	53
TOTAL	3510	180

Source: Researcher (2013)

Note: The Figures on the number of borrowers in each stratum was obtained from the branch officer of SMEP Machakos.

3.6.0 Data Collection Instruments

The researcher used a questionnaire guide on a drop and pick later basis in the study. Questionnaires were a collection of items to which a respondent is expected to react usually in writing. This method allowed the researcher to collect a lot of information within a very short time. ''Questionnaires can be useful for collecting data on simple and well-defined issues''.(Bryman, A..2004). According to Naremo (2002): ''the questionnaires will condense all the authentic data against the question in it and is free from distortion at the time of analysis. Secondly, they reduce the researchers frequency of visiting the samples as they only need to be collected back once dispatched, and thirdly, they do remove the need for face to face meeting between the interviewer and the respondents''.

3.6.1 Validity and Reliability of the research instrument

Best and Kahn (1998) defines validity as: The degree to which a test measures what it purports to. Moore (1983) writes that, the term validity indicates the degree to which an instrument measures the construct under investigation.

Validation of the questionnaires will be done by the supervisor who is an expert in research. This was done to help the researcher identify the items that were in adequate and ambiguous in collecting the relevant information. The items were then modified to improve the quality of the instrument and hence validity.

Kothari (2002) asserts that a reliable instrument consistently produces the expected results when used more than once to collect data from the same sample, randomly drawn from the population. To establish reliability, the researcher administered questionnaires to five samples. The Pearson's Product Moment Correlation Coefficient formula was used to compute the correlation coefficient index between the two scores to establish the extent to which the contents of the

questionnaire was consistent in eliciting the responses. The formula is as follows:

$$r = \frac{\sum xy}{(\sum x^2)(\sum y^2)}$$

Where:

r = Pearson reliability coefficient index

x= the deviation of X scores from the mean (first test administration)

y=the deviation of Y scores from the mean (second test administration)

3.6.2 Data Validity and Reliability

''Validity is defined as the accuracy and meaningfulness of inferences, which are based on the research results'' (Mugenda and Mugenda, 1999). For the study to achieve validity and reliability data will be checked for coding errors and omissions while coding into excel sheets. The database was also verified for accuracy and completeness of all the entries to ensure reliability of data was achieved. The questionnaires were pretested before the actual data collection was undertaken.

3.7 Data collection Procedures

The researcher obtained permission from School of Business, Kenyatta University. He then applied for an authority letter from the Chief Executive, SMEP, to be allowed to collect data from the suggested branch. He booked for an appointment to meet the branch manager at Machakos so as to agree on when it was convenient to visit the areas covered so as to deliver the questionnaires to the loan officers on the ground. The officers were given three weeks to fill in their responses so as to allow them do that without any pressure. The researcher then alerted the officers two days before going to collect them.

3.8 Data Analysis and Presentation

The researcher edited the filled questionnaires to identify those items that were wrongly responded to, spelling mistakes, blanks left unfilled, accuracy and uniformity of information obtained. He then classified the data according to the different forms that were collected.

The researcher used Logit model to analyzethe data obtained. In Logit model, a regressor "Default" is a qualitative variable and the main objective is to find the relationship and impact of factors on default identified in underlying theory and assumptions. The dependent variable default is attributed either "yes" or "no", hence categorized as dichotomous. ''There are three approaches to estimating a dichotomous response model, namely the Linear Probability Model (LPM), the Logit model and the Probit model'' (Gujarati and Porter, 2005:542). As the data was both quantitative and qualitative in nature, one way of quantifying the attributes to be able to use the Logit model is to construct artificial variables taking on the value of "1" to indicate the presence of a variable, with 0 indicating otherwise. To prevent the dummy variable trap, the rule (M-1) is applied. According to Gujarati (2005), "For each qualitative regressor, the number of dummy variables introduced must be one less than the categories of that variable." ''The models guarantee the probability will lie between 0 and 1'' (Gujarati & Porter, 2005).

Performance of micro credit or loans in this case will be defined using the Probability of Default 2 or Performance 2 According to Basel II Committee (2006).

Probability of Default 2 or Performance 2

According to Basel II Committee (2006), an account which is past due more than 90 days on any material obligation to the banking group is considered as defaulted. Therefore in this study, all the accounts that were identified to have passed 90 days were classified as Default 2 or performance 2 or PROBDEF2.

The following Logit model was used to analyse the determinants of micro credit performance in microfinances in Kenya. The researcher used logit model similar to the one used by Jimenez and Saurina (2005) in analyzing the determinants of the probability of default (PD) of bank loans in terms of variables such as collateral, type of lender and bank-borrower relationship while controlling for the other explanatory variables such as size of loan, size of borrower, maturity structure of loans and currency composition of loans. However in this study the researcher used age, bank balance , customer type (business or individual), interest rate(above or below premium), loan size(small, medium or large) , loan term(short or long term), loan purpose(asset finance or not) , loan type ,sex of the borrower, customer new or existing, ,customer education to analyse the determinants of micro credit performance.

$PROBDEF2 = \beta 0 + \beta 1\ AGEO + \beta 2\ BKBALNEG + \beta 3\ CUSTTYPE + \beta 4\ IRABOVEPR + \beta 5 LOANSIZEL + \beta 6 LOANSIZEM + \beta_7\ LOANSIZES + \beta 8\ LOANTERML + \beta 9\ LTABF + \beta_{10} LTTERM + \beta 11\ CUSTF + \beta_{12}\ BUSRELATN + \beta 13\ CUSTN + \beta 14\ CUSTED + \mu$ ……. (3.1)

Where

β_0 is a constant

β_i are coefficients to be estimated

μ is an error term, while the dependent variables and independent variables used in the models are defined in Table 3.2.

To evaluate the Micro credit performance of the microfinance, the researcher used the variable delinquency rate which meant failure to meet repayment obligation on the schedule date, the Default 2or performance 2 or PROBDEF2. The rate of delinquency was computed as the proportion of total loan amount in arrears on the promised date (Sharma and Zeller, 1997). The variable was zero in the case of complete repayment on schedule date and equal to one in the

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case of complete delinquency. The influence of different factors on performance rate was estimated using the Logit model as specified in the above Logit models and in the table below.

Table 3.2 presents definitions and the *a priori* or expected signs based on underlying theory and assumptions on the dependent variables used in the equation 3.2

Table 3.2: Variables, definition and *a priori* expectation

Variable	Definition	Expected Sign
AGEO	A dummy that takes the value of one if the age of the borrower is over 35 and zero otherwise	-
BKBALNEG	A dummy that takes the value of one if the bank balance is negative and zero otherwise.	+
CUSTTYPE	A dummy that takes the value of one if the borrower is a individual and zero otherwise	+
IRABOVEPR	A dummy that takes the value of one if interest rate above prime at the time of taking up the loan and zero otherwise	+
LOANSIZES	A dummy that takes the value of one if a loan size is small (below Kshs 100 000	+/-
LOANSIZEM	A dummy that takes the value of one if a loan size is medium (Kshs 101 000 to kshs 500 000).	+/-
LOANSIZEL	A dummy that takes the value of one if a loan size is medium (Kshs 500 001 and above	+
LOANTERML	A dummy that takes the value of one if a loan period is long term (more than 12months) and zero otherwise.	+/-
LTABF	A dummy that takes the value of one if a loan type is Asset Based Finance and zero otherwise	-
LTTERM	A dummy that takes the value of one if a loan type is term loan and zero otherwise.	+
CUSTF	A dummy that takes the value of one if the borrower is female and zero otherwise.	-
CUSTN	A dummy that takes the value of one if the borrower is a new client and zero otherwise	+
CUSTED	A dummy that takes the value of one if the borrower has achieved post-secondary school level of education and zero otherwise	+
BUSRELATN	A dummy that takes the value of one if the borrower has no business relationship with the bank and zero otherwise	+

Source: Researcher (2013)

Data was presented using descriptive statistics and by use of models and tables under empirical analysis using the logit model contained in Statistical Package for Social Scientists (SPSS).

CHAPTER FOUR
ANALYSIS OF EMPIRICAL RESULTS

4.1 DESCRIPTIVE STATISTICS

This section discusses loan borrower's probability of re-payment and non-re-payment of loans and factors affecting them at Micro finances sector in Kenya

The analysis of the descriptive statistics of the loan borrower's by number and percentages is presented in Table 4.1. This analysis is characterized in terms of types of borrower's, gender, age, loan type, client type, business relationship at the time of application. The table consists of two columns of variables and its attributes, numbers and percentages.

After all the accounts in arrears had been identified and counted, the researcher used the Basel II definition explained in Section 3.5 as Default 2. In this category the default (non-repayment) is 36.36 percent while repayment is 63.64 percent

Table 4.1: Descriptive analysis of borrowers

Type of borrower	Number	Percentage (%)
Individual	**100**	56%
Business	**80**	44%
Total	180	100 %
Business relationship	**Number**	**Percentage** (%)
Related	98	54%
Not related	82	46%
Total	180	100 %
Probability of default	**Number**	**Percentage (%)**
Default	120	67%
Non default	60	33%
Total	180	100%

Gender	Number	Percentage (%)
Male	97	54%
Female	83	46%
Total	180	100
Age	**Number**	**Percentage (%)**
35 and below	72	40%
Over 35	*108*	60%
Total	180	100
Account balance	**Number**	**Percentage (%)**
Negative	54	49.09
Positive	56	50.91
Total	110	100
Loan type	**Number**	**Percentage (%)**
Asset. based finance	100	56
Non-Asset based	80	44
Total	180	100
Customer type	**Number**	**Percentage (%)**
New	58	52.73.
Old	52	47.27
Total	169	100
Marital status	**Number**	**Percentage (%)**
Married	63	71.59
Others	25	28.41
Total	88	100
Business size	**Number**	**Percentage (%)**
Small	100	56
Medium	46	26
Large	34	18
Total	180	100
Loan duration	**Number**	**Percentage (%)**
Short term	35	31.82

Long term		75	68.18
Total		110	110
Loan size		**Number**	**Percentage (%)**
100,000 & below		16	14.57
100,001-500,000		75	68.18
500,001 &above		29	26.36
Total		110	100

4.2 Empirical results

In the model presented in Table 4.2 the positive sign reflects that the estimated variable increases the probability of default while the negative sign reflects that the estimated variable decreases probability of default. The model is based on default II as defined Basell II with interactions of all the regressor variables. Nagelkerke R Square and Cox & Snell R Square at 95% confidence level approximates at 57.8% and 42.2% respectively showing the model's goodness of fit was good.

Table 4.2: Summary of the model

	B	S.E.	Wald	Df	Sig.	Exp(B)
AGEO(1)	.799	.641	1.556	1	.212	2.223
BKBALNEG(1)	-1.246	.695	3.210	1	.073	.288
IRABOVER(1)	.000	.596	.000	1	1.000	1.000
LOANSIZES(1)	2.049	1.332	2.368	1	.124	7.761
CUSTTYPE(1)	-1.261	.772	2.670	1	.102	.283
LOANSIZEM(1)	.866	1.115	.603	1	.437	2.378
LOANSIZEL(1)	-.899	1.071	.705	1	.401	.407
LOANTERML(1)	1.051	.655	2.572	1	.109	2.861
LTABF(1)	-.274	.744	.135	1	.713	.761
CUSTF(1)	.043	.600	.005	1	.943	1.044

CUSTN(1)	-1.936	.697	7.725	1	.005	.144
CUSTED(1)	-.615	.619	.987	1	.321	.541
BURS(1)	-.492	.626	.617	1	.432	.611
Constant	.814	2.476	.108	1	.742	2.257

a Variable(s) entered on step 1: AGEO, BKBALNEG, IRABOVER, LOANSIZES, CUSTTYPE, LOANSIZEM, LOANSIZEL, LOANTERML, LTABF, CUSTF, CUSTN, CUSTED, BURS.

Table 4.3
Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	94.192(a)	.422	. 578

4.1.1 Age and loan repayment

The AGEO coefficient is 0.899 and a significance of 0.101. The results show a positive relationship and significant at 5%. Findings in this study contradict earlier study by Cromie (1991) which found out that young people experience a higher likelihood of default.

4.1.2 Default and cash flow management

The BKBALNEG coefficient is -1.246 and a significance of 0.073. This is a negative but insignificant relationship between default and cash flow management. In contrary, theory stipulates positive relationship with businesses with negative bank balances. In this study, the results are significant at 5%

4.1.3 Default and Business Relationship

The BUSRELATN coefficient is -0.492 and a significance of 0.432. There is a negative relationship between default and business relationship. The findings indicate that if at the time of loan application, there was a business relationship between Micro finance credit and the loan applicant; this would reduce the likelihood of default significantly.

4.1.4 Interest rate and loan repayment

The IRABOVEPR coefficient is 0.000 and a significance of 1.000. This means interest rate

above prime has no effect in determining default rate.

4.1.5 Size of Loan and default

The coefficients for LOANSIZEL = -0.799, LOANSIZEM = 0.866 and LOANSIZES= 2.049 whereas the significance level for LOANSIZES=, 0.124 and LOANSIZEM 0.102 and LOANSIZEL 0.437, there is positive relationship when the loan size is small, which means the smaller the loan the lower the defaulting rate unlike when the loan size is large. The estimated sign of the coefficient on large loans is insignificantly positive. However, this matches she a prioriexpectations presented in this study. Medium loans have a negative relationship with default supporting the findings of Hietalahti and Linden (2006) that loans that are too big also lead to repayment problems, dissatisfaction and high drop-out rates.

4.1.6 Period of loan and loan repayment

The LOANTERML coefficient is 1.081 and the significant is 0.209 indicating positive relationship, this means the longer the repayment period the higher the defaulting rate, but this also depends on the business economic environment. If the economic environment negatively affects the business, the chances of default increase, Agarwalel al. (2008) suggest that weak microeconomic conditions result in more defaults and fewer repayments of loans. Chong's (2010) study in Malaysia reflected contraction of the economy by 6.2 per cent in the first quarter of 2009 due to the global financial crisis and made business confidence seem uncertain and gloomy. In a nutshell, it is evident that long-terra loans may be both good and bad, depending on the volatility of the economy.

4.1.7 Default and genders relationship

The CUSTF coefficient is 0.043 and significance is 0.943 this show positive relationship with male gender being the higher defaulters. Suggesting there is a negative relationship between default and business owners by both male and female. The positive sign indicates that females

manage their loans or credit better than their male counterparts do. This is the same finding obtained by Evans and Winston (2008) and Chong (2010). They found that the female owners practice better credit management than their male counterparts.

4.1.8 Default and Education level relationship

The CUSTED coefficient is -0.615 and a significance value of 0.321 this shows a negative relationship, suggesting that the lower the education level the higher the default rate.

4.1.9 Default and loan type relationship

The LTABF coefficient is -0.274 and a significance value of 0.713 this shows a negative relationship, suggesting that the asset based finance are having high default rate than other non-asset based finance.

CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1   Summary of main findings

The study found the default rate to be 46.36 per cent. This percentage confirms findings of the public development finance institutions which recorded similar trends. The NEF Mbewu Fund, which is aimed at developing small businesses, found that 67 per cent of loan repayments were not paid back on time during the 2009 financial year. Timm (2011) noted the default rate as a "sickness" affecting South African SMMEs and the findings of this research validate Tinam's concerns about small business's poor payment rate.

5.2   Factors those are statistically significant

The empirical results showed that AGEO, IRABOVEPR, LOANSIZES, LOANTERML, LTABF, CUSTED, BUSRELATN and CUSTN are statistically significant at five per cent level which is relevant in this study as shown in Table 4.2.However, all the other factors or variables were found to be statistically insignificant.

5.3 Implications of findings and recommendations

Age of the loan borrower's affect the re-payment of the loan, the older the person the higher the default rate, this might be due to high dependency leading to inadequate funds to clear the loans. The interest rate of borrowing on the other hand does not influence the repayment of the loan since the Micro Finance Credit borrowing rates are in most cases below the prime interest. So the lending rates cannot be used as one of the factors to control the credit management by Micro Finance Credit. However, these two variables are very important. The following recommendations are based on factors that are statistically significant.

5.4 Recommendations for entrepreneurs

It is strategically important to establish a personal relationship with the bank and manage the accounts well before applying for a loan. The culture of banking indicates that cultivating good behavior is important in building those relationships. The client's risk profile is important to the bank since the lower the client's risk profile, the more willing the banks are to reduce interest rates. The risk of a client gives an indication of his or her potential to default. People over 35 years are encouraged to take small to medium loans since, if the loan is spread over a period of five years or more, the repayments would be very low and therefore reduce chances of default, If, however, they take large loans, their own contribution or deposit should be high. In banking, the higher the deposit the client puts down, the more willing the Micro Finance Credit is to price down. A higher deposit decreases loss, given default, and a lower loss, given default, means a lower amount to be written off by the Micro Finance Credit. This also decreases the risks to the borrower and the lender and hence increases the likelihood of pricing down as the Micro Finance Credit does not have to recover as much of the loan. Female entrepreneurs have displayed particular skills in running businesses successfully; and are less reckless than their male counterparts. Females have a low risk appetite: this neutralizes the behavior of male entrepreneurs when it comes to risk management. This male/female synergy can be a good strategy to develop sustainable and profitable small agri-businesses and create employment at the same time.

5.5 Recommendations for Micro Finance Credit

Before awarding loans, it is very important for the Micro Finance Credit to consider education level of loan borrowers because it translate to financial management skills among farmers and loan borrowers, since Micro Finance Credit is a government institution which awards loans at a

lower interest rate and the interest rates should not be included in awarding loan facilities to customers. Even though interest above prime rate does not have a positive effect on default, rising interest rates can cause the monthly repayments to spiral, particularly if the loan is large to the banks not Micro Finance Credit. The Micro Finance Credit can create an innovative fund to cater for aged clients where write-offs are not regarded as losses but as part of corporate social investment. Micro Finance Credit need to understand the demographic behaviors and then revise their lending criteria

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APPENDIX I

LETTER OF AUTHORITY FROM THE CHIEF EXECUTIVE OFFICER SMEP.

Questionnaire guide

This questionnaire does not ask for your name, your position or any other form of personal information. The study is similar to many that have been done in other countries and is aimed at describing the determinants of micro credit performance in microfinances in Kenya.

The anonymity of the inforamtion you provide will be scrupulsly protected. At your request, a summary of the results will be sent to you.

The requested information relates to the borrowers in the period between 1ST July 2009 to 30 June 2012.

1. Please respond to the following questions appropriately on the spaces provided by ticking.

    (i)   What was the sex of the borrower?

Male		Female	

    (ii)   What was the marital status of the borrower?

Married		Single	

    (iii)   Was the borrower an individual or a business?

Individual		Business	

(iv)   What was the size of the loan?

Small (belowKshs100,000)	
Medium,(Kshs 101,000 to Kshs 500,000).	
Large (Kshs 500,001 and above	

(v)   What was the loan period, short or long ?

Short-term(12monthsand below)		Long-term(more than 12months)	

(vi)   What was the type of the loan?

Asset based		Not asset based	

(vii)   Was the borrower a new or anold client?

New		Old	

(viii)   What was the Borrowers bank balance at the time of borrowing?

Negative		positive	

(ix)   Had the borrower achieved post-secondary school education?

Achieved		Not achieved	

(x)   Did the borrower have any business relationship with the bank?

Had		Did not have	

2. What was the age of the borrower? ……………………………………………….

3. What was the interest rate at the time of lending the loan?..........................